

LARGE FILING SEPARATOR SHEET

CASE NUMBER: 16-1166-GA-BLN

FILE DATE: 6/30/16

SECTION: 2 OF 2

NUMBER OF PAGES: 120

DESCRIPTION OF DOCUMENT:

ATTACHMENT C & D - CONTINUED

max 20 pts 0 38 max 10 pts 38

Metric 5. Special Wetlands.
Check all that apply and score as indicated.

<input type="checkbox"/>	Bog (10)
<input type="checkbox"/>	Fen (10)
<input type="checkbox"/>	Old growth forest (10)
<input type="checkbox"/>	Mature forested wetland (5)
<input type="checkbox"/>	Lake Erie coastal/bulwary wetland -unrestricted hydrology (10)
<input type="checkbox"/>	Lake Erie coastal/bulwary wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Erie coastal/bulwary wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Erie coastal/bulwary wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Erie coastal/bulwary wetland-restricted hydrology (5)
<input type="checkbox"/>	Relict Wet Prairies (10)
<input type="checkbox"/>	Known occurrence state/federal threatened or endangered species (10)
<input type="checkbox"/>	Significant migratory songbird/water fowl habitat or usage (10)
<input type="checkbox"/>	Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts 5 43 max 10 pts 43

Metric 6. Plant communities, interspersions, microtopography.
Vegetation Community Cover Scale

0	Absent or complete absence (0.247 to 0.247 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.

max 20 pts 43

Metric 7. Microtopography.
Score all present using 0 to 3 scale.

0	Absent
1	Present in 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

max 20 pts 43

GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: <https://opa.state.oh.us/dsw/4616401.html>

ORAM Summary Worksheet

Narrative Rating	circle answer or insert score		Result
	YES	NO	
Question 1 Critical Habitat	YES	NO	If yes, Category 3.
Question 2 Threatened or Endangered Species	YES	NO	If yes, Category 3.
Question 3 High Quality Natural Wetland	YES	NO	If yes, Category 3.
Question 4 Significant bird habitat	YES	NO	If yes, Category 3.
Question 5 Category 1 Wetlands	YES	NO	If yes, Category 1.
Question 6 Bogs	YES	NO	If yes, Category 3.
Question 7 Fens	YES	NO	If yes, Category 3.
Question 8a Old Growth Forest	YES	NO	If yes, Category 3.
Question 8b Mature Forested Wetland	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 9b Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 9d Lake Erie Wetlands - Unrestricted with native plants	YES	NO	If yes, Category 3
Question 9e Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10 Oak Openings	YES	NO	If yes, Category 3
Question 11 Relict Wet Prairies	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
Metric 1 Size	3		
Metric 2 Buffers and surrounding land use	8		
Metric 3 Hydrology	18.5		
Metric 4 Habitat	8.5		
Metric 5 Special Wetland Communities	0		
Metric 6 Plant communities, interspersions, microtopography	5		
TOTAL SCORE	43		Category based on score breakpoints Modified 2

Complete Wetland Categorization Worksheet

Wetland Categorization Worksheet

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

Choose one	Category 1	Category 2	Category 3
Final Category			

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name: Brian Slaby	
Date: 04/29/2015	
Affiliation: EnviroScience Inc.	
Address: 5070 Stow Road, Stow, Ohio 44224	
Phone Number: 330-688-0111	
e-mail address: BSlaby@EnviroScienceInc.com	
Name of Wetland: W-18	
Vegetation Community(ies): PEM	
HGM Class(es): Depression	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
Please refer to site wetlands and water resources map.	
Lat/Long or UTM Coordinate	40.640406, -80.702925
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-18	
Wetland Size (acres, hectares): 0.031 acres onsite	
Sketch: include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 29	Category: 1

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

#	Question	Circle one	Go to Question
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status	Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland.	Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland	Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland	Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phragmites australis</i> , <i>Lycium subcylindricum</i> , or <i>Phragmites australis</i> ; or 2) created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland	Go to Question 6
6	Bog. Is the wetland a peat-accumulating wetland that 1) has no significant inlets or outflows; 2) supports sedge, sedge, or sedge; specifically <i>Sphagnum</i> spp.; 3) the sedge/peat moss has >30% cover; 4) at least one species from Table 1 is present; and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland	Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (6.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland	Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland.	Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with a minimum crown height of 15m (49 ft), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status.	Go to Question 8a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Wetland should be evaluated for possible Category 3 status.	Go to Question 9b
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e., the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status.	Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e., the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Wetland is a Category 3 wetland	Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland should be evaluated for possible Category 3 status.	Go to Question 10
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status.	Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings). Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the graminaceous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland.	Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g., Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g., Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status.	Complete Quantitative Rating

28
 0 28
 max 10 pts
 max 20 pts

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/sublittoral wetland -unrestricted hydrology (10)
	Lake Erie coastal/sublittoral wetland-restricted hydrology (5)
	Lake Erie coastal/littoral wetland-restricted hydrology (5)
	Lake Erie coastal/littoral wetland-restricted hydrology (5)
	Lake Erie coastal/littoral wetland-restricted hydrology (5)
	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 (1-10)

Metric 6. Plant communities, interspersions, microtopography.

1 29
 max 20 pts
 max 30 pts

Vegetation Community Cover Scale
 Score all present (using 0 to 3 scale).

0	Aquatic bed
1	Emergent
2	Shrub
3	Forest
4	Medicinal
5	Open Water
6	Other

Vegetation Community Cover Scale
 Score all present (using 0 to 3 scale).

0	Present or comprises <0.1 ha (0.247 acres) composite area
1	Present and either comprises a 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
 Score only one.

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 no 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

Microtopography and Open Water Class Quality
 Score all present (using 0 to 3 scale).

0	Absent <0.1 ha (0.247 acres)
1	Low 0.1 to <0.2 ha (0.247 to 0.494 acres)
2	Moderate 0.2 to <0.5 ha (0.494 to 1.235 acres)
3	High >0.5 ha (1.235 acres) or more

Microtopography Cover Scale
 Score all present (using 0 to 3 scale).

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

29 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: <http://ora.science.ku.edu/oram401401.html>

ORAM Summary Worksheet

Narrative Rating	Question 1 Critical Habitat	YES (NO)	circle answer or insert score	Result
Qualitative Rating	Question 2. Threatened or Endangered Species	YES (NO)		If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)		If yes, Category 3.
	Question 4. Significant bird habitat	YES (NO)		If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)		If yes, Category 1.
	Question 6. Bogs	YES (NO)		If yes, Category 3.
	Question 7. Fens	YES (NO)		If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)		If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)		If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)		If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES (NO)		If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)		If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)		If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)		If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	0		
	Metric 2. Buffers and surrounding land use	7		
	Metric 3. Hydrology	10.5		
	Metric 4. Habitat	10.5		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	1		
	TOTAL SCORE	29		Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 5, 7, 8a, 9d, 10	<input checked="" type="radio"/> NO	Is quantitative rating score less than the Category 2 scoring threshold (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM.
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9c, 11	<input checked="" type="radio"/> NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to any of the following questions: Narrative Rating No. 5	<input checked="" type="radio"/> NO	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM.
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	<input checked="" type="radio"/> NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR superior recreational functions AND be categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	<input checked="" type="radio"/> NO	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions. In such cases, the wetland may be assigned to a higher category based on local biological significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Brian Slaby		
Date:	04/29/2015		
Affiliation:	EnviroScience Inc.		
Address:	5070 Stow Road, Stow, Ohio 44224		
Phone Number:	330-688-0111		
e-mail address:	BSlaby@EnviroScienceInc.com		
Name of Wetland:	W-19		
Vegetation Community(ies):	PEM		
Health Class(es):	Depression		
Location of Wetland:	Include map, address, north arrow, landmarks, distances, roads, etc.		
Please refer to site wetlands and water resources map.			
Latitude or UTM Coordinate	40.640422 -80.698331		
USGS Quad Name	West Point		
County	Columbiana		
Township	Yellow Creek		
Section and Subsection			
Hydrologic Unit Code	#05030101		
Site Visit	04/29/2015		
National Wetland Inventory Map	X		
Ohio Wetland Inventory Map			
Soil Survey	X		
Delineation report/map	X		

Name of Wetland: W-19	
Wetland Size (acres, hectares):	0.173 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 40	Category: Modified 2

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

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

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

Wetland Categorization Worksheet

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

Choose one Category 1 Category 2 Category 3

Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emma Kennedy		
Date:	04/29/2015		
Affiliation:	EnviroScience Inc.		
Address:	5070 Stow Road, Stow, Ohio 44224		
Phone Number:	330-688-0111		
e-mail address:	Ekennedy@EnviroScienceInc.com		
Name of Wetland:	W-20		
Vegetation Community(ies):	PEM		
HGM Class(ess):	Depression		
Location of Wetland:	Include map, address, north arrow, landmarks, distances, roads, etc.		
Please refer to site wetlands and water resources map.			
Lat/Long or UTM Coordinate	40.640258, -80.69111		
USGS Quad Name	West Point		
County	Columbiana		
Township	Yellow Creek		
Section and Subsection			
Hydrologic Unit Code	#05030101		
Site Visit	04/29/2015		
National Wetland Inventory Map	X		
Ohio Wetland Inventory Map			
Soil Survey	X		
Delineation report/map	X		

Name of Wetland: W-20	
Wetland Size (acres, hectares): 0.008 acres onsite	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 14	Category: 1

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any endangered plant or animal species? (Notes: as of January 1, 2001, if the wetland is in a township that has been designated as critical habitat for an endangered plant or animal species, then the wetland is in a critical habitat.)	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland. Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland. Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on infilled lands that has little or no vegetation?	YES Wetland is a Category 1 wetland. Go to Question 6	NO Go to Question 6
6	Bogus. Is the wetland a peat-accumulating wetland that 1) has no significant trees or shrubs; 2) supports acidophilic mosses, bryophytes, or lichens; 3) the organic processes have >50% cover; 4) at least one of the following is present; and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland. Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (6.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland. Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

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

Table 1. Characteristic plant species.

[illegible]

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

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 <10.1 ha) (4 pts)
		3 to <10 acres (1.2 to <4 ha) (3 pts)
		0.3 to < 3 acres (0.12 to <1.2ha) (2 pts)
		0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
		<0.1 acres (0.04ha) (0 pts)
	X	
3	3	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 (164 ft) or more around wetland perimeter (7)
		MEDIUM: Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
		NARROW: Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
	X	VERY NARROW: Buffers average <10m (<32ft) around wetland perimeter (0)
		2b. Intensity of surrounding land use. Select one or double check and average.
		VERY LOW: 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
		LOW: Old field (>10 years), shrubland, young second growth forest. (5)
	X	MODERATELY HIGH: Residential, fenced pasture, park, conservation bluffs, new fallow field. (3)
		HIGH: Urban, industrial, open pasture, row cropping, mining, construction. (1)
5	8	Metric 3. Hydrology.
max. 30 pts.	subtotal	3a. Sources of Water. Score at that apply.
		High pH groundwater (6)
		Other groundwater (3)
	X	Precipitation (1)
		Seasonal/intermittent surface water (2)
		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)
	X	<0.4m (<15.7in) (1)
		3d. Modifications to natural hydrologic regime. Score one or double check and average.
		None or none apparent (12)
		Recovering (7)
	X	Recovering (3)
	X	Recent or no recovery (1)
		3b. Connectivity. Score all that apply.
		100 year floodplain (1)
		Between streambeds and other human use (1)
		Part of wetland/plant (e.g. forest), complex (1)
		Part of riparian or upland corridor (1)
		3e. Insulation. Score one or old check.
		Sent to permanently inundated/saturated (4)
		Regularly inundated/saturated (3)
		Seasonally inundated (2)
	X	Seasonally saturated to upper 30cm (12in) (1)
		3f. Check all disturbance observed
		ditch
		filling/grading
		road bed/FWS track
		drainage
		Other:
		point source (nonstormwater)
		stormwater input

Wetland Categorization Worksheet

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

Choose one Category 1 Final Category Category 2 Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emma Kennedy
Date:	04/29/2015
Affiliation:	EnviroScience Inc.
Address:	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-688-0111
e-mail address:	EKennedy@EnviroScienceInc.com
Name of Wetland:	W-21, W-22, W-23
Vegetation Community(ies):	PEM
HGM Class(es):	Depression
Location of Wetland:	Include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to site wetlands and water resources map.	
Latitude or UTM Coordinate	40.639962, -80.681505; 40.639706, -80.681877; 40.63942, -80.681585
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-21, W-22, W-23	
Wetland Size (acres, hectares):	Total 0.170 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
W-21: 0.019 acres onsite W-22: 0.138 acres onsite W-23: 0.013 acres onsite	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score : 32	Category: 1 or 2 gray zone

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

#	Question	Circle one
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quad/angle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.35(a)) and the piping plover has had critical habitat proposed (50 CFR 17.35(b) July 5, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland. Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland. Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 3 wetland. Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland. Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (6.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland. Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species), little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9b
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically restricted (in lakeward or landward "submarine" wetlands) or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Wetland is a Category 3 wetland. Go to Question 9d
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 10
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland is a Category 3 wetland. Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the graminaceous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by one or more of the following species: 1) Eastern Prairie Complex locally Dry Prairie (Madison and Marion Counties), Sandusky Prairie (Wayne, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating

ORAM Summary Worksheet

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

invasive/exotic spp	fern species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Azoclea elegans</i> var. <i>glauca</i>	<i>Cela palmata</i>	<i>Carex corymbosa</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Azoclea phillyriae</i>	<i>Carex alantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex oligosperma</i>	<i>Carex stricta</i>	<i>Carex athabasca</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex olivacea</i>	<i>Cladium mariscoides</i>	<i>Carex buchanani</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Eleocharis acutifolia</i>	<i>Chamaedaphne ciliolata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sarawellii</i>
<i>Ranunculus ficaria</i>	<i>Ranunculus repens</i>	<i>Decodon verticillatus</i>	<i>Quercus polifolia</i>	<i>Gentiana andrewsii</i>
<i>Ranunculus frangula</i>	<i>Eriophorum viridicartnatum</i>	<i>Eriophorum virgatum</i>		<i>Helianthus grosseserratus</i>
<i>Thymus angustifolia</i>	<i>Gentiana</i> spp.	<i>Lact. laricina</i>		<i>Lysimachia quadrifolia</i>
<i>Thymus algericus</i>	<i>Labella lami</i>	<i>Lemnacastrum micranthus</i>		<i>Liatris spicata</i>
	<i>Lythrum hyssopifolia</i>	<i>Lythrum hyssopifolia</i>		<i>Lysimachia quadrifolia</i>
	<i>Paranthesis triflora</i>	<i>Sparganium angustifolium</i>		<i>Lysimachia alatum</i>
	<i>Rhynchosia triflora</i>	<i>Vaccinium myrtillus</i>		<i>Phytolacca americana</i>
	<i>Rhynchosia triflora</i>	<i>Vaccinium myrtillus</i>		<i>Sparganium angustifolium</i>
	<i>Salix caprea</i>	<i>Vaccinium myrtillus</i>		<i>Silphium terebinthinaceum</i>
	<i>Salix myricoides</i>	<i>Vaccinium oxycoccos</i>		<i>Sorghastrum nutans</i>
	<i>Salix serotina</i>	<i>Woodwardia virginica</i>		<i>Spartina pectinata</i>
	<i>Solidago canadensis</i>	<i>Xyris difformis</i>		<i>Solidago rigida</i>
	<i>Tofieldia glauca</i>			<i>Solidago rigida</i>
	<i>Trifolium maritimum</i>			
	<i>Trifolium maritimum</i>			
	<i>Trifolium maritimum</i>			

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

Wetland Categorization Worksheet

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

Choose one Category 1 Category 2 Category 3
 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Appendix E: Stream Habitat Forms

OH EPA Primary Headwater Habitat Evaluation Form

Modified Class II
HHEI Score (sum of metrics 1, 2, 3): 31
SITE NAME/LOCATION: South Fork Elkhorn Creek
HUC: 05020101 SITE NUMBER: S-2 RIVER BASIN: OHIO CHANGE AREA: 0.076
LENGTH OF STREAM REACH (ft): 595 LAT: 40.646655 LONG: -80.734087 RIVER CODE: RIVER MILE
DATE: 4/29/15 SCORER: E. Kennedy COMMENTS: Flow through W-1 (Sewer) 12-15
NOTE: Complete all items on this form - Refer to "Field Evaluation Manual for Ohio's PWHH Streams" for instructions
STREAM CHANNEL: NONE/NATURAL CHANNEL RECOVERING RECENT OR NO RECOVERY
MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY 1 box predominant substrate TYPE boxes (Max of 10). And list Number of significant substrate types found (Max of 5). Final metric score is sum of boxes A & B)

TYPE	PERCENT	TYPE	PERCENT
BLUR SLABS (16 pts)		SILT (16 pts)	
BOULDER (P-25 mm) (16 pts)		LEAF PACK/WOODY DEBRIS (16 pts)	
BEDROCK (16 pts)		FINE DETRITUS (16 pts)	
COBBLE (63-256 mm) (12 pts)		CLAY or MARGARITE (16 pts)	
GRAVEL (254 mm) (16 pts)		WACK (16 pts)	
SAND (<2 mm) (16 pts)		ARTIFICIAL (16 pts)	

Total of Percentages of Substrate: 100%
Box Slabs, Boulder, Cobble, Bedrock: 0 (A) 9 (B) TOTAL NUMBER OF SUBSTRATE TYPES: 2
SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 0 9

2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY 1 box)

POOL DEPTH	SCORE
> 30 centimeters (120 pts)	
> 22.5 - 30 cm (120 pts)	
> 10 - 22.5 cm (120 pts)	
< 10 cm (120 pts)	

NO WATER OR MOIST CHANNEL (16 pts) 7.5
COMMENTS: 15

3. BANK FULL WIDTH (Measure the average of 3 measurements) (Check ONLY one box)

BANK FULL WIDTH	SCORE
> 4.0 m (120 pts)	
> 3.0 m - 4.0 m (80 pts)	
> 1.5 m - 3.0 m (40 pts)	
< 1.5 m (20 pts)	

COMMENTS: 9

4. RIPARIAN ZONE AND FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) is looking downstream)

RIPARIAN ZONE AND FLOODPLAIN QUALITY	SCORE
SHADE (Per Bank)	
WIDE > 10m	
Moderate 5-10m	
Narrow < 5m	
None	

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

FLOW REGIME	SCORE
Stream Flowing	
Superslow flow with isolated pools (intermittent)	
None	

6. STREAM GRADIENT ESTIMATE (Check ONLY one box)

STREAM GRADIENT ESTIMATE	SCORE
Flat to 1% (10)	
Flat to Moderate	
Moderate to Steep	
Severe to 10% or more	

7. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

8. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

9. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

10. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

11. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

12. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

13. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

14. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

15. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

16. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

17. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

18. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

19. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

20. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

21. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

22. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

23. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

24. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

25. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

26. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

27. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

28. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

29. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

30. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

31. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

32. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

33. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

34. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

35. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

36. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

37. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

38. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

39. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

40. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

41. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

42. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

43. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

44. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

45. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

46. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

47. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

48. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

49. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

50. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

51. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

52. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

53. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

54. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

55. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

56. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

57. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

58. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

59. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

60. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

61. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

62. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

63. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

64. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

65. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

66. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

67. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

68. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

69. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

70. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

71. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

72. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

73. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

74. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

75. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

76. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

77. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

78. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

79. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

80. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

81. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

82. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

83. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

84. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

85. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

86. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

87. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

88. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

89. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

90. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

91. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

92. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	
1.5	
2.0	
2.5	
3.0	

93. STREAM CHANNEL (Check ONLY one box)

STREAM CHANNEL	SCORE
None	

Modified Class I

Ohio EPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION: South Field Energy Information Facilities

DATE: 05/08/02 **SITE NUMBER:** S-3 **RIVER BASIN:** OHIO **DRAINAGE AREA (sq mi):** 0.076

LENGTH OF STREAM REACH (in): 96 **UTM:** 40-173-70-173 **RIVER CODE:** 5-1 **RIVER MILE:** 1.25

DATE: 1/2/05 **SCORED BY:** E. Kowalski **COMMENTS:** SP173/101-5 S-1 1A W-1 (Cushard)

NOTE: Complete all items on this form - Refer to "Field Evaluation Manual for Ohio's PWHH Streams" for instructions

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

MODIFICATIONS:

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

TYPE	PERCENT	TYPE	PERCENT
BLUR SLABS (16 pts)	<input type="checkbox"/>	SILT (3 pts)	<input type="checkbox"/>
BOULDER (>256 mm) (16 pts)	<input type="checkbox"/>	LEAF PACK/MOODY DEBRIS (8 pts)	<input type="checkbox"/>
BEDROCK (16 pts)	<input type="checkbox"/>	FINE DETRITUS (4 pts)	<input type="checkbox"/>
COBBLE (64-256 mm) (12 pts)	<input type="checkbox"/>	CLAY or MARGOLAN (8 pts)	<input type="checkbox"/>
GRAVEL (2-64 mm) (8 pts)	<input type="checkbox"/>	MUCK (8 pts)	<input type="checkbox"/>
SAND (<2 mm) (8 pts)	<input type="checkbox"/>	ARTIFICIAL (8 pts)	<input type="checkbox"/>

Final Metric Score: **A** 1 **B** 0 **Total =** 1

2. SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

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

> 30 centimeters (20 pts) ☐ > 5 cm (5 pts) ☐ NO WATER OR MOST CHANNEL (0 pts) 7.5

3. COMMENTS:

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

> 4.0 m (100 ft) (20 pts) ☐ > 1.0 m - 4.0 m (25 - 75 ft) (10 pts) ☐ > 3.0 m - 4.0 m (10 ft) (15 pts) (20 pts) ☐ > 1.5 m - 3.0 m (5 ft - 9 ft) (20 pts) ☐

5. COMMENTS:

6. RIPARIAN ZONE AND FLOODPLAIN QUALITY (This information must also be completed)

7. FLOODPLAIN QUALITY (Check ONLY one box):

Stream Flowing Subsurface flow with isolated pools (intermittent) ☐ Most Channel, isolated pools, no flow (intermittent) ☐ Dry channel, no water (ephemeral) ☐

8. COMMENTS:

9. SLOPE (Number of bands per 61 m (200 ft) of channel) (Check ONLY one box):

None 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ > 3.0 ☐

10. STREAM GRADIENT ESTIMATE (Check ONLY one box):

Flat to Moderate ☐ Flat to Moderate ☐ Moderate to Steep ☐ Steep to Very Steep ☐

11. COMMENTS:

ADDITIONAL STREAM INFORMATION (This information must also be completed):

ONE PERFORMED? ☐ Yes ☒ No **OHE Score:** _____ (If Yes, Attach Completed OHE Form)

DOWNSTREAM DISCOUNTED USES:

☒ WMA Name: Yellow Creek **Distance from Evaluated Stream:** 1.25 mi

☐ CWA Name: _____ **Distance from Evaluated Stream:** _____

☐ BWA Name: _____ **Distance from Evaluated Stream:** _____

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

USGS Quad/Scale Name: WEST Point **NRCS Soil Map Page:** _____ **NRCS Soil Map Sheet Order:** _____

County: COLUMBIANA **Township/City:** MADISON

MISCELLANEOUS

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

Photograph Information:

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

Were samples collected for water chemistry? (Y/N) N **(Note the sample no. or d. and attach results) Lab Number:** _____

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

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

Additional comment/description of pollution impacts: _____

BOTIC EVALUATION

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

Fish Observed? (Y/N) _____ **Voucher?** (Y/N) _____ **Salmonids Observed?** (Y/N) _____ **Voucher?** (Y/N) _____

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST BE COMPLETED):

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



Modified Class II

OhioEPA Primary Headwater Habitat Evaluation Form

33

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

SITE NAME/LOCATION: South Hill Energy Transmission Facility
 HUC: 0302001 SITE NUMBER: 5-01 RIVER BASIN: OHIO DRAINAGE AREA (mi²): 20.0166
 LENGTH OF STREAM REACH (ft): 31 LAT: 40.648863 LONG: -80.727050 RIVER CODE: --- RIVER MILE: ---
 DATE: 4/29/15 SCORER: E. KEMMERLY COMMENTS: ---

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

STREAM CHANNEL: ☐ NONE? NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECIDIT OR NO RECOVERY MODIFICATIONS:

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY TWO predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). First metric score is sum of boxes A & B.)		HHEI Metric Points	
TYPE	PERCENT	TYPE	PERCENT
BLK SLABS (16 pts)	<input type="checkbox"/>	SILT (1 pt)	<input type="checkbox"/>
BOULDER (125 pts)	<input type="checkbox"/>	LEAF LITTER (16 pts)	<input type="checkbox"/>
BEACH ROCK (16 pts)	<input type="checkbox"/>	LEAF LITTER (16 pts)	<input type="checkbox"/>
COBBLE (65-100 mm) (12 pts)	<input type="checkbox"/>	FINE DETRITUS (16 pts)	<input type="checkbox"/>
GRAVEL (2-4 mm) (8 pts)	<input type="checkbox"/>	CLAY or MUDFLAT (16 pts)	<input type="checkbox"/>
SAND (2 mm) (8 pts)	<input type="checkbox"/>	ARTIFICIAL (16 pts)	<input type="checkbox"/>

Total of Percentages of: 9 (A) 4 (B) TOTAL NUMBER OF SUBSTRATE TYPES: 4

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 13 (A) 4 (B)

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

☐ > 30 centimeters (12 in) ☐ > 5 cm - 10 cm (15 pts)

☐ > 20 - 30 cm (15 pts) ☐ < 5 cm (5 pts)

☐ > 10 - 20 cm (10 pts) ☐ NO WATER OR MOIST CHANNELS (0 pts)

COMMENTS: --- MAXIMUM POOL DEPTH (centimeters): 5.1

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

☐ > 4.0 meters (13 ft) (15 pts)

☐ > 2.0 - 4.0 m (6 ft 7" - 13 ft 2") (15 pts)

☐ > 1.0 m - 2.0 m (3 ft 3" - 6 ft 7") (15 pts)

☐ > 1.0 m - 3.0 m (3 ft 3" - 9 ft 8") (15 pts)

COMMENTS: --- AVERAGE BANK-FULL WIDTH (meters): 0.8

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

RIPARIAN ZONE AND FLOODPLAIN QUALITY		FLOODPLAIN QUALITY	
TYPE	PERCENT	TYPE	PERCENT
WIDE > 10m	<input type="checkbox"/>	WIDE > 10m	<input type="checkbox"/>
MODERATE 5-10m	<input type="checkbox"/>	MODERATE 5-10m	<input type="checkbox"/>
NARROW < 5m	<input type="checkbox"/>	NARROW < 5m	<input type="checkbox"/>
NONE	<input type="checkbox"/>	NONE	<input type="checkbox"/>

COMMENTS: ---

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

☐ Stream Flowing Steadily with no labeled pools (intermittent)

☐ Stream Flowing Steadily with labeled pools (intermittent)

☐ Stream Flowing Steadily with no labeled pools (intermittent)

☐ Stream Flowing Steadily with labeled pools (intermittent)

COMMENTS: ---

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

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

7. STREAM GRADIENT ESTIMATE

☐ Flat to Slightly Sloped ☐ Moderate to Steep ☐ Steep (10-20%)

8. PWHH Form Page - 1

ADDITIONAL STREAM INFORMATION (This information must also be completed):

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score: --- (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USES:

☒ WW Name: Yellin Creek Distance from Evaluating Stream: ~1.25 mi

☐ CWR Name: --- Distance from Evaluating Stream: ---

☐ BWH Name: --- Distance from Evaluating Stream: ---

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

USGS Quadrangle Name: West Point NRCS Soil Map Page: --- NRCS Soil Map Sheet Order: ---

County: Columbiana Township/City: Madison

MISCELLANEOUS

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

Photograph information: ---

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

Were samples collected for water chemistry? (Y/N) --- (Note lab sample no. or ID and attach results) Lab Number: ---

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

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

Additional comments/description of pollution impacts: large pile of discarded tires

located in channel

BIOIC EVALUATION

Performed? (Y/N) --- (If Yes, Record all observations. Voucher collection optional. NOTE: All voucher samples must be labeled with the 10 number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) --- Voucher? (Y/N) --- Salamanders Observed? (Y/N) --- Voucher? (Y/N) ---

Frogs or Toads Observed? (Y/N) --- Voucher? (Y/N) --- Aquatic Invertebrates Observed? (Y/N) --- Voucher? (Y/N) ---

Comments Regarding Biology: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

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ADDITIONAL COMMENTS: ---

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ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

ADDITIONAL COMMENTS: ---

class I

Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION _____ **OHIO DRAINAGE AREA (w/)** 0406

HLS 0503D **SITE NUMBER** S-5 **RIVER BASIN** _____

LENGTH OF STREAM REACH IN 310 **LAT.** 40.84817 **LONG.** -80.727007 **RIVER CODE** _____

DATE 4/14/15 **SCORER** E. KEMMED **COMMENTS** _____

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

☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECEIPT OR NO RECOVERY MODIFICATIONS:

HHEI Score (sum of results 1, 2, 3): 23

WHEN PERFORMED PERCENT POINTS <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 5px;">13</div> <div style="margin-left: 20px;">A+B</div>		Pool Depth Max. 5.0 ft <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 5px;">5</div>		Bankfull Width MAX 50 <div style="border: 1px solid black; padding: 5px; display: inline-block; margin: 5px;">5</div>	
--	--	---	--	--	--

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> GULF SLABS (10 pts)	<input type="checkbox"/>	<input type="checkbox"/> SALT FLATS	<input type="checkbox"/>
<input type="checkbox"/> BOLLER (2-28 mm) (16 pts)	<input type="checkbox"/>	<input type="checkbox"/> LEAF PACK MOOXY DEBRIS (3 pts)	<input type="checkbox"/>
<input type="checkbox"/> BOLLER (18 pts)	<input type="checkbox"/>	<input type="checkbox"/> FINE DETRITUS (3 pts)	<input type="checkbox"/>
<input type="checkbox"/> COBBLES (RS-24 mm) (12 pts)	<input type="checkbox"/>	<input type="checkbox"/> CLAY or MARL PAN (5 pts)	<input type="checkbox"/>
<input type="checkbox"/> CORAL (2-4 mm) (3 pts)	<input type="checkbox"/>	<input type="checkbox"/> MUCK (3 pts)	<input type="checkbox"/>
<input type="checkbox"/> SAND (2 mm) (8 pts)	<input type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL (3 pts)	<input type="checkbox"/>

Total of Percentages of
Big Slabs, Bollers, Cobble, Bedrock

(A) 9 (B) 4 TOTAL NUMBER OF SUBSTRATE TYPES: 13

2. **Maximum Pool Depth** Measure the maximum pool depth within the 1 meter 50 ft² or evolution read at the time of evaluation. Measure pool depth from bottom of stream wall to pool bottom.

> 10 meters (20 pts) ☐ > 5 cm: 10 cm (15 pts) ☐

> 25 - 30 cm (10 pts) ☐ NO WATER OR MOST CHANNEL (2 pts) ☐

> 10 - 25 cm (5 pts) ☐

3. **COMMENTS:**

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

> 4.0 meters (4-17) (10 pts) ☐ > 10 m - 1.5 m (2-3) - 4 (7) (5 pts) ☒

> 3.0 m - 4.0 m (0-7) - (3) (25 pts) ☐ \$ 1.0 (\$ 3-7) (5 pts) ☐

> 1.5 m - 3.0 m (0-4) - 5 (7) (20 pts) ☐

AVERAGE BANKFULL WIDTH (meters): 0.9

This information must also be completed
for the River Unit (U) and Right (R) as cooling downstream

RIPARIAN ZONE AND FLOODPLAIN QUALITY

RIPARIAN WIDTH		FLOODPLAIN QUALITY		L		R	
(Per Bank)		(Per Bank)					
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Wide > 10m	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Nature Forest, Wetland	<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"/>	Moderate 5-10m	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	Invasive Forest, Shrub or Old Field	<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"/>	Narrow < 5m	<input type="checkbox"/> <input type="checkbox"/>	Residential, Park, New Field	<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"/>	None	<input type="checkbox"/> <input type="checkbox"/>	Fenced Pasture	<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"/> <input type="checkbox"/>	Stream Flowing	<input type="checkbox"/> <input type="checkbox"/>	Mostly Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> <input type="checkbox"/>	Substrate flow with isolated pools (Intermittal)	<input type="checkbox"/> <input type="checkbox"/>	Dry channel, no water (Ephemeral)

☐ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0
 SNUGGITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box)

Stream Gradient Estimate
☐ Fall (downstream) ☐ First to Moderate ☒ Moderate to Down ☐ Severe to Severe

ADDITIONAL STREAM INFORMATION (This information must also be completed):

QHE PERFORMED: ☐ Yes ☐ No QHE Score: _____ (If Yes, Attach Completed QHE Form)

DOWNSTREAM DESIGNATED USES

☒ WWH Name: Yellow Creek Distance from Evaluated Stream: ~1.25 mi

☐ CWH Name: _____ Distance from Evaluated Stream: _____

☐ EWH Name: _____ Distance from Evaluated Stream: _____

NAPPING: ATTACH COPIES OF MAPS INCLUDING THE ENTIRE WATERED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: WEST POINT NRCS Soil Map Page: _____ NRCS Soil Map Sheet Order: _____

County: Colman, BURLA Township: 000000 City: _____

MISCELLANEOUS

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

Photograph Information: _____

Received Twisted? (Y/N) N Canopy (% open): 10 %

Were samples collected by water chemists? (Y/N) N (Note lab sample no. of 10 and station nests) Lab Number: _____

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

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

Add/omit comment/description of collection methods: _____

BIOTIC EVALUATION

(If Yes, Record all observations. Voucher collections optional. NOTE: All voucher specimens to be labeled with the site ID number. Include appropriate field data sheets from the Primary/Secondary Habitat Assessment Manual)

Permitted? (Y/N) N Voucher? (Y/N) N Sideroxylon? Observed? (Y/N) N Voucher? (Y/N) N
 Fish Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N
 Comments Regarding Biology _____

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

OhioEPA Primary Headwater Habitat Evaluation Form

CLASS I

HHEI Score (sum of metrics 1, 2, 3): **11**

SITE NAME/LOCATION: South Field, 10000 Intercommunal Facility, Madison Twp, Columbiana Co.
 RUC: 05030101 SITE NUMBER: S-10 RIVER BASIN: OHIO DRAINAGE AREA (mi²): 41
 LENGTH OF STREAM REACH (in): 103 LAT: 40.86°N LONG: 82.71°W RIVER CODE: 1
 DATE: 11/24/2015 SCORER: M. G. Moore COMMENTS:

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

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

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.)		HHEI METRIC POINTS	
TYPE	PERCENT	Substrate	Max = 40
BLOR SLABS (16 pts)	<input type="checkbox"/>	SILT (3 pts)	<input type="checkbox"/>
BOULDER (>256 mm) (16 pts)	<input type="checkbox"/>	LEAF PACK/WOODY DEBRIS (3 pts)	<input type="checkbox"/>
BEDECK (16 pts)	<input type="checkbox"/>	FINE DETRITUS (3 pts)	<input type="checkbox"/>
COBBLE (64-256 mm) (12 pts)	<input type="checkbox"/>	CLAY or HARDPAN (0 pts)	<input type="checkbox"/>
GRAVEL (2-64 mm) (8 pts)	<input type="checkbox"/>	MUCK (0 pts)	<input type="checkbox"/>
SAND (<2 mm) (8 pts)	<input type="checkbox"/>	ARTIFICIAL (0 pts)	<input type="checkbox"/>

Total of Percentages of: 20 (A) 3 (B) 23 TOTAL NUMBER OF SUBSTRATE TYPES:

Score of TWO MOST PREDOMINANT SUBSTRATE TYPES: 2 (A) 3 (B) 5

1. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes). (Check ONLY one box):
☐ > 30 centimeters (30 pts)
☐ > 22.5 - 30 cm (20 pts)
☒ > 10 - 22.5 cm (15 pts)
☐ NO WATER OR MOIST CHANNEL (0 pts)

2. COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements). (Check ONLY one box):
☐ > 4.0 meters (> 13' (30 pts))
☐ > 3.0 m - 4.0 m (> 9'7" - 13') (24 pts)
☒ > 1.5 m - 3.0 m (> 4'7" - 9'7") (18 pts)
☐ < 1.5 m (< 4'7") (0 pts)

4. COMMENTS: 3

5. AVERAGE BANKFULL WIDTH (meters): 9

This information must also be completed

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

PERMANENT QUALITY	TEMPORARY QUALITY
<input checked="" type="checkbox"/> V.R. (Per Bank)	<input checked="" type="checkbox"/> V.R. (Per Bank)
<input type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Mature Forest, Wetland
<input type="checkbox"/> Immature Forest, Shrub or Old Field	<input type="checkbox"/> Immature Forest, Shrub or Old Field
<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Fenced Pasture
<input type="checkbox"/> Hitting or Construction	<input type="checkbox"/> Hitting or Construction

2. FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
☐ Stream Flowing
☒ Subsurface flow with isolated pools (intermittent)
☐ Mould Channel, isolated pools, no flow (intermittent)
☐ Dry channel, no water (ephemeral)

3. SINUOSITY (Number of bends per 61 m (200 ft) of channel). (Check ONLY one box):
☒ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ > 3

4. STREAM GRADIENT ESTIMATE (Per 100 m):
☒ Flat (0 to 10%)
☐ Flat to Moderate
☐ Moderate to Severe
☐ Severe (10 to 100%)

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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score: 5-6 (If Yes, Attach Completed QHEI Form)
 DOWNSTREAM DESIGNATED USE(S): Little Yellow Creek
 Distance from Evaluated Stream: ~0.5 mi
 CWH Name: West Point
 Distance from Evaluated Stream: 0.01
 EVH Name: Columbiana
 Distance from Evaluated Stream: 0.01

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

USGS Quadrangle Name: West Point NRCS Soil Map Page: NRCS Soil Map Stream Order: 1

County: Columbiana Township/City: Madison Twp

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/23/2015 Quantity: 0.01

Photograph Information:

Elevated Turbidity? (Y/N): N Canopy (% open): 5-10

Were samples collected for water chemistry? (Y/N): Y (Note lab sample no. or ID, and attach results) Lab Number: ---

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, please explain: ---

Additional comments/description of pollution impacts: ---

BIOTIC EVALUATION

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

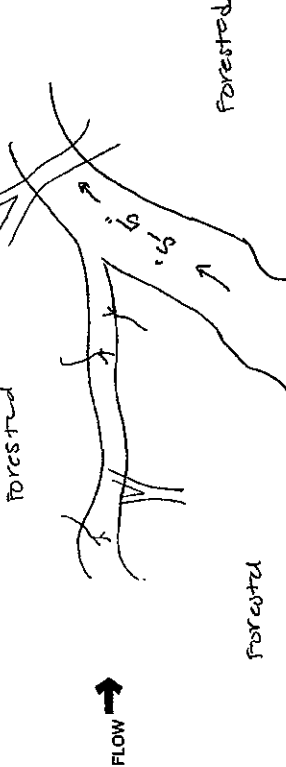
Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N

Frogs or Toads Observed? (Y/N): N Voucher? (Y/N): N Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): N

Comments Regarding Biology: ---

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

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



class I

SURF

HHEI Score (sum of metrics 1, 2, 3) : 20

SITE NAME LOCATION SOUTH BAY BRIDGE / INTERSECTION ELLERY / MCKINLEY STS / CALIFORNIA CO
HUC 60301 SITE NUMBER S-7 RIVER BASIN Chio DRAINAGE AREA (sq mi) 21
LENGTH OF STREAM REACH (N) 313 LAT 40.04095 LONG -80.72623 RIVER CODE RIVER MILE
DATE 11/24/20 SCORER M Gilmore COMMENTS

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

STREAM CHANNEL MODIFICATIONS:

☐ NONE/NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

(atv trail crosses top of channel; recovered)

[illegible]

QUALITY
ANALYSIS
AND
TESTING
SERVICES
FOR
THE
FEDERAL
GOVERNMENT
AND
INDUSTRY

RIPARIAN ZONE AND FLOODPLAIN QUALITY						FLOODPLAIN QUALITY						COMMENTS					
RIPARIAN WIDTH			(Per Bank)			(Most Predominant per Bank)											
L	R		L	R		L	R		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"/>	Conservation Tillage	<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m	<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop	<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction	<input type="checkbox"/>	<input type="checkbox"/>				
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m	<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>				
<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"/>		<input type="checkbox"/>	<input type="checkbox"/>				
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):																	
<input type="checkbox"/> Stream Flowing									<input type="checkbox"/> Moist Channel, isolated pools, no flow (intermittent)								
<input type="checkbox"/> Subsurface flow with isolated pools (if feasible)									<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			<input type="checkbox"/> 2			<input type="checkbox"/> 3.0			<input type="checkbox"/> >3					
<input type="checkbox"/> 0.5			<input type="checkbox"/> 1.5			<input type="checkbox"/> 2.5											
STREAM GRADIENT ESTIMATE																	
<input type="checkbox"/> Flat to Moderate									<input type="checkbox"/> Moderate to Steep								
<input type="checkbox"/> Flat to Moderate									<input type="checkbox"/> Steep to 10 or more								

PHW Form Page - 1

Ohio EPA Primary Headwater Habitat Evaluation Form

CLASS I 30
 SITE NAME/LOCATION: Field Energy Intermediate Facility, Madison Township, Columbiana Co.
 HUC: 05030101 SITE NUMBER: S-9 RIVER BASIN: OHIO DRAINAGE AREA (sq mi): <1
 LENGTH OF STREAM REACH (ft): 375 LAT: 40.14° N LONG: -80.12° W RIVER CODE: _____ RIVER MILE: _____
 DATE: 11/24/2015 SCORER: A. G. BROWN COMMENTS: _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHHW Streams" for Instructions
 STREAM CHANNEL: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
 MODIFICATIONS: _____

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 2). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.)		PERCENT		TOTAL NUMBER OF SUBSTRATE TYPES:	
TYPE	PERCENT	TYPE	PERCENT	(A)	(B)
<input type="checkbox"/> SILT (> 60 µm)	<input type="checkbox"/> 30	<input type="checkbox"/> SILT (> 60 µm)	<input type="checkbox"/> 30	18	3
<input type="checkbox"/> BOLDER (> 256 mm) (16 pts)	<input type="checkbox"/> 40	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS (3 pts)	<input type="checkbox"/> 40		
<input type="checkbox"/> BEDROCK (> 16 pt)	<input type="checkbox"/> 40	<input type="checkbox"/> FINE DETRITUS (3 pts)	<input type="checkbox"/> 40		
<input type="checkbox"/> COBBLE (63-256 mm) (12 pts)	<input type="checkbox"/> 40	<input type="checkbox"/> CLAY or HARDPAN (0 pts)	<input type="checkbox"/> 40		
<input type="checkbox"/> GRAVEL (2-64 mm) (8 pts)	<input type="checkbox"/> 40	<input type="checkbox"/> MUCK (0 pts)	<input type="checkbox"/> 40		
<input type="checkbox"/> SAND (< 2 mm) (8 pts)	<input type="checkbox"/> 40	<input type="checkbox"/> ARTIFICIAL (3 pts)	<input type="checkbox"/> 40		

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 18 (A) 3 (B)

Bar Slabs, Boulder, Cobble, Bedrock, 0

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 2). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.)

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from headwaters or storm water pipes). (Check ONLY one box):
☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [16 pts]
☐ > 10 - 22.5 cm [12 pts]
☒ NO WATER OR MOIST CHANNEL [0 pts]

3. BANK FULL WIDTH (Measured on the average of 3-4 measurements). (Check ONLY one box):
☐ > 4.0 meters (> 13' [8 pts])
☐ > 3.0 m - 4.0 m (> 9' 7" - 13' [6 pts])
☐ > 1.5 m - 3.0 m (> 4' 7" - 9' 7" [4 pts])
☒ < 1.5 m (< 4' 7" [2 pts])

COMMENTS: _____

4. MAXIMUM POOL DEPTH (centimeters): NA

5. AVERAGE BANKFULL WIDTH (meters): _____

1. RIPARIAN ZONE AND FLOODPLAIN QUALITY (This information must also be completed)

2. FLOODPLAIN QUALITY (NOTE: River Left (L) and Right (R) as looking downstream)

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

COMMENTS: _____

3. FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
☐ Stream Flowing
☐ Subsurface flow with isolated pools (intermittent)
☒ Moist Channel, Isolated pools, no flow (intermittent)
☐ Dry channel, no water (ephemeral)

COMMENTS: _____

4. SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):
☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ > 3

5. STREAM GRADIENT ESTIMATE
☐ Flat (0.5 m/m or less)
☐ Flat to Moderate
☒ Moderate to Severe
☐ Severe (10 m/m or more)

PHHW Form Page - 1

October 24, 2002 Revision

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): _____

Distance from Evaluated Stream: ~0.5 mi

Distance from Evaluated Stream: _____

Distance from Evaluated Stream: _____

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

USGS Quadrangle Name: West Point NRCs Soil Map Page: _____ NRCs Soil Map Stream Order: _____

County: Columbiana Township: Madison Township

MISCELLANEOUS

Base Flow Conditions? Y Date of last precipitation: 11/23/2015 Quantity: 0.01"

Photograph Information: PB 240030435 sub 1 32 f, 33 v, 34 v, 28 f

Elevated Turbidity? N Canopy (% open): 5

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

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

is the sampling reach representative of the stream? Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? N (If Yes, Record all observations. Voucher collectors optional. NOTE: all voucher samples must be labeled with the IO number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? N Voucher? N Salamanders Observed? N Voucher? N Voucher? N

Frogs or Toads Observed? N Voucher? N Aquatic Macroinvertebrates Observed? N Voucher? N

Comments Regarding Biology: _____

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

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

Forestal Slope →

Flow into off-site stream

Alfalfa field (hill top)

PHHW Form Page - 2

October 24, 2002 Revision

Ohio EPA Primary Headwater Habitat Evaluation Form

CLASS D

HHEI Score (sum of metrics 1, 2, 3): **50**

SITE NAME/LOCATION: SEE 10/22/2012 RIVER BASIN: OH10 DRAINAGE AREA (sq mi): 21 RIVER MILE: 1.0
 LENGTH OF STREAM REACH (m): 200 LAT: 40-44.17 LONG: 80-71.9 RIVER CODE: 10
 DATE: 10/15 SCORER: L. Sawyer COMMENTS:

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

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

SUBSTRATE		PERCENT		HHEI Metric Points	
TYPE	PERCENT	TYPE	PERCENT	Substrate	Score
<input checked="" type="checkbox"/> BLR SLABS (16 pss)	0	<input checked="" type="checkbox"/> SILT/CLAY	100	Max = 40	20
<input checked="" type="checkbox"/> BOULDER (>256 mm) (16 pss)	0	<input checked="" type="checkbox"/> FINE DETRITUS (3 pss)	100	Max = 30	15
<input checked="" type="checkbox"/> BEDROCK (16 pss)	0	<input checked="" type="checkbox"/> CLAY or HARPAN (3 pss)	100	Max = 20	10
<input checked="" type="checkbox"/> COBBLE (63-256 mm) (12 pss)	0	<input checked="" type="checkbox"/> MUCK (3 pss)	100	Max = 10	5
<input checked="" type="checkbox"/> GRAVEL (2.44 mm) (8 pss)	0	<input checked="" type="checkbox"/> ARTIFICIAL (3 pss)	100	Max = 5	2.5
<input checked="" type="checkbox"/> SAND (<2 mm) (8 pss)	0				

Substrate Total Percentages of: 5 (A) 15 (B) 5 (C) 5 (D) 5 (E) 5 (F) 5 (G) 5 (H) 5 (I) 5 (J) 5 (K) 5 (L) 5 (M) 5 (N) 5 (O) 5 (P) 5 (Q) 5 (R) 5 (S) 5 (T) 5 (U) 5 (V) 5 (W) 5 (X) 5 (Y) 5 (Z)

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: (A) 15 (B) 5

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

2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 67 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes). (Check ONLY one box.)

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

4. AVERAGE BANKFULL WIDTH (meters)

This information MUST also be completed

NOTE: River Left (L) and Right (R) as looking downstream

RIPARIAN ZONE AND FLOODPLAIN QUALITY

RIPARIAN WIDTH

PERCENT

PERCENT

PERCENT

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

Stream Flowing

Substrate flow with isolated pools (intermittent)

COMMENTS

PERCENT

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Ohio EPA Primary Headwater Habitat Evaluation Form

CLASS I
HHEI Score (sum of metrics 1, 2, 3): **17**

SITE NAME/LOCATION: W-10, W-11, W-12, W-13, W-14, W-15, W-16, W-17, W-18, W-19, W-20, W-21, W-22, W-23, W-24, W-25, W-26, W-27, W-28, W-29, W-30, W-31, W-32, W-33, W-34, W-35, W-36, W-37, W-38, W-39, W-40, W-41, W-42, W-43, W-44, W-45, W-46, W-47, W-48, W-49, W-50, W-51, W-52, W-53, W-54, W-55, W-56, W-57, W-58, W-59, W-60, W-61, W-62, W-63, W-64, W-65, W-66, W-67, W-68, W-69, W-70, W-71, W-72, W-73, W-74, W-75, W-76, W-77, W-78, W-79, W-80, W-81, W-82, W-83, W-84, W-85, W-86, W-87, W-88, W-89, W-90, W-91, W-92, W-93, W-94, W-95, W-96, W-97, W-98, W-99, W-100
 SITE NUMBER: 5-14 RIVER BASIN: OH-10 DRAINAGE AREA (sq. mi.): 21
 LENGTH OF STREAM REACH (ft): 27 LAT: 40-44-48 LONG: -80-71-78 RIVER CODE: 1
 DATE: 4/30/15 SCORER: C. Seyler COMMENTS:
 NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHHW Streams" for Instructions
 STREAM CHANNEL: PERMANENT CHANNEL ☒ PERMANENT ☐ SEMI-PERMANENT ☐ INTERMITTENT ☐ NON-PERMANENT ☐ NO RECORD
 MODIFICATIONS:

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate types from A & B. (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.		HHEI Metric Points	
TYPE	PERCENT	TYPE	PERCENT
BLK SLABS (18-24 in)	<input type="checkbox"/>	SLT (18-24 in)	<input type="checkbox"/>
BOLUS (25-36 in)	<input type="checkbox"/>	SLT (37-48 in)	<input type="checkbox"/>
BRICK (18 in)	<input type="checkbox"/>	SLT (49-60 in)	<input type="checkbox"/>
BRICK (19 in)	<input type="checkbox"/>	SLT (61-72 in)	<input type="checkbox"/>
CORAL (18-24 in)	<input type="checkbox"/>	SLT (73-84 in)	<input type="checkbox"/>
CORAL (25-36 in)	<input type="checkbox"/>	SLT (85-96 in)	<input type="checkbox"/>
GRAVEL (24-36 in)	<input type="checkbox"/>	SLT (97-108 in)	<input type="checkbox"/>
GRAVEL (37-48 in)	<input type="checkbox"/>	SLT (109-120 in)	<input type="checkbox"/>
GRAVEL (49-60 in)	<input type="checkbox"/>	SLT (121-132 in)	<input type="checkbox"/>
GRAVEL (61-72 in)	<input type="checkbox"/>	SLT (133-144 in)	<input type="checkbox"/>
GRAVEL (73-84 in)	<input type="checkbox"/>	SLT (145-156 in)	<input type="checkbox"/>
GRAVEL (85-96 in)	<input type="checkbox"/>	SLT (157-168 in)	<input type="checkbox"/>
GRAVEL (97-108 in)	<input type="checkbox"/>	SLT (169-180 in)	<input type="checkbox"/>
GRAVEL (109-120 in)	<input type="checkbox"/>	SLT (181-192 in)	<input type="checkbox"/>
GRAVEL (121-132 in)	<input type="checkbox"/>	SLT (193-204 in)	<input type="checkbox"/>
GRAVEL (125-136 in)	<input type="checkbox"/>	SLT (205-216 in)	<input type="checkbox"/>
GRAVEL (137-148 in)	<input type="checkbox"/>	SLT (217-228 in)	<input type="checkbox"/>
GRAVEL (149-160 in)	<input type="checkbox"/>	SLT (229-240 in)	<input type="checkbox"/>
GRAVEL (161-172 in)	<input type="checkbox"/>	SLT (241-252 in)	<input type="checkbox"/>
GRAVEL (173-184 in)	<input type="checkbox"/>	SLT (253-264 in)	<input type="checkbox"/>
GRAVEL (185-196 in)	<input type="checkbox"/>	SLT (265-276 in)	<input type="checkbox"/>
GRAVEL (197-208 in)	<input type="checkbox"/>	SLT (277-288 in)	<input type="checkbox"/>
GRAVEL (209-220 in)	<input type="checkbox"/>	SLT (289-300 in)	<input type="checkbox"/>
GRAVEL (221-232 in)	<input type="checkbox"/>	SLT (301-312 in)	<input type="checkbox"/>
GRAVEL (233-244 in)	<input type="checkbox"/>	SLT (313-324 in)	<input type="checkbox"/>
GRAVEL (245-256 in)	<input type="checkbox"/>	SLT (325-336 in)	<input type="checkbox"/>
GRAVEL (257-268 in)	<input type="checkbox"/>	SLT (337-348 in)	<input type="checkbox"/>
GRAVEL (269-280 in)	<input type="checkbox"/>	SLT (349-360 in)	<input type="checkbox"/>
GRAVEL (281-292 in)	<input type="checkbox"/>	SLT (361-372 in)	<input type="checkbox"/>
GRAVEL (293-304 in)	<input type="checkbox"/>	SLT (373-384 in)	<input type="checkbox"/>
GRAVEL (305-316 in)	<input type="checkbox"/>	SLT (385-396 in)	<input type="checkbox"/>
GRAVEL (317-328 in)	<input type="checkbox"/>	SLT (397-408 in)	<input type="checkbox"/>
GRAVEL (329-340 in)	<input type="checkbox"/>	SLT (409-420 in)	<input type="checkbox"/>
GRAVEL (341-352 in)	<input type="checkbox"/>	SLT (421-432 in)	<input type="checkbox"/>
GRAVEL (353-364 in)	<input type="checkbox"/>	SLT (433-444 in)	<input type="checkbox"/>
GRAVEL (365-376 in)	<input type="checkbox"/>	SLT (445-456 in)	<input type="checkbox"/>
GRAVEL (377-388 in)	<input type="checkbox"/>	SLT (457-468 in)	<input type="checkbox"/>
GRAVEL (389-400 in)	<input type="checkbox"/>	SLT (469-480 in)	<input type="checkbox"/>
GRAVEL (401-412 in)	<input type="checkbox"/>	SLT (481-492 in)	<input type="checkbox"/>
GRAVEL (413-424 in)	<input type="checkbox"/>	SLT (493-504 in)	<input type="checkbox"/>
GRAVEL (425-436 in)	<input type="checkbox"/>	SLT (505-516 in)	<input type="checkbox"/>
GRAVEL (437-448 in)	<input type="checkbox"/>	SLT (517-528 in)	<input type="checkbox"/>
GRAVEL (449-460 in)	<input type="checkbox"/>	SLT (529-540 in)	<input type="checkbox"/>
GRAVEL (461-472 in)	<input type="checkbox"/>	SLT (541-552 in)	<input type="checkbox"/>
GRAVEL (473-484 in)	<input type="checkbox"/>	SLT (553-564 in)	<input type="checkbox"/>
GRAVEL (485-496 in)	<input type="checkbox"/>	SLT (565-576 in)	<input type="checkbox"/>
GRAVEL (497-508 in)	<input type="checkbox"/>	SLT (577-588 in)	<input type="checkbox"/>
GRAVEL (509-520 in)	<input type="checkbox"/>	SLT (589-600 in)	<input type="checkbox"/>
GRAVEL (521-532 in)	<input type="checkbox"/>	SLT (601-612 in)	<input type="checkbox"/>
GRAVEL (533-544 in)	<input type="checkbox"/>	SLT (613-624 in)	<input type="checkbox"/>
GRAVEL (545-556 in)	<input type="checkbox"/>	SLT (625-636 in)	<input type="checkbox"/>
GRAVEL (557-568 in)	<input type="checkbox"/>	SLT (637-648 in)	<input type="checkbox"/>
GRAVEL (569-580 in)	<input type="checkbox"/>	SLT (649-660 in)	<input type="checkbox"/>
GRAVEL (581-592 in)	<input type="checkbox"/>	SLT (661-672 in)	<input type="checkbox"/>
GRAVEL (593-604 in)	<input type="checkbox"/>	SLT (673-684 in)	<input type="checkbox"/>
GRAVEL (605-616 in)	<input type="checkbox"/>	SLT (685-696 in)	<input type="checkbox"/>
GRAVEL (617-628 in)	<input type="checkbox"/>	SLT (697-708 in)	<input type="checkbox"/>
GRAVEL (629-640 in)	<input type="checkbox"/>	SLT (709-720 in)	<input type="checkbox"/>
GRAVEL (641-652 in)	<input type="checkbox"/>	SLT (721-732 in)	<input type="checkbox"/>
GRAVEL (653-664 in)	<input type="checkbox"/>	SLT (733-744 in)	<input type="checkbox"/>
GRAVEL (665-676 in)	<input type="checkbox"/>	SLT (745-756 in)	<input type="checkbox"/>
GRAVEL (677-688 in)	<input type="checkbox"/>	SLT (757-768 in)	<input type="checkbox"/>
GRAVEL (689-700 in)	<input type="checkbox"/>	SLT (769-780 in)	<input type="checkbox"/>
GRAVEL (701-712 in)	<input type="checkbox"/>	SLT (781-792 in)	<input type="checkbox"/>
GRAVEL (713-724 in)	<input type="checkbox"/>	SLT (793-804 in)	<input type="checkbox"/>
GRAVEL (725-736 in)	<input type="checkbox"/>	SLT (805-816 in)	<input type="checkbox"/>
GRAVEL (737-748 in)	<input type="checkbox"/>	SLT (817-828 in)	<input type="checkbox"/>
GRAVEL (749-760 in)	<input type="checkbox"/>	SLT (829-840 in)	<input type="checkbox"/>
GRAVEL (761-772 in)	<input type="checkbox"/>	SLT (841-852 in)	<input type="checkbox"/>
GRAVEL (773-784 in)	<input type="checkbox"/>	SLT (853-864 in)	<input type="checkbox"/>
GRAVEL (785-796 in)	<input type="checkbox"/>	SLT (865-876 in)	<input type="checkbox"/>
GRAVEL (797-808 in)	<input type="checkbox"/>	SLT (877-888 in)	<input type="checkbox"/>
GRAVEL (809-820 in)	<input type="checkbox"/>	SLT (889-900 in)	<input type="checkbox"/>
GRAVEL (821-832 in)	<input type="checkbox"/>	SLT (901-912 in)	<input type="checkbox"/>
GRAVEL (833-844 in)	<input type="checkbox"/>	SLT (913-924 in)	<input type="checkbox"/>
GRAVEL (845-856 in)	<input type="checkbox"/>	SLT (925-936 in)	<input type="checkbox"/>
GRAVEL (857-868 in)	<input type="checkbox"/>	SLT (937-948 in)	<input type="checkbox"/>
GRAVEL (869-880 in)	<input type="checkbox"/>	SLT (949-960 in)	<input type="checkbox"/>
GRAVEL (881-892 in)	<input type="checkbox"/>	SLT (961-972 in)	<input type="checkbox"/>
GRAVEL (893-904 in)	<input type="checkbox"/>	SLT (973-984 in)	<input type="checkbox"/>
GRAVEL (905-916 in)	<input type="checkbox"/>	SLT (985-996 in)	<input type="checkbox"/>
GRAVEL (917-928 in)	<input type="checkbox"/>	SLT (997-1008 in)	<input type="checkbox"/>
GRAVEL (929-940 in)	<input type="checkbox"/>	SLT (1009-1020 in)	<input type="checkbox"/>
GRAVEL (941-952 in)	<input type="checkbox"/>	SLT (1021-1032 in)	<input type="checkbox"/>
GRAVEL (953-964 in)	<input type="checkbox"/>	SLT (1033-1044 in)	<input type="checkbox"/>
GRAVEL (965-976 in)	<input type="checkbox"/>	SLT (1045-1056 in)	<input type="checkbox"/>
GRAVEL (977-988 in)	<input type="checkbox"/>	SLT (1057-1068 in)	<input type="checkbox"/>
GRAVEL (989-1000 in)	<input type="checkbox"/>	SLT (1069-1080 in)	<input type="checkbox"/>
GRAVEL (1001-1012 in)	<input type="checkbox"/>	SLT (1081-1092 in)	<input type="checkbox"/>
GRAVEL (1013-1024 in)	<input type="checkbox"/>	SLT (1093-1104 in)	<input type="checkbox"/>
GRAVEL (1025-1036 in)	<input type="checkbox"/>	SLT (1105-1116 in)	<input type="checkbox"/>
GRAVEL (1037-1048 in)	<input type="checkbox"/>	SLT (1117-1128 in)	<input type="checkbox"/>
GRAVEL (1049-1060 in)	<input type="checkbox"/>	SLT (1129-1140 in)	<input type="checkbox"/>
GRAVEL (1061-1072 in)	<input type="checkbox"/>	SLT (1141-1152 in)	<input type="checkbox"/>
GRAVEL (1073-1084 in)	<input type="checkbox"/>	SLT (1153-1164 in)	<input type="checkbox"/>
GRAVEL (1085-1096 in)	<input type="checkbox"/>	SLT (1165-1176 in)	<input type="checkbox"/>
GRAVEL (1097-1108 in)	<input type="checkbox"/>	SLT (1177-1188 in)	<input type="checkbox"/>
GRAVEL (1109-1120 in)	<input type="checkbox"/>	SLT (1189-1200 in)	<input type="checkbox"/>
GRAVEL (1121-1132 in)	<input type="checkbox"/>	SLT (1201-1212 in)	<input type="checkbox"/>
GRAVEL (1133-1144 in)	<input type="checkbox"/>	SLT (1213-1224 in)	<input type="checkbox"/>
GRAVEL (1145-1156 in)	<input type="checkbox"/>	SLT (1225-1236 in)	<input type="checkbox"/>
GRAVEL (1157-1168 in)	<input type="checkbox"/>	SLT (1237-1248 in)	<input type="checkbox"/>
GRAVEL (1169-1180 in)	<input type="checkbox"/>	SLT (1249-1260 in)	<input type="checkbox"/>
GRAVEL (1181-1192 in)	<input type="checkbox"/>	SLT (1261-1272 in)	<input type="checkbox"/>
GRAVEL (1193-1204 in)	<input type="checkbox"/>	SLT (1273-1284 in)	<input type="checkbox"/>
GRAVEL (1205-1216 in)	<input type="checkbox"/>	SLT (1285-1296 in)	<input type="checkbox"/>
GRAVEL (1217-1228 in)	<input type="checkbox"/>	SLT (1297-1308 in)	<input type="checkbox"/>
GRAVEL (1229-1240 in)	<input type="checkbox"/>	SLT (1309-1320 in)	<input type="checkbox"/>
GRAVEL (1241-1252 in)	<input type="checkbox"/>	SLT (1321-1332 in)	<input type="checkbox"/>
GRAVEL (1253-1264 in)	<input type="checkbox"/>	SLT (1333-1344 in)	<input type="checkbox"/>
GRAVEL (1265-1276 in)	<input type="checkbox"/>	SLT (1345-1356 in)	<input type="checkbox"/>
GRAVEL (1277-1288 in)	<input type="checkbox"/>	SLT (1357-1368 in)	<input type="checkbox"/>
GRAVEL (1289-1300 in)	<input type="checkbox"/>	SLT (1369-1380 in)	<input type="checkbox"/>
GRAVEL (1301-1312 in)	<input type="checkbox"/>	SLT (1381-1392 in)	<input type="checkbox"/>
GRAVEL (1313-1324 in)	<input type="checkbox"/>	SLT (1393-1404 in)	<input type="checkbox"/>
GRAVEL (1325-1336 in)	<input type="checkbox"/>	SLT (1405-1416 in)	<input type="checkbox"/>
GRAVEL (1337-1348 in)	<input type="checkbox"/>	SLT (1417-1428 in)	<input type="checkbox"/>
GRAVEL (1349-1360 in)	<input type="checkbox"/>	SLT (1429-1440 in)	<input type="checkbox"/>
GRAVEL (1361-1372 in)	<input type="checkbox"/>	SLT (1441-1452 in)	<input type="checkbox"/>
GRAVEL (1373-1384 in)	<input type="checkbox"/>	SLT (1453-1464 in)	<input type="checkbox"/>
GRAVEL (1385-1396 in)	<input type="checkbox"/>	SLT (1465-1476 in)	<input type="checkbox"/>
GRAVEL (1397-1408 in)	<input type="checkbox"/>	SLT (1477-1488 in)	<input type="checkbox"/>
GRAVEL (1409-1420 in)	<input type="checkbox"/>	SLT (1489-1500 in)	<input type="checkbox"/>
GRAVEL (1421-1432 in)	<input type="checkbox"/>	SLT (1501-1512 in)	<input type="checkbox"/>
GRAVEL (1433-1444 in)	<input type="checkbox"/>	SLT (1513-1524 in)	<input type="checkbox"/>
GRAVEL (1445-1456 in)	<input type="checkbox"/>	SLT (1525-1536 in)	<input type="checkbox"/>
GRAVEL (1457-1468 in)	<input type="checkbox"/>	SLT (1537-1548 in)	<input type="checkbox"/>
GRAVEL (1469-1480 in)	<input type="checkbox"/>	SLT (1549-1560 in)	<input type="checkbox"/>
GRAVEL (1481-1492 in)	<input type="checkbox"/>	SLT (1561-1572 in)	<input type="checkbox"/>
GRAVEL (1493-1504 in)	<input type="checkbox"/>	SLT (1573-1584 in)	<input type="checkbox"/>
GRAVEL (1505-1516 in)	<input type="checkbox"/>	SLT (1585-1596 in)	<input type="checkbox"/>
GRAVEL (1517-1528 in)	<input type="checkbox"/>	SLT (1597-1608 in)	<input type="checkbox"/>
GRAVEL (1529-1540 in)	<input type="checkbox"/>	SLT (1609-1620 in)	<input type="checkbox"/>
GRAVEL (1541-1552 in)	<input type="checkbox"/>	SLT (1621-1632 in)	<input type="checkbox"/>
GRAVEL (1553-1564 in)	<input type="checkbox"/>	SLT (1633-1644 in)	<input type="checkbox"/>
GRAVEL (1565-1576 in)	<input type="checkbox"/>	SLT (1645-1656 in)	<input type="checkbox"/>
GRAVEL (1577-1588 in)	<input type="checkbox"/>	SLT (1657-1668 in)	<input type="checkbox"/>
GRAVEL (1589-1600 in)	<input type="checkbox"/>	SLT (1669-1680 in)	<input type="checkbox"/>
GRAVEL (1601-1612 in)	<input type="checkbox"/>	SLT (1681-1692 in)	<input type="checkbox"/>
GRAVEL (1613-1624 in)	<input type="checkbox"/>	SLT (1693-1704 in)	<input type="checkbox"/>
GRAVEL (1625-1636 in)	<input type="checkbox"/>	SLT (1705-1716 in)	<input type="checkbox"/>
GRAVEL (1637-1648 in)	<input type="checkbox"/>	SLT (1717-1728 in)	<input type="checkbox"/>
GRAVEL (1649-1660 in)	<input type="checkbox"/>	SLT (1729-1740 in)	<input type="checkbox"/>
GRAVEL (1661-1672 in)	<input type="checkbox"/>	SLT (1741-1752 in)	<input type="checkbox"/>
GRAVEL (1673-1684 in)	<input type="checkbox"/>	SLT (1753-1764 in)	<input type="checkbox"/>
GRAVEL (1685-1696 in)	<input type="checkbox"/>	SLT (1765-1776 in)	<input type="checkbox"/>
GRAVEL (1697-1708 in)	<input type="checkbox"/>	SLT (1777-1788 in)	<input type="checkbox"/>
GRAVEL (1709-1720 in)	<input type="checkbox"/>	SLT (1789-1800 in)	<input type="checkbox"/>
GRAVEL (1721-1732 in)	<input type="checkbox"/>	SLT (1801-1812 in)	<input type="checkbox"/>
GRAVEL (1733-1744 in)	<input type="checkbox"/>	SLT (1813-1824 in)	<input type="checkbox"/>
GRAVEL (1745-1756 in)	<input type="checkbox"/>	SLT (1825-1836 in)	<input type="checkbox"/>
GRAVEL (1757-1768 in)	<input type="checkbox"/>	SLT (1837-1848 in)	<input type="checkbox"/>
GRAVEL (1769-1780 in)	<input type="checkbox"/>	SLT (1849-1860 in)	<input type="checkbox"/>
GRAVEL (1781-1792 in)	<input type="checkbox"/>	SLT (1861-1872 in)	<input type="checkbox"/>
GRAVEL (1793-1804 in)	<input type="checkbox"/>	SLT (1873-1884 in)	<input type="checkbox"/>
GRAVEL (1805-1816 in)	<input type="checkbox"/>	SLT (1885-1896 in)	<input type="checkbox"/>
GRAVEL (1817-1828 in)	<input type="checkbox"/>	SLT (1897-1908 in)	<input type="checkbox"/>
GRAVEL (1829-1840 in)	<input type="checkbox"/>	SLT (1909-1920 in)	<input type="checkbox"/>
GRAVEL (1841-1852 in)	<input type="checkbox"/>	SLT (1921-1932 in)	<input type="checkbox"/>
GRAVEL (1853-1864 in)	<input type="checkbox"/>	SLT (1933-1944 in)	<input type="checkbox"/>
GRAVEL (1865-1876 in)	<input type="checkbox"/>	SLT (1945-1956 in)	<input type="checkbox"/>
GRAVEL (1877-1888 in)	<input type="checkbox"/>	SLT (1957-1968 in)	<input type="checkbox"/>
GRAVEL (1889-1900 in)	<input type="checkbox"/>	SLT (1969-1980 in)	<input type="checkbox"/>
GRAVEL (1901-1912 in)	<input type="checkbox"/>	SLT (1981-1992 in)	<input type="checkbox"/>
GRAVEL (1913-1924 in)	<input type="checkbox"/>	SLT (1993-2004 in)	<input type="checkbox"/>
GRAVEL (1925-1936 in)	<input type="checkbox"/>	SLT (2005-2016 in)	<input type="checkbox"/>
GRAVEL (1937-1948 in)	<input type="checkbox"/>	SLT (2017-2028 in)	<input type="checkbox"/>
GRAVEL (1949-1960 in)	<input type="checkbox"/>	SLT (2029-2040 in)	<input type="checkbox"/>
GRAVEL (1961-1972 in)	<input type="checkbox"/>	SLT (2041-2052 in)	<input type="checkbox"/>
GRAVEL (1973-1984 in)	<input type="checkbox"/>	SLT (2053-2064 in)	<input type="checkbox"/>
GRAVEL (1985-1996 in)	<input type="checkbox"/>	SLT (2065-2076 in)	<input type="checkbox"/>
GRAVEL (1997-2008 in)	<input type="checkbox"/>	SLT (2077-2088 in)	<input type="checkbox"/>
GRAVEL (2009-2020 in)	<input type="checkbox"/>	SLT (2089-2100 in)	<input type="checkbox"/>
GRAVEL (2021-2032 in)	<input type="checkbox"/>	SLT (2101-2112 in)	<input type="checkbox"/>
GRAVEL (2033-2044 in)	<input type="checkbox"/>	SLT (2113-2124 in)	<input type="checkbox"/>
GRAVEL (2045-2056 in)	<input type="checkbox"/>	SLT (2125-2136 in)	<input type="checkbox"/>
GRAVEL (2057-2068 in)	<input type="checkbox"/>	SLT (2137-2148 in)	<input type="checkbox"/>
GRAVEL (2069-2080 in)	<input type="checkbox"/>	SLT (2149-2160 in)	<input type="checkbox"/>
GRAVEL (2081-2092 in)	<input type="checkbox"/>	SLT (2161-2172 in)	<input type="checkbox"/>
GRAVEL (2093-2104 in)	<input type="checkbox"/>	SLT (2173-2184 in)	<input type="checkbox"/>
GRAVEL (2105-2116 in			

CLASS I

Ohio EPA Primary Headwater Habitat Evaluation Form

HNEI Score (sum of metrics 1, 2, 3): 14

SITE NAME/LOCATION: South Field Energy Information Center

SITE NUMBER: S-18 RIVER BASIN: Upper Ohio DRAINAGE AREA (mi²):

LENGTH OF STREAM REACH (ft): 54 LAT: 40.648572 LONG: -80.719178 RIVER CODE: 0000101 RIVER MILE:

DATE: 4/20/2015 SCORER: B. Slapin COMMENTS:

NOTE: Complete all items on this form - Refer to "Field Evaluation Manual for Ohio's PNHV Streams" for instructions

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

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY TWO predominant substrate TYPE boxes (Max of 40). Add total number of fragments of substrate types found (Max of 5). Final metric score is sum of boxes A & B.)	
TYPE	PERCENT
ROCK SLABS (16 pts)	<input checked="" type="checkbox"/>
BOULDER (2-36 mm) (16 pts)	<input checked="" type="checkbox"/>
BEDROCK (16 pts)	<input checked="" type="checkbox"/>
GRAVEL (6-25 mm) (12 pts)	<input checked="" type="checkbox"/>
SAND (< 2 mm) (8 pts)	<input checked="" type="checkbox"/>
ARTIFICIAL (8 pts)	<input type="checkbox"/>
Total of Percentages of <u>5</u>	
Box Slab, Boulder, Cobble, Bedrock <u>0</u>	
SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: (A) <u>16</u> (B) <u>13</u>	
TOTAL NUMBER OF SUBSTRATE TYPES: <u>3</u>	
1. Maximum Pool Depth (measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of visitation. Avoid sample pools from road subsides or storm water pools). (Check ONLY one box): <input type="checkbox"/> > 4.0 m (13 ft) (20 pts) <input type="checkbox"/> > 2.5 - 4.0 m (8 ft - 13 ft) (15 pts) <input type="checkbox"/> > 2.5 - 3.0 m (8 ft - 10 ft) (10 pts) <input checked="" type="checkbox"/> > 1.0 - 2.5 m (3 ft - 8 ft) (5 pts) <input type="checkbox"/> NO WATER OR MINOR CHANNEL (0 pts)	
COMMENTS: <u> </u>	
2. Bank Full Width (measured as the average of 3-4 measurements). (Check ONLY one box): <input type="checkbox"/> > 10 m (33 ft) (20 pts) <input type="checkbox"/> > 5.0 m (16 ft) (15 pts) <input checked="" type="checkbox"/> > 1.5 m (5 ft) (10 pts) <input type="checkbox"/> > 1.5 m (5 ft) (10 pts) <input type="checkbox"/> NO WATER OR MINOR CHANNEL (0 pts)	
COMMENTS: <u> </u>	
3. Bank Full Width (measured as the average of 3-4 measurements). (Check ONLY one box): <input type="checkbox"/> > 10 m (33 ft) (20 pts) <input type="checkbox"/> > 5.0 m (16 ft) (15 pts) <input checked="" type="checkbox"/> > 1.5 m (5 ft) (10 pts) <input type="checkbox"/> > 1.5 m (5 ft) (10 pts) <input type="checkbox"/> NO WATER OR MINOR CHANNEL (0 pts)	
COMMENTS: <u> </u>	

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY	SHORELINE QUALITY	SHORELINE WIDTH	SHORELINE VEGETATION	SHORELINE USE
<input checked="" type="checkbox"/> Good (Per Bank)	<input checked="" type="checkbox"/> Good (Per Bank)	<input checked="" type="checkbox"/> Good (Per Bank)	<input checked="" type="checkbox"/> Good (Per Bank)	<input checked="" type="checkbox"/> Good (Per Bank)
<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate	<input type="checkbox"/> Moderate
<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor
<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None	<input type="checkbox"/> None

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
☐ Steady Flowing
☒ Fluctuating Flow
☐ None

SHORELINE (Number of bands per 51 m (200 ft) of channel). (Check ONLY one box):
☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☒ > 3

COMMENTS:

STREAM CHANNEL ESTIMATE: ☐ Fair to Good ☐ Fair to Moderate ☒ Moderate to Good ☐ Severe to Poor

ADDITIONAL STREAM INFORMATION (This information must also be completed):

ONE/PERFORMED? ☐ Yes ☒ No ONE Score: (If Yes, Attach Completed ONE Form)

DOWNSTREAM DESIGNATED USE(S):

DOWNSTREAM NAME: Distance from Evaluation Stream:

DOWNSTREAM NAME: Distance from Evaluation Stream:

MAP/PHOTO: ATTACH COMPOSITE MAPS INCLUDING THE ENTIRE EVALUATED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Wet Port NRCS Soil Map Page: NRCS Soil Map Sheet Order:

County: Columbiana Township: Madison Twp

MISCELLANEOUS:

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

Photograph Information:

Elevated Turbidity? (Y/N): N Capacity (% open): 5

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

Field Measures: Temp (C/D): Dissolved Oxygen (mg/L): pH (S.U.): Conductivity (µmhos/cm):

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

Additional comments/description of pollution impacts:

BOTIC EVALUATION:

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

Fish Observed? (Y/N): Voucher? (Y/N): Voucher? (Y/N):

Frogs or Toads Observed? (Y/N): Voucher? (Y/N): Voucher? (Y/N):

Comments Regarding Biology:

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

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

OHLEPA Primary Headwater Habitat Evaluation Form

Class II

HHEI Score (sum of metrics 1, 2, 3): **37**

STREAM LOCATION: Subsidiary Headwater Intermittent Perennial
 SITE NUMBER: 5-17 RIVER BASIN: Ohio DRAINAGE AREA (sq mi): 51
 LENGTH OF STREAM REACH (m): 200 LAT: 40° 44' 30" N LONG: 80° 7' 16" W RIVER CODE: 1
 DATE: 4/20/15 SCORER: L. Saville COMMENTS: NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for instructions
 STREAM CHANNEL: Channel Scour Bank Bar Point Shoal Gravel Silt Clay Rock Vegetation Other
 MODIFICATIONS: None

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

TYPE	PERCENT	TYPE	PERCENT
BLK SLABS (18 pts)	0	COARSE (63-250 mm) (18 pts)	10
BOULDER (250 mm) (18 pts)	0	COBBLE (25-63 mm) (18 pts)	0
BRICKS (18 pts)	0	GRAVEL (2-25 mm) (18 pts)	0
CLAY (18 pts)	0	ROCK (18 pts)	0
COBBLE (63-250 mm) (18 pts)	0	SAND (< 2 mm) (18 pts)	0
GRAVEL (2-25 mm) (18 pts)	0	ARTIFICIAL (18 pts)	0

2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 81 meter (269 ft) evaluation reach at the time of evaluation. Avoid plunge pools from local culverts or storm water flows). (Check ONLY one box):

POOL DEPTH	SCORE
> 30 centimeters (20 pts)	0
> 22.5 - 30 cm (20 pts)	0
> 10 - 22.5 cm (20 pts)	0
> 5 - 10 cm (15 pts)	0
> 2.5 - 5 cm (15 pts)	0
> 1.0 - 2.5 cm (15 pts)	0
> 0.5 - 1.0 cm (15 pts)	0
> 0.25 - 0.5 cm (15 pts)	0
> 0.1 - 0.25 cm (15 pts)	0
> 0.05 - 0.1 cm (15 pts)	0
> 0.025 - 0.05 cm (15 pts)	0
> 0.01 - 0.025 cm (15 pts)	0
> 0.005 - 0.01 cm (15 pts)	0
> 0.0025 - 0.005 cm (15 pts)	0
> 0.001 - 0.0025 cm (15 pts)	0
> 0.0005 - 0.001 cm (15 pts)	0
> 0.00025 - 0.0005 cm (15 pts)	0
> 0.0001 - 0.00025 cm (15 pts)	0
> 0.00005 - 0.0001 cm (15 pts)	0
> 0.000025 - 0.00005 cm (15 pts)	0
> 0.00001 - 0.000025 cm (15 pts)	0
> 0.000005 - 0.00001 cm (15 pts)	0
> 0.0000025 - 0.000005 cm (15 pts)	0
> 0.000001 - 0.0000025 cm (15 pts)	0
> 0.0000005 - 0.000001 cm (15 pts)	0
> 0.00000025 - 0.0000005 cm (15 pts)	0
> 0.0000001 - 0.00000025 cm (15 pts)	0
> 0.00000005 - 0.0000001 cm (15 pts)	0
> 0.000000025 - 0.00000005 cm (15 pts)	0
> 0.00000001 - 0.000000025 cm (15 pts)	0
> 0.000000005 - 0.00000001 cm (15 pts)	0
> 0.0000000025 - 0.000000005 cm (15 pts)	0
> 0.000000001 - 0.0000000025 cm (15 pts)	0
> 0.0000000005 - 0.000000001 cm (15 pts)	0
> 0.00000000025 - 0.0000000005 cm (15 pts)	0
> 0.0000000001 - 0.00000000025 cm (15 pts)	0
> 0.00000000005 - 0.0000000001 cm (15 pts)	0
> 0.000000000025 - 0.00000000005 cm (15 pts)	0
> 0.00000000001 - 0.000000000025 cm (15 pts)	0
> 0.000000000005 - 0.00000000001 cm (15 pts)	0
> 0.0000000000025 - 0.000000000005 cm (15 pts)	0
> 0.000000000001 - 0.0000000000025 cm (15 pts)	0
> 0.0000000000005 - 0.000000000001 cm (15 pts)	0
> 0.00000000000025 - 0.0000000000005 cm (15 pts)	0
> 0.0000000000001 - 0.00000000000025 cm (15 pts)	0
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> 0.000000000000025 - 0.00000000000005 cm (15 pts)	0
> 0.00000000000001 - 0.000000000000025 cm (15 pts)	0
> 0.000000000000005 - 0.00000000000001 cm (15 pts)	0
> 0.0000000000000025 - 0.000000000000005 cm (15 pts)	0
> 0.000000000000001 - 0.0000000000000025 cm (15 pts)	0
> 0.0000000000000005 - 0.000000000000001 cm (15 pts)	0
> 0.00000000000000025 - 0.0000000000000005 cm (15 pts)	0
> 0.0000000000000001 - 0.00000000000000025 cm (15 pts)	0
> 0.00000000000000005 - 0.0000000000000001 cm (15 pts)	0
> 0.000000000000000025 - 0.00000000000000005 cm (15 pts)	0
> 0.00000000000000001 - 0.000000000000000025 cm (15 pts)	0
> 0.000000000000000005 - 0.00000000000000001 cm (15 pts)	0
> 0.0000000000000000025 - 0.000000000000000005 cm (15 pts)	0
> 0.000000000000000001 - 0.0000000000000000025 cm (15 pts)	0
> 0.0000000000000000005 - 0.000000000000000001 cm (15 pts)	0
> 0.00000000000000000025 - 0.0000000000000000005 cm (15 pts)	0
> 0.0000000000000000001 - 0.00000000000000000025 cm (15 pts)	0
> 0.00000000000000000005 - 0.0000000000000000001 cm (15 pts)	0
> 0.000000000000000000025 - 0.00000000000000000005 cm (15 pts)	0
> 0.00000000000000000001 - 0.000000000000000000025 cm (15 pts)	0
> 0.000000000000000000005 - 0.00000000000000000001 cm (15 pts)	0
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> 0.000000000000000000001 - 0.0000000000000000000025 cm (15 pts)	0
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> 0.00000000000000000000025 - 0.0000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000001 - 0.00000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000005 - 0.0000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000025 - 0.00000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000001 - 0.000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000005 - 0.00000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000025 - 0.000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000001 - 0.0000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000005 - 0.000000000000000000000001 cm (15 pts)	0
> 0.00000000000000000000000025 - 0.0000000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000000001 - 0.00000000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000000005 - 0.0000000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000000025 - 0.00000000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000000001 - 0.000000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000000005 - 0.00000000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000000025 - 0.000000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000000001 - 0.0000000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000000005 - 0.000000000000000000000000001 cm (15 pts)	0
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> 0.0000000000000000000000000001 - 0.00000000000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000000000005 - 0.0000000000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000000000025 - 0.00000000000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000000000001 - 0.000000000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000000000005 - 0.00000000000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000000000025 - 0.000000000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000000000001 - 0.0000000000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000000000005 - 0.000000000000000000000000000001 cm (15 pts)	0
> 0.00000000000000000000000000000025 - 0.0000000000000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000000000000001 - 0.00000000000000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000000000000005 - 0.0000000000000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000000000000025 - 0.00000000000000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000000000000001 - 0.000000000000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000000000000005 - 0.00000000000000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000000000000025 - 0.000000000000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000000000000001 - 0.0000000000000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000000000000005 - 0.000000000000000000000000000000001 cm (15 pts)	0
> 0.00000000000000000000000000000000025 - 0.0000000000000000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000000000000000001 - 0.00000000000000000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000000000000000005 - 0.0000000000000000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000000000000000025 - 0.00000000000000000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000000000000000001 - 0.000000000000000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000000000000000005 - 0.00000000000000000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000000000000000025 - 0.000000000000000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000000000000000001 - 0.0000000000000000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000000000000000005 - 0.000000000000000000000000000000000001 cm (15 pts)	0
> 0.00000000000000000000000000000000000025 - 0.0000000000000000000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000000000000000000001 - 0.00000000000000000000000000000000000025 cm (15 pts)	0
> 0.00000000000000000000000000000000000005 - 0.0000000000000000000000000000000000001 cm (15 pts)	0
> 0.000000000000000000000000000000000000025 - 0.00000000000000000000000000000000000005 cm (15 pts)	0
> 0.00000000000000000000000000000000000001 - 0.000000000000000000000000000000000000025 cm (15 pts)	0
> 0.000000000000000000000000000000000000005 - 0.00000000000000000000000000000000000001 cm (15 pts)	0
> 0.0000000000000000000000000000000000000025 - 0.000000000000000000000000000000000000005 cm (15 pts)	0
> 0.000000000000000000000000000000000000001 - 0.0000000000000000000000000000000000000025 cm (15 pts)	0
> 0.0000000000000000000000000000000000000005 - 0.000000000000000000000000000000000000001 cm (15 pts)	0
> 0.00000000000000000000000000000000000000025 - 0.0000000000000000000000000000000000000005 cm (15 pts)	0
> 0.0000000000000000000000000000000000000001 - 0.00000000000000000000000000000000000000025 cm (15 pts)	0
> 0.005 - 0.0000000000000000000000000000000000000001 cm (15 pts)	0
> 0.0025 - 0.005 cm (15 pts)	0
> 0.001 - 0.0025 cm (15 pts)	0
> 0.0005 - 0.001 cm (15 pts)	0
> 0.00025 - 0.0005 cm (15 pts)	0
> 0.0001 - 0.00025 cm (15 pts)	0
> 0.005 - 0.0001 cm (15 pts)	0
> 0.0025 - 0.005 cm (15 pts)	0
> 0.001 - 0.0025 cm (15 pts)	0
> 0.0005 - 0.001 cm (15 pts)	0
> 0.00025 - 0.0005 cm (15 pts)	0
> 0.0001 - 0.00025 cm (15 pts)	0
> 0.005 - 0.0001 cm (15 pts)	0
> 0.0025 - 0.005 cm (15 pts)	0
> 0.001 - 0.0025 cm (15 pts)	0
> 0.0005 - 0.001 cm (15 pts)	0
> 0.00025 - 0.0005 cm (15 pts)	

Class II

SITE NAME LOCATION SURFID. H212 STUDY ID# H2120000017
SITE NUMBER 5-18 RIVER BASIN 0410 DRAINAGE AREA (MP²)
LENGTH OF STREAM REACH (ft) 200 LAT. 4D.043 LONG 8D.711g RIVER MILE
DATE 4/30/15 SCORER L.Saylitz COMMENTS
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWHV Streams" for instructions
STREAM CHANNEL ☒ NATURAL ☒ MAN-MADE ☒ RECONSTRUCTED ☐ ROCKY BANKS ☐ BEACH OR NO BEACH
USING LOCATIONS:

HHEI Metrics Points

Substrate Max = 40	Max = 40	A + B	Pond Depth Max = 30	Bankfull Width Max = 30
11			15	15

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY TWO predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.

PERCENT	TYPE
10	ELU LEAF LUMP
10	LEA JACKWOODY DEBRIS (P PAD)
10	PINE COTEDRUS (P PAD)
10	CUMBERBARK (P PAD)
10	MUCK (P PAD)
10	ARTIFICIAL (P PAD)

(A) TOTAL NUMBER OF SUBSTRATE TYPES: **[5]**

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY TWO predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.

PERCENT	TYPE
10	BULK SLABS (16 PAD)
10	BOULDER (> 150 mm) (16 PAD)
10	BEPROCK (16 PAD)
10	COBBLE (< 50 mm) (12 PAD)
10	GRAVEL (< 24 mm) (8 PAD)
10	SAND (< 12 mm) (8 PAD)

Total Percentages of:
 Bar Blaine, Boulder, Cobble, Bankrock
[6]

(A) TOTAL NUMBER OF SUBSTRATE TYPES: **[6]**

SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES:

- Maximum Pond Depth (Measure the maximum pond depth within the 61 meter (200 ft) evaluation reach at the time of equitation. Avoid plunge ponds from road culverts or storm water flows.) (Check ONLY one box:
 > 4.0 m - 10 cm (16 PAD)
 > 22.5 - 30 cm (20 PAD)
 > 10 - 22.5 cm (20 PAD)
☒ NO WATER OR MOIST CHANNEL (0 PAD)
- Maximum Pond Depth (measure the maximum pond depth within the 61 meter (200 ft) evaluation reach at the time of equitation. Avoid plunge ponds from road culverts or storm water flows.) (Check ONLY one box:
 > 30 centimeters (20 PAD)
 > 22.5 - 30 cm (20 PAD)
 > 10 - 22.5 cm (20 PAD)

COMMENTS: MAXIMUM POOL DEPTH (centimeters): _____

BANK FULL WIDTH (Measured as the average of 3-4 measurements)
 > 4.0 meters (> 15) [20 PAD]
 > 3.0 m - 4.0 m (> 7 - 17) [20 PAD]
 > 1.5 m - 3.0 m (> 5' - 9'7") [20 PAD]

COMMENTS: AVERAGE BANKFULL WIDTH (meters): _____

RIPARIAN ZONE AND FLOODPLAIN QUALITY		THIS INFORMATION MUST ALSO BE COMPLETED ORIGINEE: River (L) and Right (R) as looking downstream	
SEPARATION WIDTH (Feet Bank)		ELOSPLAIN QUALITY	
L	R	(Most Predominant per Bank)	
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Irregular Forest, Shrub or Old Field	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>
COMMENTS			
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):		Main Channel, Isolated pools, no flow (Intermittent)	
<input checked="" type="checkbox"/> Stream Flowing		<input type="checkbox"/> Dry channel, no water (Ephemeral)	
Substrate flow with isolated pools (Intermittent)			
COMMENTS			
SINUOSITY (Number of bends per 1000 ft of channel)		(Check ONLY one box):	
None	<input checked="" type="checkbox"/> 1.5	2.5	<input type="checkbox"/>
0.5	<input type="checkbox"/>	3.0	<input checked="" type="checkbox"/>
STREAM GRADIENT ESTIMATE		Moderate to Severe	
Flat (0.4 ft/m or less)		<input type="checkbox"/>	
Firm (0.4 ft/m or less)		<input type="checkbox"/>	
Severe (0.4 ft/m or less)		<input type="checkbox"/>	

PARVA Form Page 4

ADDITIONAL STREAM INFORMATION (this information must also be completed)

QHE PERMITTED - ☐ Yes ☒ No QHE Score _____ (if Yes, Attach Completed QHE Form)

DOWNSTREAM DESIGNATED USE(S) _____

☐ WWH Name _____ Distance from Evaluated Stream _____

☐ CWA Name _____ Distance from Evaluated Stream _____

☐ BWA Name _____

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

USGS Quadrangle Name: West Point NRCS Soil Map Page: _____ NRCS Soil Map Stream Order: _____

County: Columbia Township/CDC: Madison Twp.

MISCELLANEOUS _____

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

Photograph Information: attached

Evaluated Turbidity? (Y/N): N Category (N open): 10

Wet samples collected for water chemistry? (Y/N): N (Note lab sample no. or ID, and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (3UL) _____ Conductivity (µmhos/cm) _____

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

Additional comments/description of pollution impacts: _____

BOTIC EVALUATION

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

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST BE COMPLETED):
Includes important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

The drawing shows a stream flowing from right to left, indicated by a 'FLOW' arrow at the bottom. The stream is labeled 'young woods' in two locations. Landmarks include 'W-13 PEM' and 'W-14 PEM'. A shaded area is labeled '(dens)'. A legend at the top right shows a wavy line for 'Riparian' and a dashed line for 'Rural'.

Ohio EPA Primary Headwater Habitat Evaluation Form CLASS II

SITE NAME/LOCATION: SPRINKLER TRAIL, 502234, 1055222, 6022207
 HHEI Score (sum of metrics 1, 2, 3): 31
 DATE: 4/30/15 SCORER: L. Sayle COMMENTS:
 LENGTH OF STREAM REACH (ft): 200 LAT: 40.0440 LONG: 80.7115 RIVER CODE: 21
 RIVER BASIN: OH10 DRAINAGE AREA (mi²): 21
 RIVER MILE: 21
 NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PMHW Streams" for Instructions
 STREAM CHANNEL: NO NATURAL CHANNEL, NO RECOVERY, NO RECOVERY, NO RECOVERY, NO RECOVERY, NO RECOVERY
 MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate types in TYPE boxes (MAX of 40). Add total number of significant substrate types found (MAX of 6). Final metric score is sum of bases A & B.
 TYPE: BLDGR-SLABS (10%) PERCENT 10 TYPE 10
POULDER (25%) PERCENT 25 TYPE 25
BECKROCK (10%) PERCENT 10 TYPE 10
COBBLE (65%) PERCENT 65 TYPE 65
GRAVEL (24%) PERCENT 24 TYPE 24
SAND (24%) PERCENT 24 TYPE 24
 Total Percentages of Substrate Types: 100
 TYPE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: (A) 10 (B) 65
 SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 10 65
 2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes). (Check ONLY one box):
> 50 centimeters (20 inches)
> 22.5 - 50 cm (9 - 20 inches)
> 10 - 22.5 cm (4 - 9 inches)
 COMMENTS:
 3. BANK FULL WIDTH (Measured as the average of 3-4 measurements). (Check ONLY one box):
> 4.0 meters (> 13 ft) (50 pts)
> 3.0 m - 4.0 m (9' 8" - 13') (25 pts)
> 1.5 m - 3.0 m (4' 8" - 9' 7") (10 pts)
 COMMENTS:
 4. AVERAGE BANKFULL WIDTH (meters): 9
 5. AVERAGE BANKFULL WIDTH (meters): 9
 6. AVERAGE BANKFULL WIDTH (meters): 9
 7. AVERAGE BANKFULL WIDTH (meters): 9
 8. AVERAGE BANKFULL WIDTH (meters): 9
 9. AVERAGE BANKFULL WIDTH (meters): 9
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 95. AVERAGE BANKFULL WIDTH (meters): 9
 96. AVERAGE BANKFULL WIDTH (meters): 9
 97. AVERAGE BANKFULL WIDTH (meters): 9
 98. AVERAGE BANKFULL WIDTH (meters): 9
 99. AVERAGE BANKFULL WIDTH (meters): 9
 100. AVERAGE BANKFULL WIDTH (meters): 9

1. FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
Stream Flowing
Subsurface flow with isolated pools (intermittent)
Comments:
 2. SLOPE (Number of bank per 61 m (200 ft) of channel) (Check ONLY one box):
None
0.5
1.0
1.5
2.0
2.5
3.0
3.5
 3. STREAM GRADIENT ESTIMATE (Check ONLY one box):
Flat (2.5 or less)
Flat to Moderate
Moderate to Steep (2.5 or more)
Severe (3.0 or more)
 4. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 5. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 6. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 7. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 8. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 9. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 10. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
Very Poor
 11. FLOODPLAIN QUALITY (Check ONLY one box):
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Very Poor
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Very Poor
 13. FLOODPLAIN QUALITY (Check ONLY one box):
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Fair
Poor
Very Poor
 14. FLOODPLAIN QUALITY (Check ONLY one box):
Good
Fair
Poor
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ADDITIONAL STREAM INFORMATION (This information must also be completed):
 CHEM PERFORMED: ☐ Yes ☒ No CHEM Score: (If Yes, Attach Completed CHEM Form)
 DOWNSTREAM DESIGNATED USE(S):
 Distance from Evaluated Stream:
 Distance from Evaluated Stream:
 Distance from Evaluated Stream:
 MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERBODIED AREA. CLEARLY MARK THE SITE LOCATION
 USGS Quadrangle Name: West Point NRC's Soil Map Page: Madison Twp.
 County: Columbiana Township / City: Madison Twp.
 MISCELLANEOUS:
 Base Flow Conditions (V/N): 4 Date of last precipitation: attached Quantity:
 Photograph Information: attached Canopy (% open): 20
 Emergent Turbidity? (V/N): N (Note lab sample no. or M. and all other results) Lab Number:
 Were samples collected for water chemistry? (V/N): N Dissolved Oxygen (mg/l): pH (3.0-14): Conductivity (umhos/cm):
 Field Measures: Temp (°C): Is the sampling reach representative of the stream (V/N): Y (If not, please explain):
 Additional comments/description of pollution impacts:
 BIOLOGIC EVALUATION:
 Performed? (V/N): N (If Yes, Record all observations. Voucher collectors optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (V/N): N Voucher? (V/N): N Salamanders Observed? (V/N): N Voucher? (V/N): N
 Frogs or Toads Observed? (V/N): N Voucher? (V/N): N Aquatic Macroinvertebrates Observed? (V/N): N Voucher? (V/N): N
 Comments Regarding Biology:
 DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
 Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
 new field
 young forest
 young forest
 pasture
 W-15
 pen
 overhanging
 S20
 FLOW
 NW

Ohio EPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION: Sheldahl Creek, Lake Erie, Lorain County, Ohio
 DATE: 4/20/15 SCORER: L. Sayle COMMENTS: DRAINAGE AREA (sq ft): 2.1
 LENGTH OF STREAM REACH (ft): 200 LAT: 40.1440 LONG: 81.079 RIVER CODE: 109 RIVER MILE: 1.0
 HHEI score (sum of metrics 1, 2, 3): 10
 NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
 STREAM CHANNEL: ☒ NONNATURAL CHANNEL ☐ RECOVERING ☐ RECENT OR NO RECOVERY
 WOODIFICATION: 15

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY the predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.
 TYPE PERCENT TYPE PERCENT
 BLR SLAPS (15 pts) 0 SILT (10) 0
 BOULDER (25 pts) 0 LEAF LITTER (10 pts) 0
 BEDROCK (15 pts) 0 FINE SAND (10 pts) 0
 COBBLE (15 pts) 0 CLAY or HARDPAN (10 pts) 0
 GRAVEL (25 pts) 0 ROCK (10 pts) 0
 SAND (<2mm) (15 pts) 15 ARTIFICIAL (10 pts) 0
 TOTAL NUMBER OF SUBSTRATE TYPES: (A) 3 (B) 3
 SCORE OF TWO MOST PREDOMINANT SUBSTRATE TYPES: 3

2. MAXIMUM POOL DEPTH (Measure the maximum pool depth within the 60m (200 ft) evaluation reach at the time of the survey. Check ONLY one box.)
 > 30 centimeters (120 pts) 0
 > 22.4 - 30 cm (120 pts) 0
 > 10 - 22.4 cm (120 pts) 0
 NO WATER OR MOIST CHANNEL (0 pts) 0
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
 > 4.0 meters (> 13 ft) (20 pts) 0
 > 3.0 m - 4.0 m (> 9' 7" - 13 ft) (20 pts) 0
 > 1.5 m - 3.0 m (> 4' 9" - 9' 7") (20 pts) 0
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

RIPARIAN ZONE AND FLOODPLAIN QUALITY (This information MUST also be completed. Anote: River List (L) and Right (R) as looking downstream.)
 RIPARIAN ZONE (Per Bank) FLOODPLAIN QUALITY
 L R (Max of 10 points per bank) L R
 Mature Forest, Wetland 0 0 Conservation Tillage 0 0
 Immature Forest, Shrub or Old Field 0 0 Urban or Industrial 0 0
 Residential, Park, New Field 0 0 Open Pasture, Row Crop 0 0
 Fenced Pasture 0 0 Mining or Construction 0 0
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

FLOW REGIME (At Time of Evaluation) (Check ONLY one box)
 Stream Flowing 0 0 Most Channel, Isolated pools, no flow (Intermittent)
 Subsurface flow with isolated pools (Ephemeral) 0 0 Dry channel, no water (Ephemeral)
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

VELOCITY (Number of bank fulls per ft in (200 ft) of channel) (Check ONLY one box)
 0.5 0 0 1.0 0 0 1.5 0 0 2.0 0 0 2.5 0 0 3.0 0 0
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

STREAM GRADIENT ESTIMATE
 Fall (as noted) 0 0 Moderate to Steep 0 0 Severe (10 to 100 ft) 0 0
 COMMENTS: NO WATER OR MOIST CHANNEL (0 pts)

ADDITIONAL STREAM INFORMATION (This information MUST also be completed):
 QHEI PERFORMANCE: ☐ Yes ☒ No QHEI Score: _____ (If Yes, Attach Completed QHEI Form)
 DOWNSTREAM DESIGNATED USE(S): _____
 Distance from Evaluated Stream: _____
 Distance from Evaluated Stream: _____
 Distance from Evaluated Stream: _____
 MAPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
 USGS Quadrangle Name: West Point NCRS Site Map Page: NRCS 84 Map Sheet Order
 County: Columbiana Township/City: Yellow Creek Twp.
 MISCELLANEOUS: _____
 Base Flow Condition (Y/N): Y Date of last precipitation: _____ Quality: _____
 Photograph Information: attached
 Elevation (Feet): 70
 Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or ID, and attach results) Lab Number: _____
 Field Measures: Time (°C): _____ Dissolved Oxygen (mg/l): _____ pH (5.0-10): _____ Conductivity (µmhos/cm): _____
 Is the sampling reach representative of the stream (Y/N): Y If not, please explain: _____
 Additional comments/description of pollution impacts: _____
 BIOE EVALUATION
 (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Performed? (Y/N): Y
 Fish Observed? (Y/N): _____ Voucher? (Y/N): _____ Voucher? (Y/N): _____
 Frog or Toadlets Observed? (Y/N): _____ Voucher? (Y/N): _____ Voucher? (Y/N): _____
 Comments Regarding Biology: _____
 DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (THIS MUST be completed):
 Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

ON EPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION: South Fork Energy Information Facility
 RIVER BASIN: S-23 RIVER: OHIO DRAINAGE AREA (mi²): 0.036
 LENGTH OF STREAM REACH (ft): 455 LAT: 40.640459 LONG: -80.702677 RIVER CODE: 0.036
 DATE: 4/24/15 SCORER: E. L. Kunkin COMMENTS: Values for Instructions
 NOTE: Complete All Items On This Form - Refer to "Field Evaluation"
 STREAM CHANNEL: ☐ NONE/NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY
 MODIFICATIONS:

1. SUBSTRATE: Estimate percent of every type of substrate present. Check ONLY TWO predominant substrate types below.
 (Max. of 40). Add total number of significant substrate types found (Max. of 6). Plus metric points is sum of boxes A + B.

TYPE	PERCENT	TYPE	PERCENT	HHE Metric Points
<input type="checkbox"/> BLOE SLASS (15 pts)	10	<input type="checkbox"/> SILT (10)	50	17
<input type="checkbox"/> BOULDER (25 pts)	10	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS (5 pts)		
<input type="checkbox"/> BEDROCK (15 pts)	10	<input type="checkbox"/> FINE DETRITUS (5 pts)		
<input type="checkbox"/> COBBLE (65/25 mm) (12 pts)	25	<input type="checkbox"/> CLAY or MUD (5 pts)		
<input type="checkbox"/> GRAVEL (65/25 mm) (5 pts)	5	<input type="checkbox"/> ROCK (5 pts)		
<input type="checkbox"/> SAND (12 mm) (5 pts)	5	<input type="checkbox"/> ARTIFICIAL (5 pts)		

Total of Percentages of Substrate Types: 45 (A) 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5
 Substrate Types: Slab, Boulder, Cobble, Bedrock
 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the line of evaluation. Record pool depth from road culverts or storm water pipes). (Check ONLY one box):
☐ > 3 cm - 10 cm (15 pts)
☐ > 10 cm - 23.5 cm (10 pts)
☐ > 23.5 - 30 cm (10 pts)
☐ > 30 - 38 cm (10 pts)
☐ > 38 - 45 cm (10 pts)
☐ > 45 - 53 cm (10 pts)
☐ > 53 - 61 cm (10 pts)
☐ NO WATER OR MOIST CHANNEL (0 pts)

COMMENTS: 7.5
 AVERAGE BANKFULL WIDTH (meters): 1.25

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements). (Check ONLY one box):
☐ > 4.0 m (15 pts)
☐ 3.0 m - 4.0 m (10 pts)
☐ 2.0 m - 3.0 m (10 pts)
☐ 1.0 m - 2.0 m (10 pts)
☐ < 1.0 m (10 pts)

COMMENTS: 15

This information MUST also be completed
 RIPARIAN ZONE AND FLOODPLAIN QUALITY: (NOTE: River Left (L) and Right (R) as looking downstream)

LEFT BANK	RIGHT BANK
<input checked="" type="checkbox"/> 1. (Per Bank)	<input checked="" type="checkbox"/> 1. (Per Bank)
<input type="checkbox"/> 2. (Most Predominant per Bank)	<input type="checkbox"/> 2. (Most Predominant per Bank)
<input type="checkbox"/> Mature Forest, Wetland	<input type="checkbox"/> Mature Forest, Wetland
<input type="checkbox"/> Pasture, Field, Shrub or Old	<input type="checkbox"/> Pasture, Field, Shrub or Old
<input type="checkbox"/> Field	<input type="checkbox"/> Field
<input type="checkbox"/> Residential, Park, New Field	<input type="checkbox"/> Residential, Park, New Field
<input type="checkbox"/> Fenced Pasture	<input type="checkbox"/> Fenced Pasture
<input type="checkbox"/> None	<input type="checkbox"/> None

COMMENTS: Successional forest
5-10% bedrock
gravel
Successional forest

FLOW REGIME (A) (Rate of Erosion) (Check ONLY one box):
☐ Stream Flowing
☒ Submerged flow with isolated pools (intermittent)
☐ Dry channel, no water (ephemeral)

SINOUSTY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ 3.5

STREAM GRADIENT ESTIMATE:
☐ High to low
☐ Flat to moderate
☒ Moderate to steep
☐ Steep to high

PHHW Form Page - 1

ADDITIONAL STREAM INFORMATION (This information MUST also be completed):

OHE PERFORMED: ☐ Yes ☒ No OHEI Score: 0.036 (If Yes, Attach Completed OHEI Form)
 DOWNSTREAM DESIGNATED USES:
☒ WWH Name: Yellow Creek Distance from Evaluated Stream: 0.036
☐ CWH Name: Yellow Creek Distance from Evaluated Stream: 0.036
☐ EWH Name: Yellow Creek Distance from Evaluated Stream: 0.036
 MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE BUREAU WATERBENCH AREA. CLEARLY MARK THE SITE LOCATION
 USGS Quadrangle Name: WEST Point NRCIS Soil Map Page: Yellow Creek
 County: COLUMBIANA Township: Yellow Creek

MISCELLANEOUS

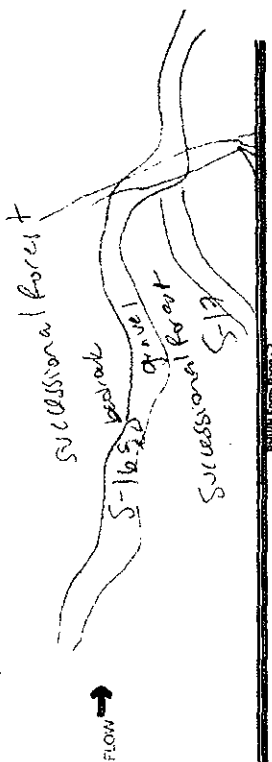
Base Flow Conditions? (Y/N): N Date of last precipitation: Yellow Creek Quantity: Yellow Creek
 Photograph Information:
 Revealed Turbidity? (Y/N): N Canopy (% open): Yellow Creek
 Were samples collected for water chemistry? (Y/N): N (place lab sample no. or lot and attach results) Lab Number: Yellow Creek
 Field Measures: Temp (°C): Yellow Creek Dissolved Oxygen (mg/L): Yellow Creek pH (SU): Yellow Creek Conductivity (µmhos/cm): Yellow Creek
 Is the sampling reach representative of the stream? (Y/N): Yellow Creek If not, please explain: Yellow Creek
 Additional comment/description of pollution impacts: Yellow Creek

BIOLOGIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the 10 number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N): N Voucher? (Y/N): Yellow Creek Voucher? (Y/N): Yellow Creek
 Frogs or Toads Observed? (Y/N): N Voucher? (Y/N): Yellow Creek Voucher? (Y/N): Yellow Creek
 Comments Regarding Biology: Yellow Creek

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





Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife

Scott Zody, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

May 29, 2015

Lynn Gresock
Tetra Tech
238 Littleton Rd.
Westford, MA 01886

Dear Ms. Gresock,

Per your request, I have e-mailed you a set of shapefiles with our Natural Heritage Program data for the East Ohio Energy Electric Power Plant Construction project, including a one mile radius, in Yellow Creek Township, Columbiana County, Ohio. This data will not be published or distributed beyond the scope of the project description on the data request form without prior written permission of the Natural Heritage Program.

Records included in the data layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, FE = federal endangered, FT = federal threatened and A = recently added to inventory, status not yet determined.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does 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.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke
Ohio Natural Heritage Program

Attachment D: Letter to Landowners

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Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
P.O. Box 1008
Columbus, Ohio 43216-1008

614.464.6400 | www.vorys.com

Founded 1909

Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Buckeye Water District
P.O. Box 105
Wellsville, OH 43968
Attn: Al DeAngelis

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. DeAngelis:

This letter is being sent to the Buckeye Water District pursuant to the Ohio Power Siting Board rules and because the Buckeye Water District is either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

The SFE Natural Gas Interconnection will supply natural gas, the primary fuel to the proposed state-of-the-art combined cycle electric generating facility located on an 86.5-acre property along Hibbetts Mill Road in Yellow Creek Township, Columbiana County. The SFE Natural Gas Interconnection will extend from a point of interconnection at the proposed electric generating facility in a westerly direction for approximately two miles to a point of interconnection at the existing Dominion Transmission Pipeline (Dominion) natural gas pipeline. Enclosed is a map showing an overview of the SFE Natural Gas Interconnection.

South Field Energy LLC recently filed a Letter of Notification with the Ohio Power Siting Board which is now pending in Case No. 16-1166-GA-BLN. The Letter of Notification seeks approval to construct, operate and maintain the SFE Natural Gas Pipeline Interconnection.

A copy of the Letter of Notification is available for public inspection at the Columbiana Public Library, 332 N. Middle St., Columbiana, OH 44408 and at the Wellsville Carnegie Public Library located at 115 9th Street, Wellsville, OH 43968. You can also view the June 30, 2016 Letter of Notification online at www.opsb.ohio.gov and by typing in Case No. 16-1166. You can also request a copy by contacting me at the above address, telephone or email.

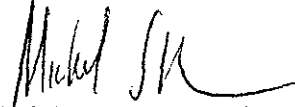
June 30, 2016

Page 2

You may participate and comment in the Board's proceedings by filing a motion to intervene or by filing comments with the Board by July 18, 2016. Motions and comments should be addressed to the Docketing Division, The Ohio Power Siting Board, 180 E. Broad St., 11th Floor, Columbus, OH 43215-3793, and cite Case No. 16-1166-GA-BLN.

If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

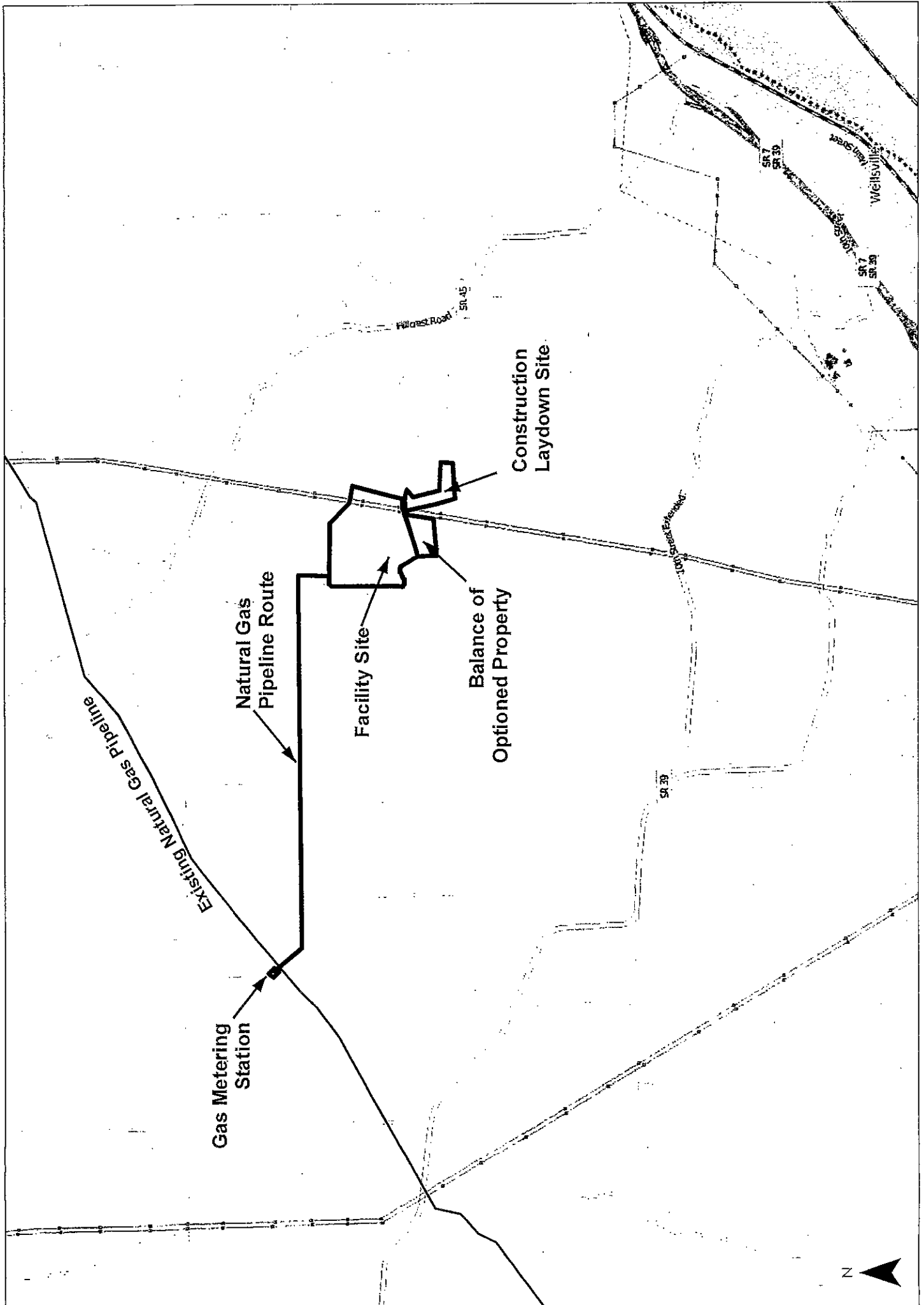
Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Existing Natural Gas Pipeline

Gas Metering Station

Natural Gas Pipeline Route

Facility Site

Balance of
Optioned Property

Construction
Laydown Site

Willow Road
SR 45

SR 39

100' Street Extended

SR 7
SR 39

Wellsville Road
SR 7
SR 39





Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
P.O. Box 1008
Columbus, Ohio 43216-1008

614.464.6400 | www.vorys.com

Founded 1909

Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Dale A. and Kelly A. McElhaney
18123 Nicholson Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. McElhaney:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

The SFE Natural Gas Interconnection will supply natural gas, the primary fuel to the proposed state-of-the-art combined cycle electric generating facility located on an 86.5-acre property along Hibbetts Mill Road in Yellow Creek Township, Columbiana County. The SFE Natural Gas Interconnection will extend from a point of interconnection at the proposed electric generating facility in a westerly direction for approximately two miles to a point of interconnection at the existing Dominion Transmission Pipeline (Dominion) natural gas pipeline. Enclosed is a map showing an overview of the SFE Natural Gas Interconnection.

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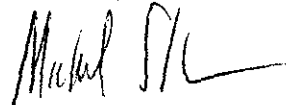
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

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Michael J. Settineri
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June 30, 2016

Steven A. and Tanna T. Newlan
210 7th Street
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Newlan:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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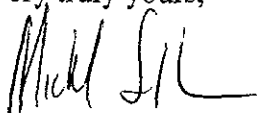
June 30, 2016

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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Email mjsettineri@vorys.com

June 30, 2016

Norman S. Spiker
115 Stanton Avenue
Columbiana, OH 44408

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Spiker:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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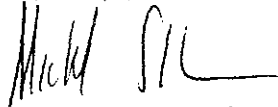
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Email mjsettineri@vorys.com

June 30, 2016

Brian K. Wallace
41840 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Wallace:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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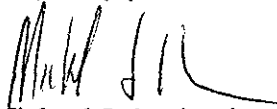
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Dean L. and Sandra J. Forbes
42301 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Forbes:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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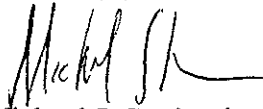
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
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Columbus, Ohio 43216-1008

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Herman R. and Gail L. Lindsay
16712 State Route 45
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Lindsay:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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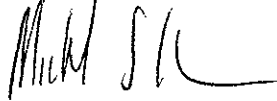
June 30, 2016

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Very truly yours,



Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
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Columbus, Ohio 43216-1008

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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Mark P. and Amy E. Wiley
41647 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Wiley:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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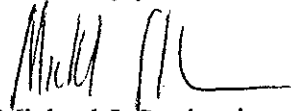
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
P.O. Box 1008
Columbus, Ohio 43216-1008

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Nyleptha L. and Michael J. Mattern
43051 James Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Mattern:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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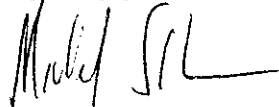
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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael J. Settineri", with a long horizontal flourish extending to the right.

Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

52 East Gay Street
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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Thomas H. and Carol J. Excell
17848 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Excell:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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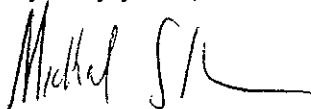
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Ray M. and Nancy K. Parrish
18121 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Parrish:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

The SFE Natural Gas Interconnection will supply natural gas, the primary fuel to the proposed state-of-the-art combined cycle electric generating facility located on an 86.5-acre property along Hibbetts Mill Road in Yellow Creek Township, Columbiana County. The SFE Natural Gas Interconnection will extend from a point of interconnection at the proposed electric generating facility in a westerly direction for approximately two miles to a point of interconnection at the existing Dominion Transmission Pipeline (Dominion) natural gas pipeline. Enclosed is a map showing an overview of the SFE Natural Gas Interconnection.

South Field Energy LLC recently filed a Letter of Notification with the Ohio Power Siting Board which is now pending in Case No. 16-1166-GA-BLN. The Letter of Notification seeks approval to construct, operate and maintain the SFE Natural Gas Pipeline Interconnection.

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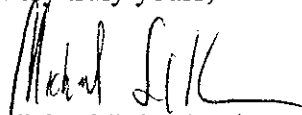
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

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Founded 1909

Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

William Brian Forbes
17729 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Forbes:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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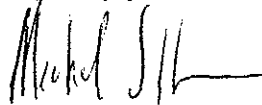
June 30, 2016

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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
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June 30, 2016

Charles T. and Deborah McDowell
43138 10th Street Ext.
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. McDowell:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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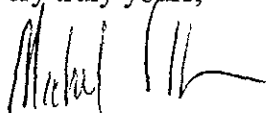
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
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Email mjsettineri@vorys.com

June 30, 2016

Tommy Watson
43857 Hibbetts Mill Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Watson:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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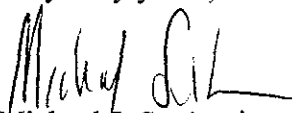
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
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Email mjsettineri@vorys.com

June 30, 2016

Charles M. and Pamela Sue Davis
18421 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Davis:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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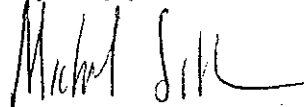
June 30, 2016

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Very truly yours,



Michael J. Settineri
Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Michael J. Settineri
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Email mjsettineri@vorys.com

June 30, 2016

Bradley F. and Cynthia J. Bartlett
46365 Walker Road
East Liverpool, OH 43920

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Bartlett:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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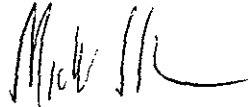
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Cheryl Pierce
41791 Glasgow Road
Lisbon, OH 44432

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Ms. Pierce:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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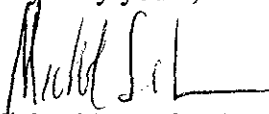
June 30, 2016

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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

John F. and Sandra Lee Russell
42933 State Route 39
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Russell:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Cory D. and Cindy L. Marshall
41694 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Marshall:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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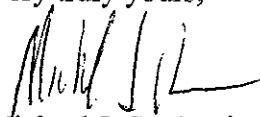
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Legal Counsel

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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Robert Lee and Kimberly Jo Woodburn
41710 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Woodburn:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Lisa Kay Pence
41848 Osbourne Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Ms. Pence:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio (“the SFE Natural Gas Interconnection”).

The SFE Natural Gas Interconnection will supply natural gas, the primary fuel to the proposed state-of-the-art combined cycle electric generating facility located on an 86.5-acre property along Hibbetts Mill Road in Yellow Creek Township, Columbiana County. The SFE Natural Gas Interconnection will extend from a point of interconnection at the proposed electric generating facility in a westerly direction for approximately two miles to a point of interconnection at the existing Dominion Transmission Pipeline (Dominion) natural gas pipeline. Enclosed is a map showing an overview of the SFE Natural Gas Interconnection.

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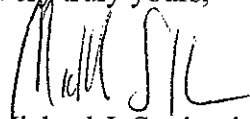
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
Legal Counsel

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Columbus, Ohio 43216-1008

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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Kenneth Dean Williams
18142 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Williams:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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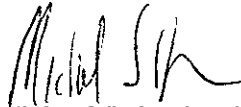
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June 30, 2016

Kenneth A. Cochran, Sr.
18166 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Cochran:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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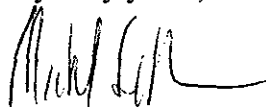
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Michael J. Settineri

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Attorney for South Field Energy LLC

MJS/mre
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Kenneth C. Butts
18202 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Butts:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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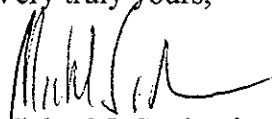
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Michael J. Settineri
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Email mjsettineri@vorys.com

June 30, 2016

Barbara L. Williams
18222 Fife Coal Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Ms. Williams:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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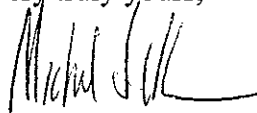
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Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Stanley O. and Janice A. Cunningham
18942 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Cunningham:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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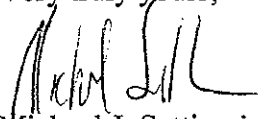
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Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Columbus, Ohio 43216-1008

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Troy Huff
18190 Nicholson Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Huff:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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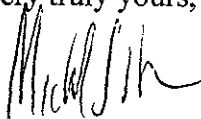
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Attorney for South Field Energy LLC

MJS/mre
Enclosure



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Michael J. Settineri
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June 30, 2016

Lyle and Cassandra Adkins
1390 Hillcrest Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Adkins:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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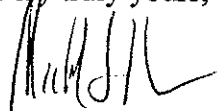
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Attorney for South Field Energy LLC

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Michael J. Settineri
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Email mjsettineri@vorys.com

June 30, 2016

Edward C. and Mary E. Doland
1801 Bridgeview St., Box 57
Matlacha, FL 33993-0057

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Doland:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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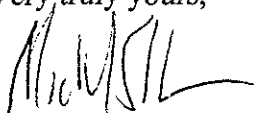
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Attorney for South Field Energy LLC

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Michael J. Settineri
Direct Dial (614) 464-5462
Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

Thomas H. and Carol J. Minor
7905 State Route 45
Lisbon, OH 44432

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Minor:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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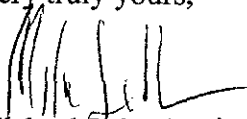
June 30, 2016

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If you have any questions concerning the proposed SFE Natural Gas Interconnection, please contact Zac Gordon, the project manager, at (617) 456-2213 or me at (614) 464-5462.

Very truly yours,



Michael J. Settineri

Vorys, Sater, Seymour and Pease LLP
Attorney for South Field Energy LLC

MJS/mre
Enclosure



Vorys, Sater, Seymour and Pease LLP
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Michael J. Settineri
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June 30, 2016

Cory and Jamie Boyle
18864 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Boyle:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

The SFE Natural Gas Interconnection will supply natural gas, the primary fuel to the proposed state-of-the-art combined cycle electric generating facility located on an 86.5-acre property along Hibbetts Mill Road in Yellow Creek Township, Columbiana County. The SFE Natural Gas Interconnection will extend from a point of interconnection at the proposed electric generating facility in a westerly direction for approximately two miles to a point of interconnection at the existing Dominion Transmission Pipeline (Dominion) natural gas pipeline. Enclosed is a map showing an overview of the SFE Natural Gas Interconnection.

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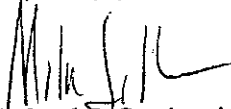
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June 30, 2016

Arron T. and Kimberly A. Blatch
18717 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Blatch:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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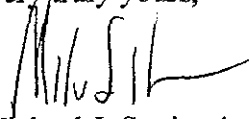
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Michael J. Settineri
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Email mjsettineri@vorys.com

June 30, 2016

Alan H. Buzzard
18699 Forbes Road
Wellsville, OH 43968

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. Buzzard:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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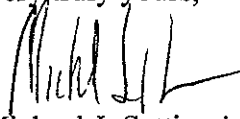
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Michael J. Settineri
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Direct Fax (614) 719-5146
Email mjsettineri@vorys.com

June 30, 2016

John and Pearl Fraser Trust
11680 Edge Hill Road
Newburg, MD 20664

Re: South Field Energy Natural Gas Pipeline Interconnection
Columbiana County, Yellow Creek and Madison Townships
Ohio Power Siting Board Case No. 16-1166-GA-BLN

Dear Mr. and Mrs. Fraser:

This letter is being sent to you pursuant to the Ohio Power Siting Board rules and because you are either a property owner or an affected tenant in the vicinity of a proposed two mile 20 inch diameter natural gas pipeline which will be located along the border of Madison and Yellow Creek Townships, Columbiana County, Ohio ("the SFE Natural Gas Interconnection").

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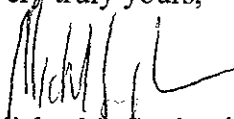
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