

Marysville Connector Pipeline Project

Wetland and Waterbody Delineation Report

December 20, 2019

Prepared for:

Columbia Gas of Ohio (NiSource) 1021 North Main Street Mansfield, Ohio 44903

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Sign-off Sheet

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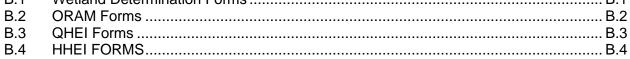
Angela Sjollema Approved by

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Matt Teitt

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1.0 INTRODUCTION

1.1 PURPOSE

Columbia Gas of Ohio (COH) plans to construct a new 4.78 mile 12-inch distribution class steel natural gas pipeline and one district regulator station (The Project). The length of the survey corridor is 4.78 miles with a 100 to 300-foot right-of-way (ROW). The Project is located southeast of the City of Marysville, Ohio. The proposed pipeline route begins south of the intersection of Scottslawn Road and Industrial Parkway and runs southeast towards the intersection of U.S. 33 and State Route 42 in Millcreek and Jerome Townships, Union County, Ohio (Appendix A, Figure 1).

Stantec Consulting Services Inc. (Stantec) was retained by COH to conduct a delineation of potential waters of the United States (WOUS), including wetlands, waterbodies, and potentially isolated wetlands within the Project area. The purpose of this delineation was to identify potential jurisdictional features present within the Project area.

Stantec completed the delineation of wetlands and waterbodies on November 20 and December 20, 2019. The information contained in this report reflects the current site conditions that were observed during the field delineation. Datasheets and photographs of features delineated within the Project area are included in Appendices B and C, respectively.

1.2 LOCATION OF PROJECT

The Project is located in the Millcreek and Jerome Townships, Union County, Ohio (Appendix A, Figure 1). The Project area is depicted on the Marysville and Shawnee Hills, Ohio U.S. Geological Survey (USGS) 7.5-minute series topographic maps and the approximate end points of the Project in latitude and longitude coordinates are 40.200590°N, -83.304899°W and 40.175751°N, -83.237832°W, respectively. The Project area is located in the Lower Mill Creek watershed (HUC 12: 050600010604) that drains into the Scioto River and the Sugar Run watershed (HUC 12: 050600011904) that drains to Big Darby Creek.

2.0 METHODS

2.1 WETLAND DELINEATION

Prior to completing the survey, a desktop review of the Project area was conducted using the Marysville and Shawnee Hills, Ohio USGS 7.5 Minute Series topographic maps (Appendix A, Figure 1), U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey of Union County, Ohio (USDA, 1975; Appendix A, Figure 2), the National Wetlands Inventory map (USFWS 2019) (Appendix A, Figure 3), and aerial imagery mapping were reviewed to assess the likelihood of occurrence and probable location of wetlands and waterbodies within the Project area.

Following this desktop review, Stantec conducted field surveys within the Project area on November 20 and December 20, 2019. Wetland boundaries were assessed using the "Routine On-site Determination Method" as described in the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE Environmental Laboratory 1987) and



the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE 2010). As of August 17, 1991, the USACE was directed to utilize the USACE Wetland Delineation Manual (USACE Environmental Laboratory 1987) to identify and delineate wetlands potentially subject to regulation under Section 404 of the Clean Water Act (CWA). Wetlands were classified according to "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al. 1979). In this classification system, wetland habitats are divided into five major systems including: (1) Marine, (2) Estuarine, (3) Lacustrine, (4) Palustrine, and (5) Riverine. Each of these systems is further divided into subsystems, classes, and subclasses. Vegetative communities were inventoried to assess the dominant plant species in each of four vegetative layers: trees, saplings/shrubs, herbs, and woody vines. The wetland indicator status for each of the dominant species was obtained using the 2016 National Wetland Plant List (Lichvar et al. 2016). The wetland soil indicators were obtained using the Munsell soil-color chart (Munsell Color 2009) and the hydric soil field indicators (USDA, NRCS 2010). The uppermost wetland boundary and sampling points were identified and surveyed using a handheld Global Positioning System (GPS) unit and mapped with Geographical Information System (GIS) software. Stantec collected data and completed relevant assessment forms, which included: USACE Wetland Determination Forms (WDF), and Ohio Rapid Assessment Method v 5.0 forms (ORAM; Mack 2001). Datasheets are provided in Appendix B.

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05; USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definition in the Federal Register/Vol. 67, No. 10 (2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2012) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). Datasheets are provided in Appendix B. The centerline of each waterway, or both banks for streams 15 feet or wider, were identified and surveyed using a sub-meter accurate handheld GPS unit and mapped with GIS software.

2.3 OPEN WATER DELINEATION

Open water boundaries were assessed using the definition described in the "Classification of Wetlands and Deepwater Habitats of the United States" (Cowardin et al. 1979) which includes wetland and deepwater habitats with most of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30 percent areal coverage; and (3) total area exceeds 20 acres (8 hectares [ha]). Similar wetland and deepwater habitats totaling less than 20 acres (8 ha) are also included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up most or part of the boundary, or if the water depth in the deepest part of the basin exceeds 6.6 feet (2 meters) at low water (estimated).



3.0 OVERVIEW OF PROJECT AREA

3.1 GEOLOGY AND TOPOGRAPHY

The Project is located in Union County, Ohio and lies within the Till Plains section of the Central Lowlands physiographic province. The Project lies within the Central Ohio Clayey Till Plain region, which is characterized by: (1) a surface of clayey till; (2) well-defined moraines with intervening flat-lying ground moraine and intermorainal lake basins; (3) no boulder belts; (4) silt-, clay-, and till-filled lake basins; and (5) few large streams and limited sand and gravel outwashes. The geology of the region consists of clayey, high-lime Wisconsinan-age till from a northeastern source and lacustrine materials over Lower Paleozoic-age carbonate rocks. The eastern side of the region is more shales. Elevation ranges from 700 – 1,150 feet with moderate relief (ODGS 1998).

3.2 CLIMATE

The average winter temperature in Union County is 29°F, and the average winter daily minimum temperature is 20°F. The average summer temperature is 71°F and the average daily maximum temperature is 83°F. Precipitation in Union County averages 36.58 inches per year but varies widely from year to year. Generally, precipitation is adequate and well distributed, but most frequently occurs from March to August (USDA 1975).

3.3 SOILS

The Soil Survey of Union County, Ohio (USDA 1975) and the Natural Resources Conservation Service (NRCS) Web Soil Survey were consulted to assess soil types within the Project area (USDA, NRCS 2010). A copy of the soil map is included in Appendix A, Figure 2. Soils within the Project area with respective acreages and percentages are included in Table 1. All four soils listed within the Project area were considered to be hydric as shown in Table 1.

Union County, Ohio								
Map Unit Symbol	Map Unit Name	Acres in the Project Area	Percent within Project Area	Hydric?				
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	68.11	60.3	Yes				
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	11.45	10.1	Yes				
Pk	Pewamo silty clay loam, 0 to 1 percent slopes	31.15	27.6	Yes				
We	Wetzel silty clay loam	zel silty clay loam 2.21		Yes				
	Totals for Project Area:	112.93 acres	100.0%					

Table 1. Soil Types Known to Occur within the Marysville Connector Pipeline Project Area, Union County, Ohio



4.0 **RESULTS**

4.1 EXISTING CONDITIONS

Upland habitat within the Project area consists of maintained lawn, maintained right-of-way, developed/urban, old field habitat, early successional habitat, fencerow, cropland, and pasture. The maintained lawn, maintained right-of-way, and pasture habitats consist of Kentucky bluegrass (*Poa pratensis*), common dandelion (*Taraxacum officinale*), great plantain (*Plantago major*), English plantain (*Plantago lanceolata*), Canada thistle (*Cirsium arvense*), wild strawberry (*Fragaria vesca*), Colorado blue spruce (*Picea pungens*), Norway spruce (*Picea abies*), and ground ivy (*Glechoma hederacea*). The old field habitat was dominated by Indian grass (*Sorghastrum nutans*), Canada goldenrod (*Solidago canadensis*), switchgrass (*Panicum virgatum*), Queen Anne's lace (*Daucus carota*), Fuller's teasel (*Dipsacus fullonum*), nodding foxtail (*Setaria faberi*), health aster (*Symphyotrichum ericoides*), and common milkweed (*Asclepias syriaca*). The early successional habitat is dominated by dogwood (*Cornus* sp.) in the shrub layer and Canada goldenrod, ironweed (*Vernonia* sp.), and Queen Anne's lace in the herbaceous layer. The fence row habitat was dominated by shagbark hickory (*Carya ovata*), common hackberry (*Celtis occidentalis*), and white oak (*Quercus alba*). The cropland habitat was dominated by corn (*Zea mays*), soybeans (*Glycene max*), green foxtail, horse nettle (*Solanum carolinense*), and barnyard grass (*Echinochloa crus-galli*).

4.2 WETLAND HABITAT

Four wetlands were identified within the Project area, totaling approximately 0.97 acre (Appendix A, Figure 4). Appendix B contains the WDF and ORAM forms for the wetlands identified within the Project area. Representative photographs of the wetlands are provided in Appendix C. The wetlands are described below and summarized in Table 2.

Wetland 1

Wetland 1 is a palustrine emergent (PEM) wetland approximately 0.79 acres in size within the Project area. The functional assessment (ORAM) of Wetland 1 yielded a score of 32 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of "moderate" quality. Wetland 1 is potentially jurisdictional due to its hydrological connection to Stream 1. Due to the large size of Wetland 1, two wetland sample plots were completed. The WDF for SP01 included a first soil horizon of 2 inches of silty clay loam with a chroma matrix of 10YR3/3. The next 4 inches were silty clay loam with a gley matrix (Gley 1 2.5/10Y) and redox concentrations in the pore linings (5YR4/6), meeting the Loamy Gleyed Matrix (F2). Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (*Typha angustifolia*; OBL).

The WDF for SP03 included a first soil horizon of 3 inches of silty clay loam with low chroma matrix (10YR 3/2) and redox concentrations in pore linings (5YR 5/8) and the matrix (5YR 4/6). The next 7 inches were silty clay loam with a low chroma matrix (10YR 4/1) with redox concentrations in the matrix (5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by



hydrophytic vegetation including reed canary grass (*Phalaris arundinacea;* FACW) and narrowleaf cattail (OBL).

Wetland 2

Wetland 2 is a PEM wetland approximately 0.10 acre in size. The functional assessment (ORAM) of Wetland 2 yielded a score of 25 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 2 is potentially jurisdictional due to its hydrological connection to Streams 2 and 3. A WDF was completed, and the first soil horizon was 10 inches of clay loam with low chroma matrix (10YR 4/2) and redox concentrations in pore linings (5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).

Wetland 3

Wetland 3 is a PEM wetland approximately 0.02 acre in size. The functional assessment (ORAM) of Wetland 3 yielded a score of 15 and identifies this wetland as a Category 1 wetland, indicating it is a wetland of "poor" quality. Wetland 3 is potentially jurisdictional due to its hydrological connection to Stream 4 and Wetland 4 (via upland drainage features). A WDF was completed, and the first soil horizon was 7 inches of clay loam with low chroma matrix (10YR 4/2) and redox concentrations in pore linings (5 YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included surface water, high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including narrowleaf cattail (OBL) and reed canary grass (FACW).

Wetland 4

Wetland 4 is a PEM wetland approximately 0.06 acre in size. The functional assessment (ORAM) of Wetland 4 yielded a score of 34 and identifies this wetland as a Category 2 wetland, indicating it is a wetland of "moderate" quality. Wetland 4 is potentially jurisdictional due to its hydrological connection to Stream 4. A WDF was completed, and the first soil horizon was 7 inches of clay loam with low chroma matrix (10YR 4/2) and redox concentrations in pore linings (5YR 4/6), meeting the Depleted Matrix (F3) hydric soil indicator. Primary hydrological indicators included high water table, saturation, and oxidized rhizospheres on living roots. Vegetation identified within the sample plot was dominated by hydrophytic vegetation including reed canary grass (FACW).



Wetland Name	Latitude	Longitude	Classification	ORAM Score	ORAM Regulatory Category	Total Acreage in Project Area
Wetland 1	40.183979	-83.254306	PEM	32	2	0.79
Wetland 2	40.196261	-83.29241	PEM	25	1	0.10
Wetland 3	40.199725	-83.3033	PEM	15	1	0.02
Wetland 4	40.200044	-83.304206	PEM	34	2	0.06
Total Delineated Wetland						0.97 acres

Table 2. Potential Wetlands Identified in the Marysville Connector Pipeline Project Area, Union County, Ohio

4.3 STREAM HABITAT

Four streams were identified within the Project area, totaling approximately 757 linear feet (Appendix A, Figure 4). Appendix B contains the QHEI and HHEI datasheets. Representative photographs of the streams are provided in Appendix C. The streams are described below and summarized in Table 3.

Stream 1

Stream 1 is a perennial stream with approximately 200 linear feet within the Project area. The functional assessment (QHEI) of Stream 1 yielded a score of 37, indicating it is a stream of "poor" quality. The stream had a bankfull width of 4 feet and a bankfull depth of 1.5 feet and was flowing at the time of site visit. Substrates observed were primarily hardpan and bedrock. Stream 1 drains into Sugar Run outside the Project area.

Stream 2

Stream 2 is an intermittent stream with approximately 321 linear feet within the Project area. The functional assessment (QHEI) of Stream 2 yielded a score of 41, indicating it is a stream of "poor" quality. The stream had a bankfull width of 3.2 feet and a bankfull depth of 3.5 feet and had isolated shallow pools at the time of site visit. Substrates observed were primarily hardpan and silt. Stream 2 drains into Mill Creek outside the Project area.

Stream 3

Stream 3 is an intermittent stream with approximately 144 linear feet within the Project area. The functional assessment (HHEI) of Stream 3 yielded a score of 31, indicating it is a Modified Class II PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 1.5 feet and had isolated shallow pools at the time of site visit. The substrate observed was primarily hardpan. Stream 3 drains into Wetland 2 outside Project area, which drains into Stream 2.



Stream 4

Stream 4 is an ephemeral stream with approximately 92 linear feet within the Project area. The functional assessment (HHEI) of Stream 4 yielded a score of 21, indicating it is Modified Class I-PHWH stream. The stream had a bankfull width of 3 feet and a bankfull depth of 0.5 feet and had isolated shallow pools at the time of site visit. The substrate observed was primarily hardpan. Stream 4 drains into Wetland 4 within the Project area.

Table 3. Potential Streams Identified in the Marysville Connector Pipeline Project Area, Union County, Ohio

Stream Name	Latitude	Longitude	OHWM Width (feet)	OHWM Depth (feet)	Classification	Evaluation Method	Score	Total Linear Feet in Project Area
Stream 1	40.179487	-83.249033	3	1.5	Perennial	QHEI	37	200
Stream 2	40.195947	-83.291216	2	0.5	Intermittent	QHEI	41	321
Stream 3	40.196278	-83.297254	2	0.5	Intermittent	HHEI	31	144
Stream 4	40.199952	-83.304342	2.5	0.3	Ephemeral	HHEI	21	92
Total Linear Footage in Project Area							757	

5.0 CONCLUSION

Stantec conducted a delineation of potential WOUS within the Project area located in the Millcreek and Jerome townships, Union County, Ohio. The purpose and objective of the wetland and waterbody delineation was to identify the extent and spatial arrangement of potential jurisdictional wetlands and waterbodies within the Project area. Four potentially jurisdictional wetlands and four potentially jurisdictional streams were identified within the Project area. A total of approximately 0.85 acre of delineated Category 2 PEM wetlands and 0.12 acre of delineated Category 1 PEM wetlands were identified in the Project area. A total of 200 linear feet of perennial stream, 465 linear feet of intermittent stream, and 92 linear feet of ephemeral stream for a total length of 757 linear feet of potentially jurisdictional stream were identified within the Project area.

Stantec's opinion regarding the presence/absence of jurisdictional WOUS and isolated wetlands is preliminary. Only the USACE can provide an official determination of the presence and extent of jurisdictional WOUS. Wetlands that are considered WOUS are subject to regulation under Section 404 of the CWA and the jurisdictional regulatory authority lies with the USACE. Additionally, the OEPA has regulatory authority over isolated wetlands under Ohio Revised Code 61111.021. Stantec recommends that Columbia Gas of Ohio/NiSource contact the USACE for final jurisdictional review and concurrence with Stantec's opinion regarding the presence/absence of WOUS within the Project area prior to construction activities associated with this Project.



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APPENDICES

Appendix A FIGURES

A.1 FIGURE 1 – PROJECT LOCATION AND TOPOGRAPHY MAP



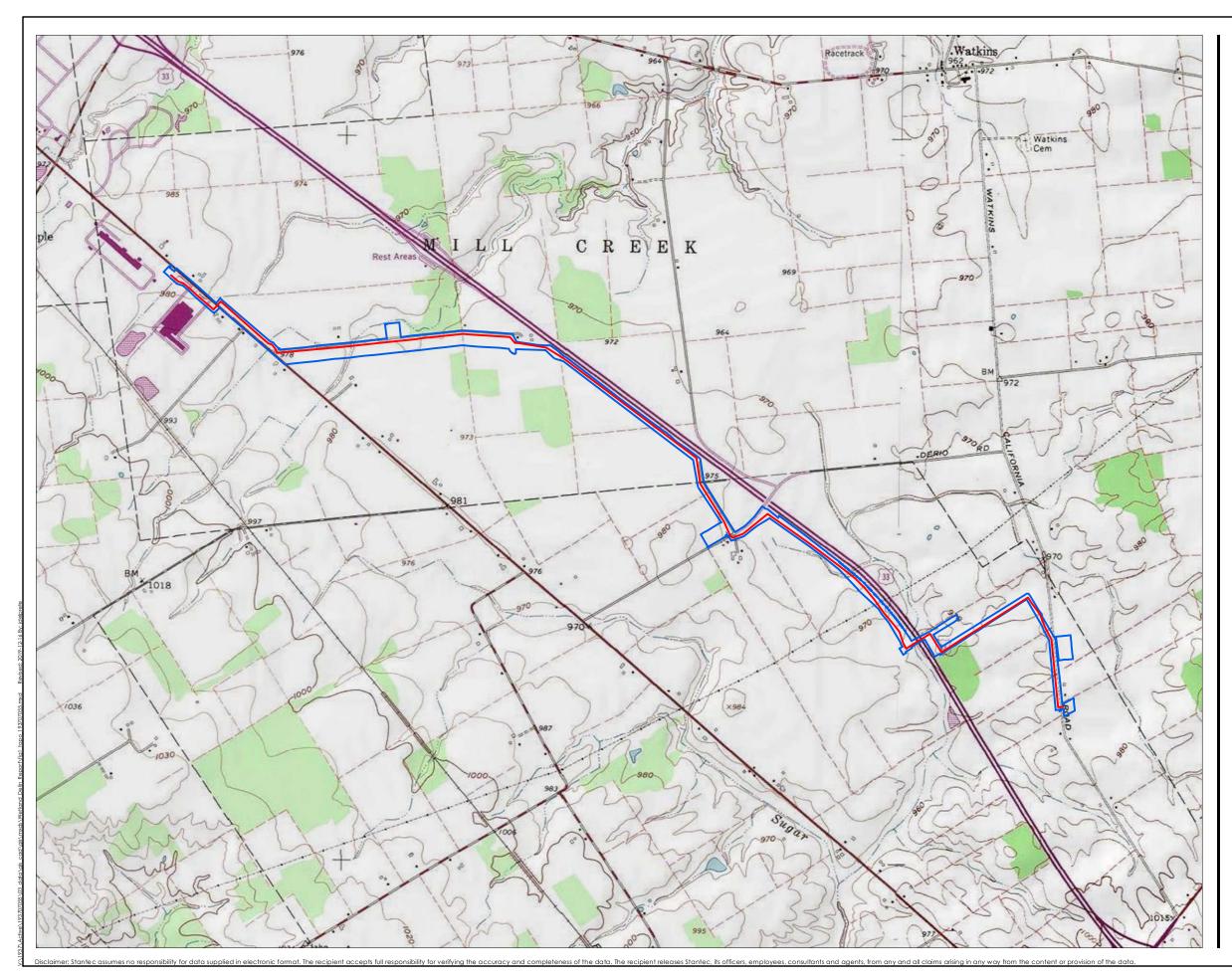


Figure No. 1

Title **Project Location and Topography**

Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation

Project Location Union County, Ohio 193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05





<u>Legend</u>





Notes

Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 Background: USGS 7.5' Topographic Quadrangles

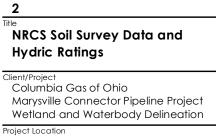


A.2 FIGURE 2 – NRCS SOIL SURVEY DATA AND HYDRIC RATINGS MAP









Union County, Ohio

193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

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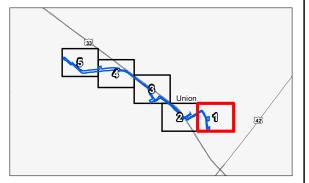
Survey Corridor ✓ Approximate Proposed Pipeline NRCS Soil Survey Data Hydric Ratings Predominantly Hydric Soil Partially Hydric Soil Non-Hydric Soil

National Hydrography Dataset

∼ Perennial Stream

Intermittent Stream

S Waterbody



Notes

Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Data Sources Include: Stantec, Columbia Gas, USGS, NRCS, NADS
 Orthophotography: 2018 OGRIP









Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation

Project Location

Union County, Ohio

193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

400 0 200 1:4,800 (At original document size of 11x17) Feet



<u>Legend</u>

Survey Corridor V Approximate Proposed Pipeline NRCS Soil Survey Data Hydric Ratings Predominantly Hydric Soil

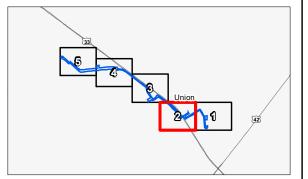
Partially Hydric Soil

Non-Hydric Soil

National Hydrography Dataset ∼ Perennial Stream

Intermittent Stream

S Waterbody

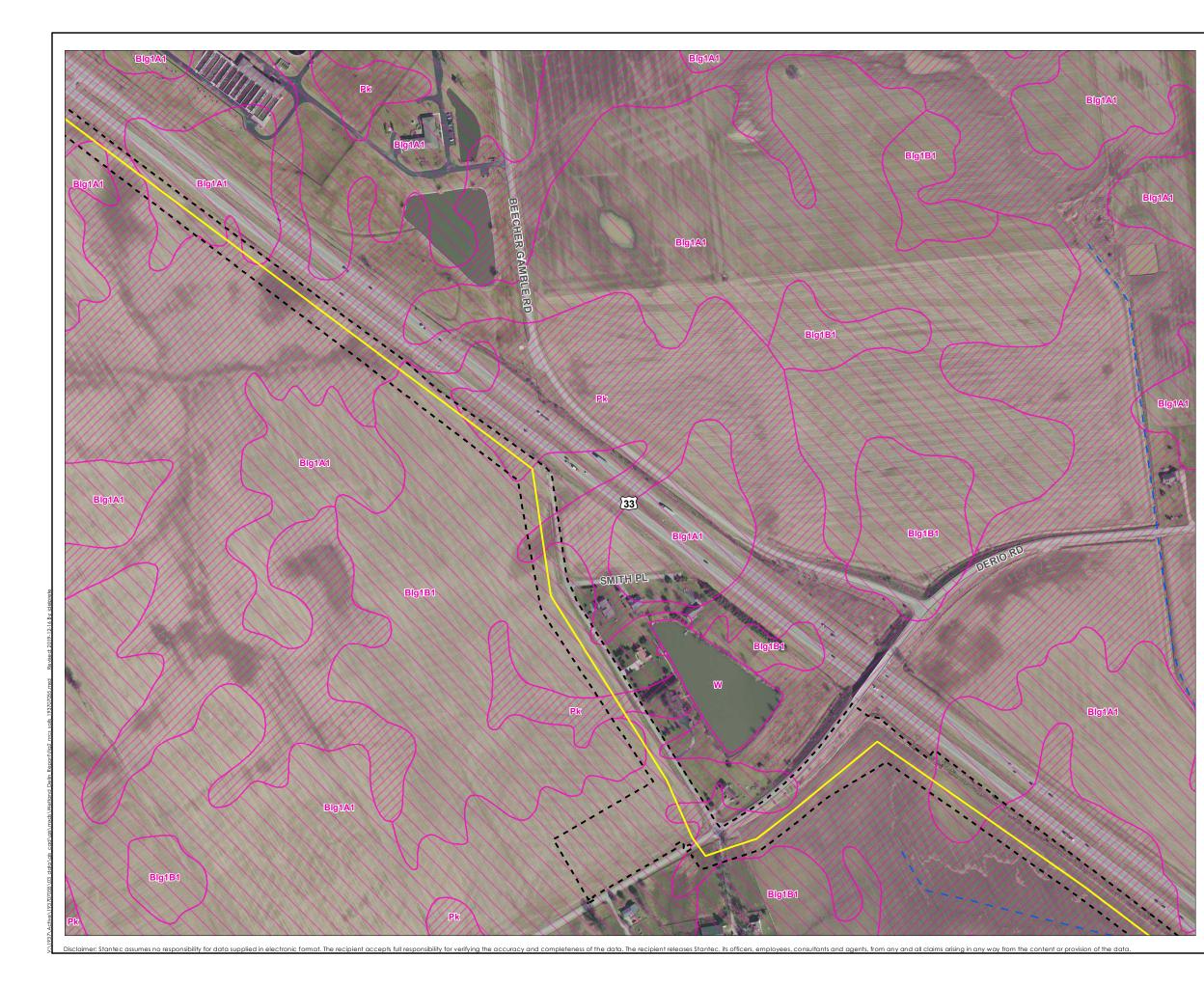


Notes

Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Z. Data Sources Include: Stantec, Columbia Gas, USGS, NRCS, NADS
 3. Orthophotography: 2018 OGRIP









Title NRCS Soil Survey Data and Hydric Ratings

Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation

Project Location

Union County, Ohio

193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

400 0 200 1:4,800 (At original document size of 11x17) Feet



<u>Legend</u>

Survey Corridor V Approximate Proposed Pipeline NRCS Soil Survey Data Hydric Ratings Predominantly Hydric Soil Partially Hydric Soil

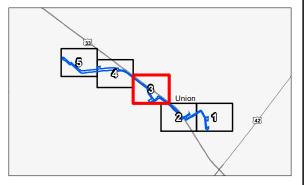
Non-Hydric Soil

National Hydrography Dataset

∼ Perennial Stream

Intermittent Stream

S Waterbody



Notes

Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Data Sources Include: Stantec, Columbia Gas, USGS, NRCS, NADS
 Orthophotography: 2018 OGRIP







Figure No. 2

Title NRCS Soil Survey Data and Hydric Ratings

Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation

Project Location

Union County, Ohio

193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

400 0 200 1:4,800 (At original document size of 11x17) Feet



<u>Legend</u>

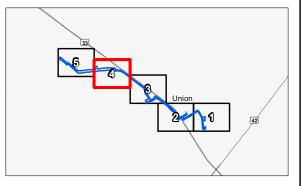
Survey Corridor Approximate Proposed Pipeline NRCS Soil Survey Data Hydric Ratings Predominantly Hydric Soil Partially Hydric Soil

Non-Hydric Soil National Hydrography Dataset

∼ Perennial Stream

Intermittent Stream

S Waterbody



Notes

Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Data Sources Include: Stantec, Columbia Gas, USGS, NRCS, NADS
 Orthophotography: 2018 OGRIP

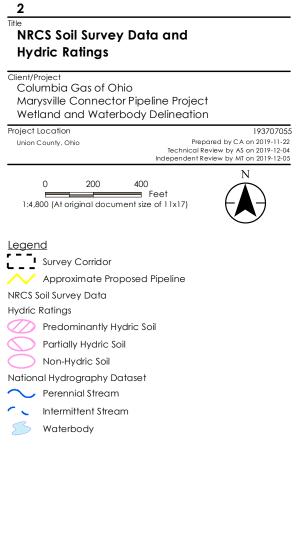


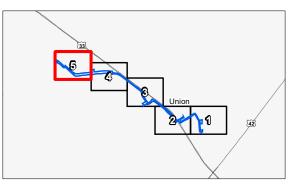
Page 4 of 5



mer: Stante cassumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.







- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Z. Data Sources Include: Stantec, Columbia Gas, USGS, NRCS, NADS
 3. Orthophotography: 2018 OGRIP



A.3 FIGURE 3 – NATIONAL WETLANDS INVENTORY MAP

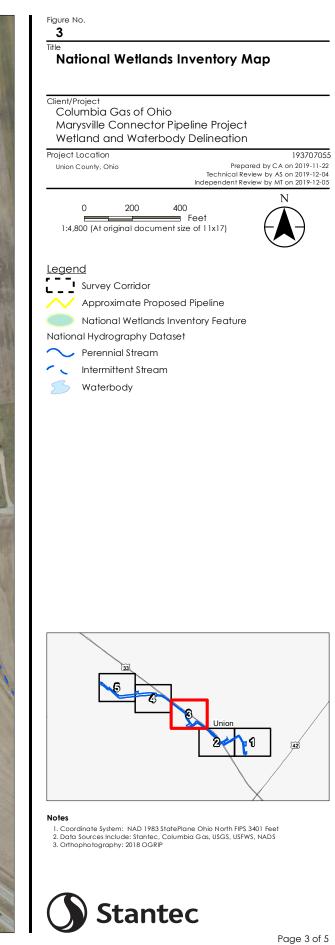






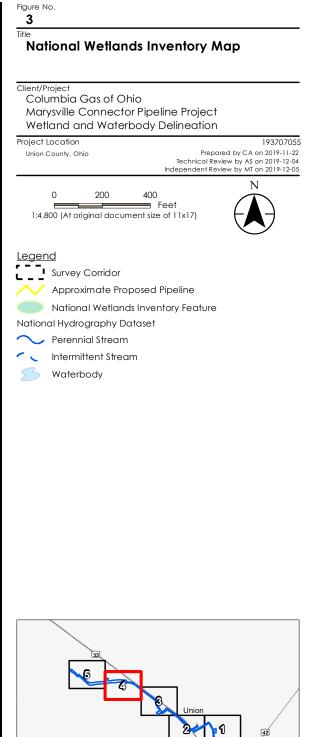
Page 2 of 5

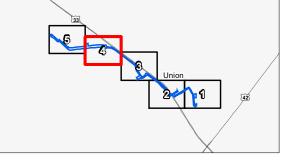












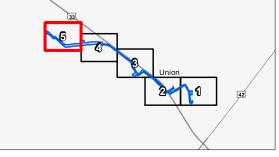
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Z. Data Sources Include: Stantec, Columbia Gas, USGS, USFWS, NADS
 3. Orthophotography: 2018 OGRIP







Figure No. 3 Title National Wetlands Inventory Map Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation 193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05 Project Location Union County, Ohio Ν 400 0 200 Feet 1:4,800 (At original document size of 11x17) <u>Legend</u> Survey Corridor V Approximate Proposed Pipeline National Wetlands Inventory Feature National Hydrography Dataset ∼ Perennial Stream Intermittent Stream S Waterbody

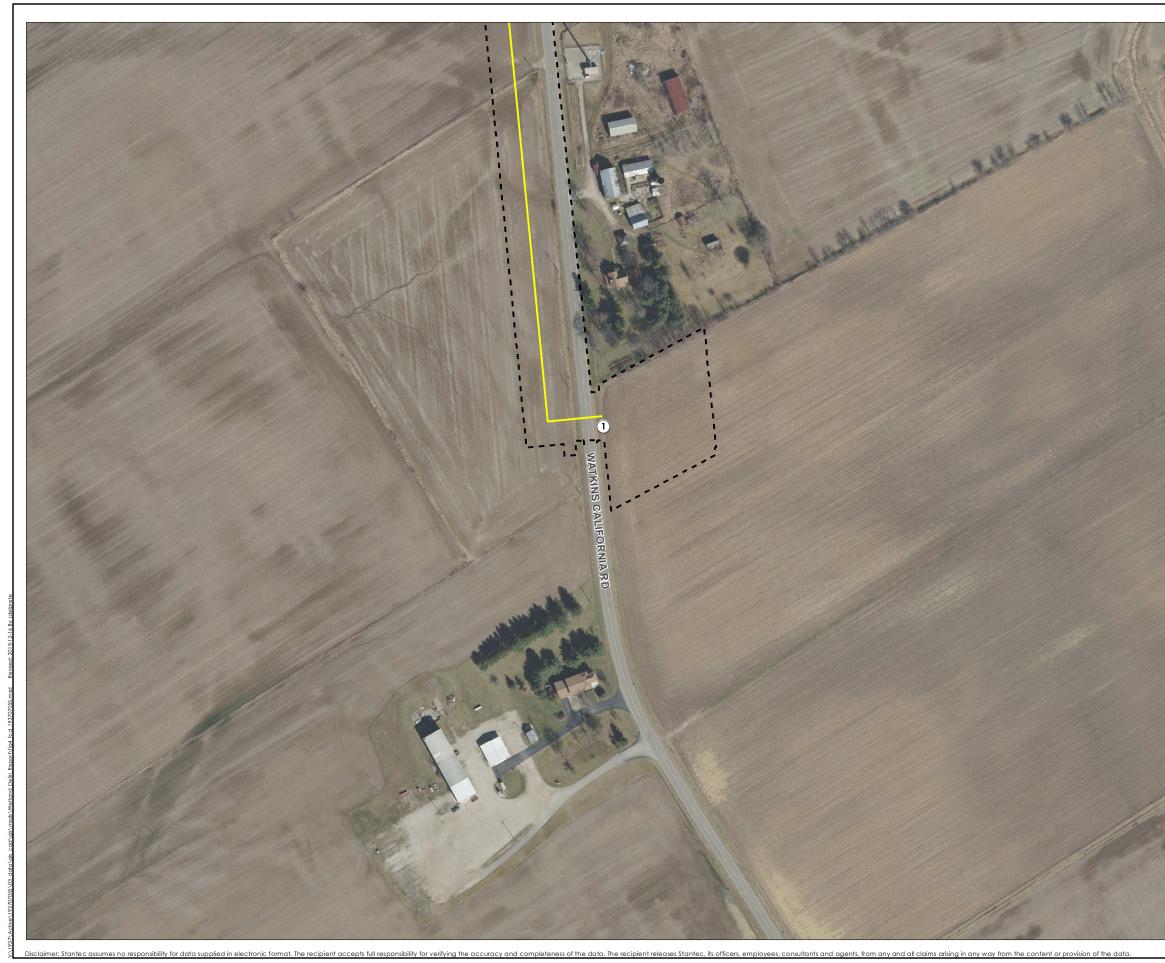


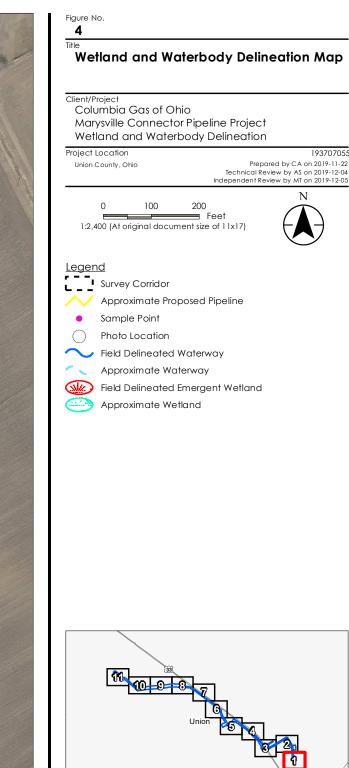
- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Z. Data Sources Include: Stantec, Columbia Gas, USGS, USFWS, NADS
 3. Orthophotography: 2018 OGRIP



A.4 FIGURE 4 – WETLAND AND WATERBODY DELINEATION MAP

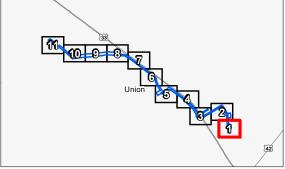








193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

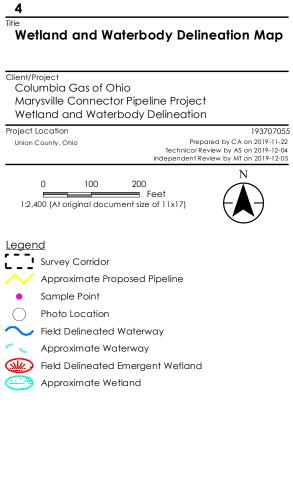


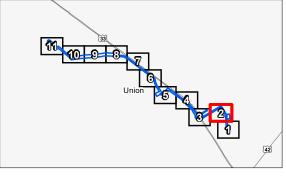
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 Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 Orthophotography: 2018 OGRIP











- 1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 3. Orthophotography: 2018 OGRIP







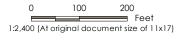
Title

Wetland and Waterbody Delineation Map

Client/Project Columbia Gas of Ohio Marysville Connector Pipeline Project Wetland and Waterbody Delineation Project Location

Union County, Ohio

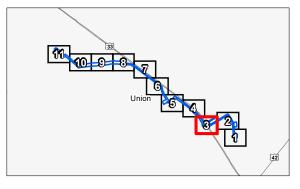
193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05









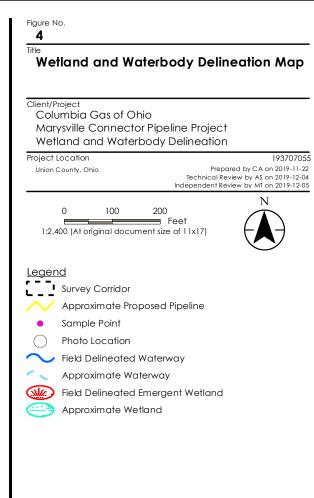


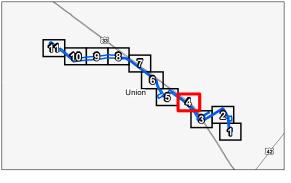
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1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 3. Orthophotography: 2018 OGRIP







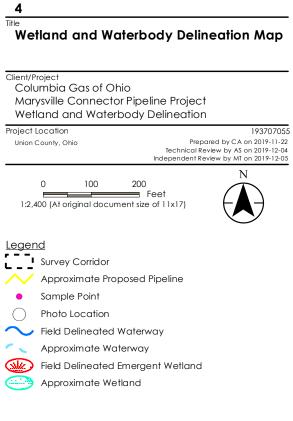


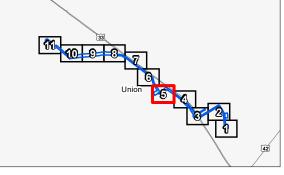
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 Orthophotography: 2018 OGRIP







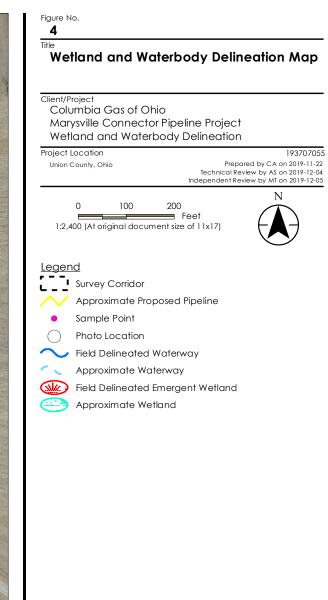


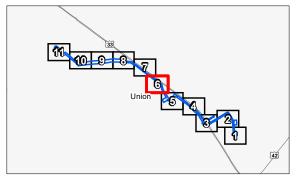


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 2. Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 3. Orthophotography: 2018 OGRIP



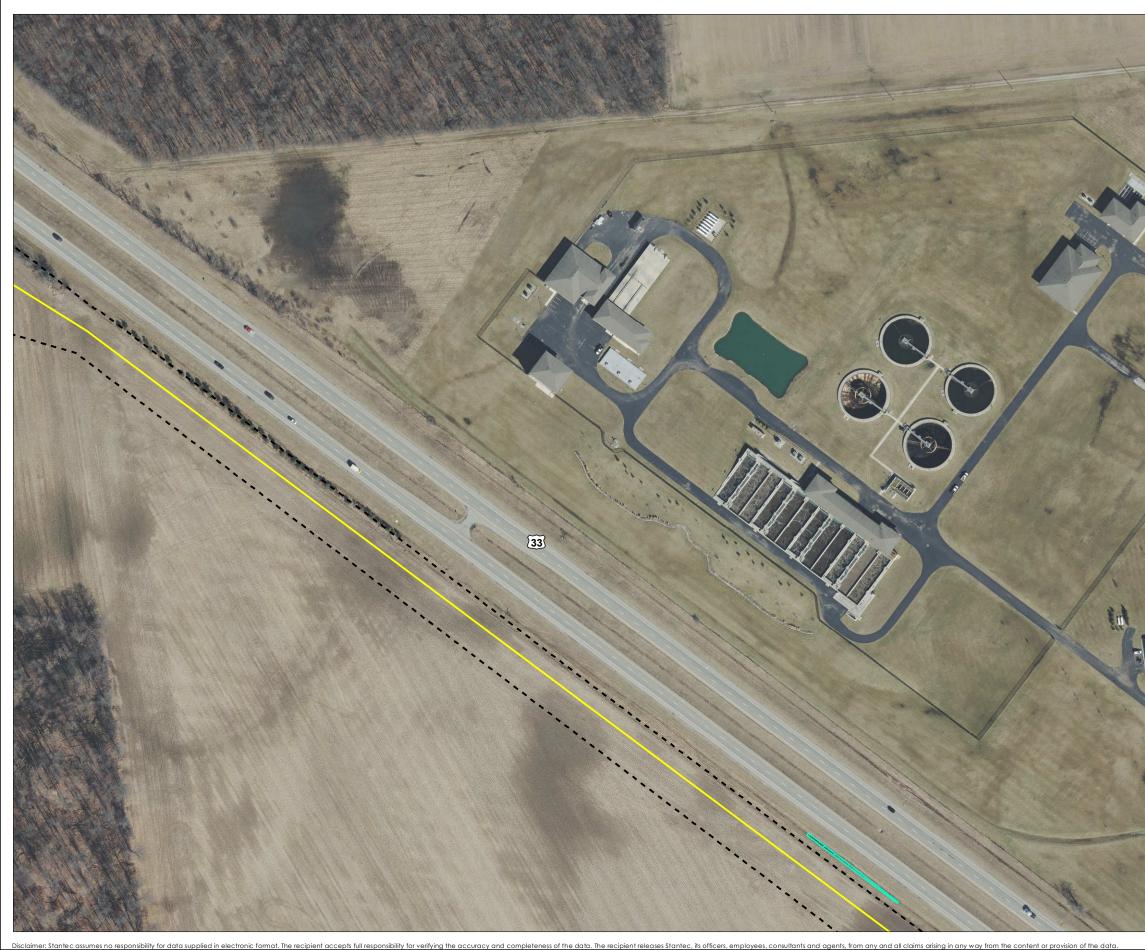




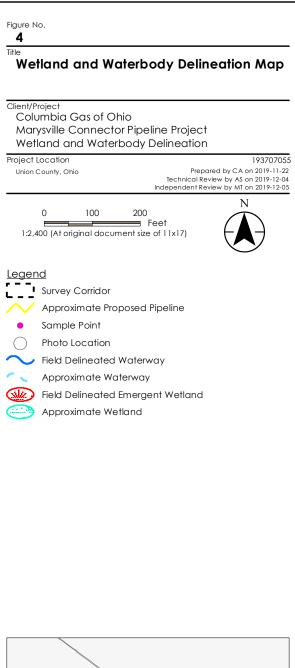


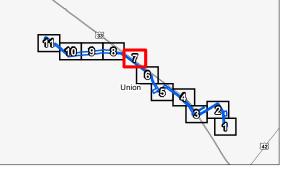
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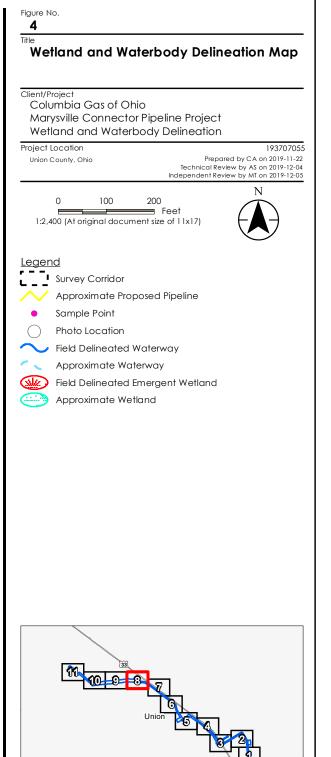


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 Orthophotography: 2018 OGRIP







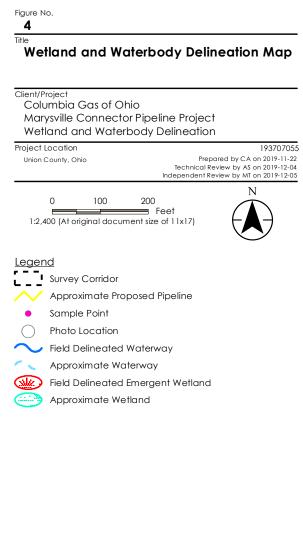


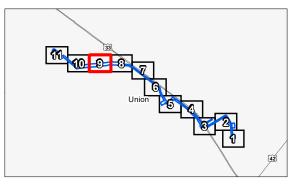
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 3. Orthophotography: 2018 OGRIP









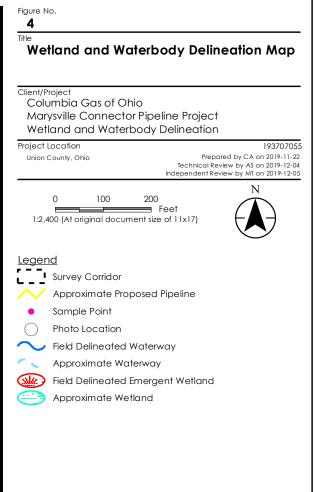


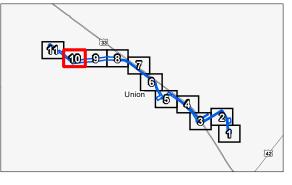
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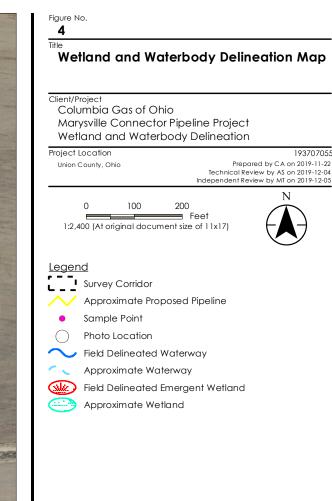


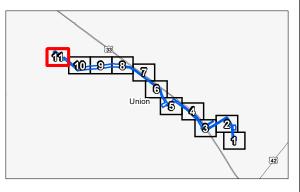


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193707055 Prepared by CA on 2019-11-22 Technical Review by AS on 2019-12-04 Independent Review by MT on 2019-12-05

Feet

Ν

- Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 Data Sources Include: Stantec, Columbia Gas, USGS, NADS
 Orthophotography: 2018 OGRIP



Appendix B DATA FORMS

B.1 WETLAND DETERMINATION FORMS





Midwest Region

	Marysville						Stantec Project #:	193707055		Date:	11/20/19	
Applicant:		Gas of Ohio		I		1.18 CT				County:	Union	
Investigator #1:	· · ·				gator #2:			N1/A		State:	Ohio	
	-	nt silt loam, ground mor	aine, 0-2%				WI/WWI Classification:	N/A		Wetland ID:	Wetland 1	
	Toeslope				al Relief:			D /		Sample Point:		
Slope (%):	0		40.18004		ongitude:					Community ID:		
	<u> </u>	litions on the site ty			,	(If no, expla		Yes	No	Section:	N/A	
Are Vegetation [□]	□ ,Soil □ ,	or Hydrology 🗆 sig	gnificantly	y disturbe	ed?		Are normal circumsta		?	Township:	N/A	
Are Vegetation□ SUMMARY OF F		or Hydrology 🗉 na	aturally pr	oblemati	c?		☑ Yes	NƏ		Range:	N/A Dir:	N/A
Hydrophytic Veg Wetland Hydrolo				☑ Yes☑ Yes				Hydric Soils		Mithin A Motl	□ Yes □ and? □ Yes ■	
Remarks:	ogy Fresent	:		- 163	- 110				pling Point (NO
HYDROLOGY												
Wetland Hydro Primary:		ators (Check here i	if indicato	ors are no	ot presen	t□):			Secondary:			
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves			B6 - Surface So	oil Cracks	
	A2 - High Wa			-	B13 - Aqu					B10 - Drainage		
	A3 - Saturatio				B14 - True					C2 - Dry-Seaso		
	B1 - Water M B2 - Sedimer					ogen Sulfi	de Odor spheres on Living Roots			C8 - Crayfish B	urrows Visible on Aerial Ima	anor
	B2 - Sedimer B3 - Drift Der						educed Iron				Stressed Plants	agery
	B4 - Algal Ma						duction in Tilled Soils			D2 - Geomorph		
	B5 - Iron Dep				C7 - Thin					D5 - FAC-Neutr		
		on Visible on Aerial Im			D9 - Gauç							
	B8 - Sparsely	Vegetated Concave	Surface		Other (Ex	plain in Re	emarks)					
Field Observati Surface Water F Water Table Pre	Present?	☑ Yes □ No	Depth: Depth:		(in.) (in.)			Wetland Hy	drology Pr	esent? □	Yes 🛛 No	
Saturation Prese		☑ Yes □ No ☑ Yes □ No	•		. ,							
Saturation Prese	ent?	Yes	Depth:	0	(in.)				N1/A			
Describe Recorde	ent?		Depth:	0	(in.)	s inspecti	ons), if available:		N/A			
	ent?	Yes	Depth:	0	(in.)	s inspecti	ons), if available:		N/A			
Describe Recorde Remarks: SOILS Map Unit Name:	ent? ed Data (stre	☑ Yes □ No am gauge, monitorin Blg1A1 - Blount sil	Depth: ng well, ae t loam, g	0 rial photo round mo	(in.) s, previou praine, 0-	2% slope	295					
Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip	ent? ed Data (stre : : : :	☑ Yes □ No am gauge, monitorin Blg1A1 - Blount sil	Depth: ng well, ae t loam, g	0 rial photo round mo	(in.) s, previou praine, 0-	2% slope	25 25 D=Depletion, RM=Reduced Matrix, CS=0			re Lining, M=Matrix)		
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Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top	ent? ed Data (stre : : tion (Describe to Bottom	Yes No am gauge, monitorin Big1A1 - Biount sil he depth needed to document the in	Depth: ng well, ae t loam, g	0 rial photo round ma n the absence of Matrix	(in.) s, previou praine, 0-	2% slope	PS ion, D=Depletion, RM=Reduced Matrix, CS= Red(ox Features	ains; Location: PL=Po			
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Describe Recorde Remarks: OILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S "	ent? ed Data (stre stion (Describe to Bottom Depth 2 6 17 20 Soil Field In A1- Histosoi A2 - Histic Ef A3 - Black Hi	Yes □ No am gauge, monitorin Big1A1 - Blount sil he depth needed to document the in Horizon dicators (check he oppedon stic	Loam, g didator or confirm Color 10YR 10YR 	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar 	(in.) s, previou praine, 0- indicators.) (Typ % 100 97 100 100 e not pre S4 - Sand S5 - Sand S6 - Stripl	2% slope e: C=Concentrat 5YR sent □ y Gelged y Redox ped Matrix	es on. D=Depletion, RM=Reduced Matrix, CS= Reduced Matrix, CS= Color (Moist) 4/6): Matrix	ox Features % 3	ains: Location: PL=Po Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M	Location PL atic Soils ¹ Prairie Redox rface anganese Mass	(e.g. clay, sand, silty clay loa silty clay loa clay es	m m
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Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S	ent? ed Data (stre btion (Describe to Bottom Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratified	Yes No am gauge, monitorin Blg1A1 - Blount sil Horizon	Loam, g didator or confirm Color 10YR 10YR 	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar 	(in.) s, previou praine, 0- indicators) (Typ % 100 97 100 100 e not pre S4 - Sand S5 - Sand S6 - Strip F1 - Loan F2 - Loan	2% slope = C=Cencentral 5YR y Gleyed y Redox ped Matrix ny Muck M ny Gleyed	ess Sector (Moist) 4/6 -	ox Features % 3	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL atic Soils ¹ Prairie Redox rface anganese Mass	(e.g. clay, sand, silty clay loa silty clay loa clay es	m m
Describe Recorde Remarks: COILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S " RCS Hydric S	ent? ed Data (stree stion (Describe to Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histic Ef A3 - Black Hi A4 - Hydroge A5 - Stratifiec A10 - 2 cm M	Yes No am gauge, monitorin Blg1A1 - Blount sil he depth needed to document the in Horizon	Depth: g well, ae t loam, g dicator or confirm Color 10YR -	0 rial photo number absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar	(in.) s, previou s, previou	2% slope e: C=Concentral 5YR y Gleyed ly Redox ped Matrix ny Muck M ny Gleyed ted Matrix	es ion, D=Depletion, RM=Reduced Matrix, CS= Reduced Matrix, CS= Color (Moist) 4/6): Matrix (ox Features % 3	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL -	(e.g. clay, sand, silty clay loa silty clay loa clay es	m m
Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S	ent? ed Data (stree stion (Describe to Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histic Ef A3 - Black Hi A4 - Hydroge A5 - Stratifiec A10 - 2 cm M	Yes No am gauge, monitorin Blg1A1 - Blount sil he depth needed to document the in Horizon	Depth: g well, ae t loam, g dicator or confirm Color 10YR -	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar	(in.) s, previou s, previou s, previou s, previou s, previou 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 55 - Sand S5 - Sand S6 - Strip F1 - Loan F3 - Deple F6 - Redc	2% slope e: C=Concentrat 5YR sent □ y Gleyed y Redox ped Matrix y Muck M ny Gleyed sted Matrix x Dark Su	ess lon. D=Depletion, RM=Reduced Matrix, CS= Reduced Matrix, CS= Color (Moist) 4/6): Watrix frace	ox Features % 3	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL -	(e.g. clay, sand, silty clay loa silty clay loa clay es	m m
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Describe Recorde Remarks: COILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S	ent? ed Data (stre bion (Describe to Bottom Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histo Ef A3 - Black Hi A4 - Hydroge A5 - Stratifier A10 - 2 cm M A11 - Deplet A12 - Thick E S1 - Sandy M	Yes No am gauge, monitorin Big1A1 - Blount sil Horizon	Depth: g well, ae t loam, g dicator or confirm Color 10YR -	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 2.5/10Y 4/1 cators ar	(in.) s, previou s, previou s, previou s, previou s, previou s, previou s, previou 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 100 100 100 100 100 10	2% slope e: C=Concentrat 5YR y Gleyed ly Redox y Muck M ny Gleyed eted Matrix ny Dark Su eted Dark Su	es on. D=Depletion. RM=Reduced Matrix, CS= Reduced Matrix, CS= 4/6): Matrix (rface Surface	System 2 System 2	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location PL 	(e.g. clay, sand, silty clay loa silty clay loa clay es urface	m
Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S	ent? ed Data (stre bion (Describe to Bottom Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histo Ef A3 - Black Hi A4 - Hydroge A5 - Stratifier A10 - 2 cm M A11 - Deplet A12 - Thick E S1 - Sandy M	Yes □ No am gauge, monitorin Big1A1 - Blount sil he depth needed to document the in Horizon dicators (check he bipedon stic n Sulfide J Layers luck dB Below Dark Surface bark Surface luck Mineral lcky Peat or Peat	Depth: g well, ae t loam, g dicator or confirm Color 10YR -	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar	(in.) s, previou s, previou s, previou s, previou s, previou s, previou s, previou 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 100 100 100 100 100 10	2% slope e: C=Concentrat 5YR y Gleyed ly Redox y Muck M ny Gleyed eted Matrix ny Dark Su eted Dark Su	es on. D=Depletion. RM=Reduced Matrix, CS= Reduced Matrix, CS= 4/6): Matrix (rface Surface	x Features % 3 <u></u> <u></u> <u>Indicators</u>	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location PL 	(e.g. clay, sand, silty clay loa silty clay loa clay es urface	m
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Describe Recorde Remarks: OILS Map Unit Name: Profile Descrip Top Depth 0 2 6 17 NRCS Hydric S NRCS Hydric S Restrictive Layer	ent? ed Data (stre stion (Describe to Bottom Depth 2 6 17 20 Soil Field In A1- Histosol A2 - Histic E _I A3 - Black Hi A4 - Hydroge A5 - Stratifier A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Yes □ No am gauge, monitorin Big1A1 - Blount sil he depth needed to document the in Horizon dicators (check he bipedon stic n Sulfide J Layers luck dB Below Dark Surface bark Surface luck Mineral lcky Peat or Peat	Depth: g well, ae t loam, g dicator or confirm Color 10YR -	0 rial photo nthe absence of Matrix (Moist) 3/3 2.5/10Y 4/1 cators ar	(in.) s, previou s, previou s, previou s, previou s, previou s, previou s, previou 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 97 100 100 100 100 100 100 100 10	2% slope e: C=Concentrat 5YR y Gleyed ly Redox y Muck M ny Gleyed eted Matrix ny Dark Su eted Dark Su	es on. D=Depletion. RM=Reduced Matrix, CS= Reduced Matrix, CS= 4/6): Matrix (rface Surface	System 2 System 2	Type C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location PL 	(e.g. clay, sand, silty clay loa silty clay loa clay es urface	m

Page 1 of 2



Midwest Region

Page	2	of	2

Project/Site: Marysville Connector Wetland ID: Wetland 1 Sample Point: SP01 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1 ------2. Number of Dominant Species that are OBL, FACW, or FAC: ____(A) ------------3. Total Number of Dominant Species Across All Strata: (B) 4. ___ ___ ------5. ___ ___ ___ ---6. ___ Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) ---___ 7. ___ ___ ___ ---Prevalence Index Worksheet 8. ------------9 Total % Cover of: Multiply by: -----------x 1 = 10 OBL spp. ---Total Cover = 0 FACW spp. x 2 = FAC spp. x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 1. ---UPL spp. x 5= 2. ___ ___ ------3 Total (A) ____(B) ------------4. Prevalence Index = B/A = 5. ---___ 6. ___ ___ ___ ---7. ___ ------___ 8. ---Hydrophytic Vegetation Indicators: ___ 9. ------Yes O No Rapid Test for Hydrophytic Vegetation ------10. □ No Yes Dominance Test is > 50% ------------Total Cover = 0 Yes No Prevalence Index is ≤ 3.0 * Yes No Morphological Adaptations (Explain) * No Herb Stratum (Plot size: 5 ft radius) Yes Problem Hydrophytic Vegetation (Explain) * Typha angustifolia 100 Y OBL 1. * Indicators of hydric soil and wetland hydrology must be 2. -----------present, unless disturbed or problematic. 3. ___ ---___ ---**Definitions of Vegetation Strata:** 4. ------------5. 6 ___ Tree - Woody plants 3 in. (7.6cm) or more in diameter at ___ ___ ___ breast height (DBH), regardless of height. 7. ___ ___ ---___ 8. ---___ ---___ Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 --ft. tall. 10 ---------11 ___ ___ ------12. Herb - All herbaceous (non-woody) plants, regardless of size, --and woody plants less than 3.28 ft. tall. 13. 14. ___ ___ ___ ---Woody Vines - All woody vines greater than 3.28 ft. in height. 15. ------___ ---Total Cover = 100 Woody Vine Stratum (Plot size: 30 ft radius) 1. 2 Hydrophytic Vegetation Present
Ves
No 3. ---___ ___ ___ 4. ------------5. ------Total Cover = 0 Remarks:



WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Marysville Connector Stantec Project #: 193707055 Date: 11/20/19 Applicant: Columbia Gas of Ohio County: Union Investigator #1: Angela Sjollema Investigator #2: Julie Slater State: Ohio Soil Unit: NWI/WWI Classification: N/A Wetland ID: Wetland 1 Blg1A1 - Blount silt loam, ground moraine, 0-2% slopes Landform: Terrace Local Relief: Concave Sample Point: SP02 Datum: WGS 1984 Slope (%): 0 Latitude: 40,18003 Longitude: -83.249511 Community ID: Upland Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) Yes N/A No Section: , Soil[。], or Hydrology[。] Are normal circumstances present? Are Vegetation significantly disturbed? Township: N/A Are Vegetation . Soil∘ , or Hydrology naturally problematic? Yes No Range: N/A N/A Dir SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes 🜼 No Hydric Soils Present? No Yes • Wetland Hydrology Present? · Yes · No Is This Sampling Point Within A Wetland? No Yes Remarks: HYDROLOGY Wetland Hydrology Indicators (Check here if indicators are not present -): Secondary: Primary: A1 - Surface Water B9 - Water-Stained Leaves B6 - Surface Soil Cracks A2 - High Water Table B13 - Aquatic Fauna B10 - Drainage Patterns A3 - Saturation B14 - True Aquatic Plants C2 - Dry-Season Water Table B1 - Water Marks C1 - Hydrogen Sulfide Odor C8 - Crayfish Burrows B2 - Sediment Deposits C3 - Oxidized Rhizospheres on Living Roots C9 - Saturation Visible on Aerial Imagery B3 - Drift Deposits C4 - Presence of Reduced Iron D1 - Stunted or Stressed Plants B4 - Algal Mat or Crust C6 - Recent Iron Reduction in Tilled Soils D2 - Geomorphic Position D5 - FAC-Neutral Test B5 - Iron Deposits C7 - Thin Muck Surface D9 - Gauge or Well Data B7 - Inundation Visible on Aerial Imagery B8 - Sparsely Vegetated Concave Surface Other (Explain in Remarks) Field Observations: Surface Water Present? • Yes • Depth[.] (in.) No Wetland Hydrology Present? Yes No No Water Table Present? 0 Yes • Depth: (in.) Saturation Present? 0 Yes • Depth: (in.) No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: SOILS Map Unit Name: Blg1A1 - Blount silt loam, ground moraine, 0-2% slopes Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix) Bottom Matrix Texture Top Redox Features (e.g. clay, sand, loam) Depth Depth Horizon Color (Moist) % Color (Moist) % Location Туре 10YR 3/4 100 0 20 loam ___ ------___ ---___ ___ ---___ ___ ___ ___ ___ ____ ___ ___ ___ ___ ___ ___ ___ ___ ___ ---___ ___ ___ ___ ___ ---------___ ------------------------___ ___ ___ NRCS Hydric Soil Field Indicators (check here if indicators are not present -): Indicators for Problematic Soils 1 A1- Histosol S4 - Sandy Gleyed Matrix A16 - Coast Prairie Redox A2 - Histic Epipedon S7 - Dark Surface S5 - Sandy Redox A3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface F2 - Loamy Gleyed Matrix A5 - Stratified Layers Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface A12 - Thick Dark Surface . F7 - Depleted Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer ° Yes • No N/A Hydric Soil Present? Type: None Depth: (If Observed) Remarks:



Wetland ID: Wetland 1

Midwest Region

Project/Site: Marysville Connector

Sample Point:	SP02

VEGETATIO		e are non-native spe	cies.)		
Tree Stratum ((Plot size: 30 ft radius)				
	<u>Species Name</u>	<u>% Cover</u>	Dominant	Ind.Status	Dominance Test Worksheet
1.	Ulmus americana	13	Y	FACW	
2.					Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
3.					
4.					Total Number of Dominant Species Across All Strata: 5 (B)
5.					
6.					Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: <u>Multiply by:</u>
10.					OBL spp. x 1 =
	Tota	I Cover = 13			FACW spp. $X 2 =$
					FAC spp. x 3 = FACU spp. x 4 = UPL spp. x 5 =
Sapling/Shrub	Stratum (Plot size: 15 ft radius)				FACU spp. x 4 =
1.	Celtis occidentalis	10	Y	FAC	UPL spp. x 5 =
2.	Fraxinus pennsylvanica	10	Y	FACW	
3.	Lonicera maackii	10	Y	UPL	Total(A)(B)
4.					()
5.					Prevalence Index = B/A =
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					 Yes No Rapid Test for Hydrophytic Vegetation
10.					 Yes No Dominance Test is > 50%
		I Cover = 30			• Yes • No Prevalence Index is $\leq 3.0^{*}$
					 Yes No Morphological Adaptations (Explain) *
Herb Stratum (Plot size: 5 ft radius)				 Yes No Problem Hydrophytic Vegetation (Explain) *
1.	Phalaris arundinacea	90	Y	FACW	
2.					* Indicators of hydric soil and wetland hydrology must be
3.					present, unless disturbed or problematic.
<u> </u>					Definitions of Vegetation Strata:
<u>4.</u> 5.					Deminions of Vegetation Strata.
-					Troo
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
7.					
8.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
9.					ft. tall.
10.					
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.
13.					
14.					
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
	Tota	I Cover = 90			
Woody Vine St	tratum (Plot size: 30 ft radius)				
1.					
2.					
3.					Hydrophytic Vegetation Present · Yes · No
4.					J
5.					
	Tota	l Cover = 0			



Midwest Region

Project/Site: Applicant:	Marysville Columbia C	Connector Gas of Ohio					Stantec Project #:	193707055		Date: County:	11/20/19 Union
Investigator #1:	: Angela Sjo	llema		Investi	igator #2:	Julie Sla	iter			State:	Ohio
Soil Unit:	Pk - Pewamo	silty clay loam, 0 to 1 p	ercent slope	es	0	Ν	WI/WWI Classification	: N/A		Wetland ID:	Wetland 1
Landform:	Toeslope				cal Relief:	Concave	e			Sample Point:	SP03
Slope (%):	0	Latitude	e: 40.18703	L	ongitude:	-83.26002		Datum:	WGS 1984	Community ID:	
Are climatic/hvo	drologic cond	ditions on the site	typical for		<u> </u>		in in remarks)	✓ Yes □	No	Section:	N/A
		or Hydrology					Are normal circumsta	ances present?	?	Township:	N/A
		or Hydrology n					Yes	NÐ		Range:	N/A Dir: N/A
SUMMARY OF		or rijarologj - r	atarany pi	obioinat						i tango.	
Hydrophytic Ve		cont?		Yes	s 🗆 No			Hydric Soils	Procont?		Yes
Wetland Hydrol					s 🗆 No					Mithin A Moth	and? • Yes • No
Remarks:	logy Fresent	<u>f</u>		- 165							and? - res - no
HYDROLOGY											
		ators (Check here	if indicato	ors are n	ot presen	t□):					
Primary:									Secondary:		
	A1 - Surface					er-Stained				B6 - Surface So	
	A2 - High Wa					atic Fauna				B10 - Drainage	
	A3 - Saturatio B1 - Water N				B14 - True	e Aquatic I ogen Sulfi				C2 - Dry-Seaso C8 - Cravfish B	
	B1 - Water W B2 - Sedimer						spheres on Living Roots				Visible on Aerial Imagery
	B3 - Drift Der			_			duced Iron				Stressed Plants
	B4 - Algal Ma						duction in Tilled Soils			D2 - Geomorph	
	B5 - Iron Dep				C7 - Thin					D5 - FAC-Neutr	
	B7 - Inundati	on Visible on Aerial Ir				ge or Well					
	B8 - Sparsely	Vegetated Concave	Surface		Other (Ex	plain in Re	marks)				
Field Observat Surface Water I Water Table Pro Saturation Pres	Present? resent?	□ Yes ☑ No □ Yes ☑ No □ Yes ☑ No	Depth: Depth: Depth:		(in.) (in.) (in.)			Wetland Hy	drology Pr	esent? 🛛	Yes 🛛 No
					()						
Describe Record											
2 3001150 1 00010	ied Data (stre	am gauge, monitori	ng well, ae	rial photo	os, previou	s inspecti	ons), if available:		N/A		
Remarks:	ied Data (stre	am gauge, monitori	ng well, ae	rial photo	os, previou	s inspecti	ons), if available:		N/A		
	ied Data (stre	am gauge, monitori	ng well, ae	rial photo	os, previou	s inspecti	ons), if available:		N/A		
Remarks:	ied Data (stre	am gauge, monitori	ng well, ae	rial photo	os, previou	s inspecti	ons), if available:		N/A		
Remarks:	,					·	ons), if available:		N/A		
Remarks: SOILS Map Unit Name	9:	Pk - Pewamo silty	clay loan	n, 0 to 1	percent s	lopes		·Covered/Coated Sand Gra		re Lining, M=Matrix)	
Remarks: SOILS Map Unit Name Profile Descrip	e: ption (Describe to	Pk - Pewamo silty	clay loan	n, 0 to 1	percent s	lopes	on, D=Depletion, RM=Reduced Matrix, CS=			re Lining, M=Matrix)	Texture
Remarks: SOILS Map Unit Name Profile Descrip Top	e: ption (Describe to Bottom	Pk - Pewamo silty	/ clay loan	n, 0 to 1 In the absence of Matrix	percent s	lopes	on, D=Depletion, RM=Reduced Matrix, CS= Red	ox Features	ins; Location: PL=Pc		Texture (e.g. clay, sand, loam
Remarks: SOILS Map Unit Name Profile Descrip Top Depth	e: ption _{(Describe to} Bottom Depth	Pk - Pewamo silty the depth needed to document the Horizon	r clay loan indicator or confirm Color	n, 0 to 1 n the absence of Matrix (Moist)	percent s	iopes e: C=Concentrat	on. D=Depletion. RM=Reduced Matrix. CS= Red Color (Moist)	ox Features %	ins; Location: PL=Pc	Location	(e.g. clay, sand, loam
Remarks: SOILS Map Unit Name Profile Descrip Top	e: ption (Describe to Bottom	Pk - Pewamo silty	/ clay loan	n, 0 to 1 In the absence of Matrix	percent s	iopes e: C=Concentrat	on. D=Depletion. RM=Reduced Matrix. CS= Red Color (Moist) 5/8	ox Features % 2	ins; Location: PL=Pc Type C	Location PL	(e.g. clay, sand, loam) silty clay loam
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0	e: ption (Describe to Bottom Depth 3	Pk - Pewamo silty the depth needed to document the Horizon 1	r clay loan indicator or confirm Color 10YR	n, 0 to 1 In the absence of Matrix (Moist) 3/2	percent s findicators.) (Typ % 95	EC=Concentrat	on, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 5/8 4/6	ox Features % 2 3	ins; Location: PL=Pc Type C C	Location PL M	(e.g. clay, sand, loam) silty clay loam silty clay loam
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Midwest Region

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Project/Site: Marysville Connector Wetland ID: Wetland 1 Sample Point: SP03 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1 ------2. Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) ------------3. Total Number of Dominant Species Across All Strata: 2 (B) 4. ---___ ------5. ___ ___ ___ ---6. ___ Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) ___ ___ 7. ___ ___ ___ ---Prevalence Index Worksheet 8. ------------9 Total % Cover of: Multiply by: -----------x 1 = 10 OBL spp. ---Total Cover = 0 FACW spp. x 2 = FAC spp. x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 1. ---UPL spp. x 5= 2. ___ ___ ------3 Total (A) ____(B) ------------4. Prevalence Index = B/A = 5. ---___ 6. ___ ___ ___ ---7. ___ ------___ 8. ---Hydrophytic Vegetation Indicators: 9. ------Yes O No Rapid Test for Hydrophytic Vegetation ------10. □ No Yes Dominance Test is > 50% ------------Total Cover = 0 Yes No Prevalence Index is ≤ 3.0 * Yes No Morphological Adaptations (Explain) * No Herb Stratum (Plot size: 5 ft radius) Yes Problem Hydrophytic Vegetation (Explain) * 80 Y FACW Phalaris arundinacea 1 * Indicators of hydric soil and wetland hydrology must be 2. Typha angustifolia 20 Y OBL present, unless disturbed or problematic. 3. ___ ------___ **Definitions of Vegetation Strata:** 4. ------------5. 6 ___ Tree - Woody plants 3 in. (7.6cm) or more in diameter at ___ ___ --breast height (DBH), regardless of height. 7. ___ ___ ---___ 8. ---___ ---___ Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 --ft. tall. 10 ---------11 ___ ___ ------12. Herb - All herbaceous (non-woody) plants, regardless of size, --and woody plants less than 3.28 ft. tall. 13. 14. ___ ___ ------Woody Vines - All woody vines greater than 3.28 ft. in height. 15. ------___ ---Total Cover = 100 Woody Vine Stratum (Plot size: 30 ft radius) 1. 2. Hydrophytic Vegetation Present
Ves
No 3. ---___ ___ ___ 4. ------------5. ------Total Cover = 0 Remarks:



WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Applicant:	Marysville Columbia						Stantec Project #:	193707055	5	Date: County:	11/20/19 Union
Investigator #1				Investi	igator #2:	Julie Sla	ater			State:	Ohio
Soil Unit:	<u> </u>	silty clay loam, 0 to	o 1 percent s		gate: // 2.		WI/WWI Classification:	N/A		Wetland ID:	Wetland 1
Landform: Slope (%):	Terrace 0		de: 40.18707	Loc	al Relief: ongitude:	Linear			: WGS 1984	Sample Point: Community ID:	SP04
		ditions on the site						• Yes •		Section:	N/A
,	Ū		71			(ii no, expla	,		No		
Are Vegetation Are Vegetation			significantly pr				Are normal circumstat	No No	. <u>ſ</u>	Township: Range:	N/A N/A Dir: N/A
SUMMARY OF		orrigatology	natarany p	obioinat						1 tangoi	
Hydrophytic Ve		sont?		 Yes 	No			Hydric Soils	Present?		∘ Yes ∘ N
Wetland Hydrol				• Yes						Within A Wetla	
Remarks:	0,	vegetation and	soil	163							
IYDROLOGY											
Wetland Hydr Primary	•••	ators (Check her	e if indicato	ors are n	ot presen	t.):			Secondary:		
<u>r ninary</u>	A1 - Surface	Water		0	B9 - Wate	er-Stained	Leaves		<u>secondary.</u>	B6 - Surface Sc	oil Cracks
•	A2 - High Wa				B13 - Aqu					B10 - Drainage	
	A3 - Saturatio			0	B14 - True				•	C2 - Dry-Seaso	
0	B1 - Water M			0	C1 - Hydr				0	C8 - Crayfish B	
0	B2 - Sedimer	nt Deposits		ē			spheres on Living Roots		ø		Visible on Aerial Image
0	B3 - Drift Dep				C4 - Pres	ence of Re	educed Iron		0		Stressed Plants
•	B4 - Algal Ma			ē			duction in Tilled Soils		•	D2 - Geomorph	
0	B5 - Iron Dep			0	C7 - Thin				8	D5 - FAC-Neutr	ral Test
•		on Visible on Aerial			D9 - Gaug						
0	B8 - Sparsely	Vegetated Concav	e Surface	•	Other (Ex	plain in Re	emarks)				
		eam gauge, monito	oring well, ae	erial photo	s, previou	s inspecti	ons), if available:		N/A		
SOILS	× ×					·	ons), if available:		N/A		
SOILS Map Unit Name	e:	Pk - Pewamo sil	ty clay loan	n, 0 to 1	percent s	lopes					
	e: ption (Describe to t	Pk - Pewamo sil	ty clay loan	n, O to 1 n the absence of	percent s	lopes	ion, D=Depletion, RM=Reduced Matrix, CS=CC			vre Lining, M=Matrix)	Toyturo
SOILS Map Unit Name Profile Descrip Top	e: ption (Describe to 1 Bottom	Pk - Pewamo sil	ty clay loan	n, 0 to 1 In the absence of Matrix	percent s	lopes	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc	ox Features	ains; Location: PL=Pc		Texture
SOILS Map Unit Name Profile Descrij Top Depth	e: ption _{(Describe to 1} Bottom Depth	Pk - Pewamo sil the depth needed to document the Horizon	ty clay loan he indicator or confirm Color	n, 0 to 1 n the absence of Matrix (Moist)	percent s findicators.) (Typ	lopes e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist)	ox Features %	ains; Location: PL=Pc	Location	(e.g. clay, sand, loa
SOILS Map Unit Name Profile Descrip Top	e: ption (Describe to 1 Bottom	Pk - Pewamo sil	ty clay loan	n, 0 to 1 In the absence of Matrix	percent s	lopes	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc	ox Features	ains; Location: PL=Pc		
SOILS Map Unit Name Profile Descrip Top Depth	e: ption _{(Describe to 1} Bottom Depth	Pk - Pewamo sil the depth needed to document the Horizon	ty clay loan he indicator or confirm Color	n, 0 to 1 n the absence of Matrix (Moist)	percent s findicators.) (Typ	lopes e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist)	ox Features %	ains; Location: PL=Pc	Location	(e.g. clay, sand, loa
OILS Map Unit Name Profile Descrij Top Depth 0	e: ption (Describe to 1 Bottom Depth 20	Pk - Pewamo sil the depth needed to document the Horizon 1	ty clay loan he indicator or confirm Color 10YR	n, 0 to 1 n the absence of Matrix (Moist) 3/2	percent s findicators.) (Typ % 100	C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	ox Features % 	ains: Location: PL=Po	Location 	(e.g. clay, sand, loa silty clay loam
OILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Bottom Depth 20 	Pk - Pewamo sil the depth needed to document the Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 n the absence of Matrix (Moist) 3/2 	percent s findicators.) (Typ % 100 	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ains; Location: PL=Po Type 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Bottom Depth 20 	Pk - Pewamo sil the depth needed to document the Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 n the absence of Matrix (Moist) 3/2 	percent s findicators.) (Typ % 100 	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	Seatures %	ains: Location: PL=Po Type 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Bottom Depth 20 	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 nthe absence of Matrix (Moist) 3/2 	percent s findicators.) (Typ % 100	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ains: Location: PL=Po Type 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Bottom Depth 20 	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 nthe absence of Matrix (Moist) 3/2 	percent s findicators.) (Typ % 100	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ains: Location: PL=Pc 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 	Pk - Pewamo sili the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s indicators.) (Typ % 100	e:C=Concentra e:C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ains; Location: PL=Pc Type 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s indicators.) (Typ % 100	e:C=Concentra e:C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ains; Location: PL=Po Type 	Location 	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s indicators.) (Typ % 100	lopes e: C=Concentra sent - ty Gleyed	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) -	x Features % 	ains: Location: PL=Pc s for Problem A16 - Coast	Location Prairie Redox	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Eg	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s indicators.) (Typ % 100 re not pre S4 - Sand S5 - Sand	lopes 	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist) -	x Features % 	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St	Location	(e.g. clay, sand, loa silty clay loam
OILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s % 100 S4 - Sand S6 - Strip	lopes er C=Concentra sent y Gleyed y Redox ped Matrix	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix	x Features % 	ains: Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark SI F12 - Iron-M	Location	(e.g. clay, sand, loa silty clay loam
OILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge	Pk - Pewamo sil The depth needed to document the Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s findicators.) (Typ % 100 S4 - Sand S6 - Strip F1 - Loam	lopes e: C=Concentra e: C=Co	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loa silty clay loam
OILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histics A3 - Black Hi A4 - Hydroge A5 - Stratified	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR 	n, 0 to 1 the absence of Matrix (Moist) 3/2 	percent s indicators.) (Typ % 100 re not pre S4 - Sand S5 - Sand S5 - Sand S6 - Stripp F1 - Loam F2 - Loam	lopes e: C=Concentration e: C=Concentration	ion, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist)): Matrix ineral Matrix	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black H A4 - Hydroge A5 - Stratifier A10 - 2 cm M	Pk - Pewamo sili the depth needed to document th Horizon 1	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 	Percent s % 100 -	lopes e: C=Concentration -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete	Pk - Pewamo sil Pk - Pewamo sil Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 	Percent s % 100 -	lopes e: C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix c rface	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loa silty clay loam
COILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratifice A10 - 2 cm M A11 - Deplete A12 - Thick D	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist) -	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loa silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features % 	ains; Location: PL=Po Type s for Problem A16 - Coast S7 - Dark S1 F12 - Iron-M TF12 - Very Other (Expla	Location	(e.g. clay, sand, loa silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric ° ° ° ° ° ° ° ° ° ° ° ° °	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Er A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features % 	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	(e.g. clay, sand, loa silty clay loam
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric ° ° ° ° ° ° ° ° ° ° ° ° °	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 -	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features %	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	e present, unless disturbed or proble
SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric ° ° ° ° ° ° ° ° ° ° ° ° °	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 -	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features %	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	e present, unless disturbed or proble
OILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric NRCS Hydric Restrictive Layer If Observed)	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 -	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features %	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	e present, unless disturbed or proble
OILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric NRCS Hydric Restrictive Layer if Observed)	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 -	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features %	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	e present, unless disturbed or proble
OILS Map Unit Name rofile Descrip Top Depth 0 NRCS Hydric * * * * * * * * * * * * *	e: ption (Describe to 1 Depth 20 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge A5 - Stratified A10 - 2 cm M A11 - Deplete A12 - Thick E S1 - Sandy M S3 - 5 cm Mu	Pk - Pewamo sil the depth needed to document th Horizon 1 	ty clay loan he indicator or confirm Color 10YR here if indi	n, 0 to 1 the absence of Matrix (Moist) 3/2 -	Percent s % 100 -	lopes e C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist)): Matrix ineral Matrix < fface Surface sions	x Features %	ains; Location: PL=Pc Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	e present, unless disturbed or proble

Page 1 of 2



Midwest Region

Project/Site:	Marysville Connector					Wetland ID: Wetland 1 Sample Point: SP04
						· ·
VEGETATION	(Species identified in all upper	rcase are non-nativ	ve speci	ies.)		
Tree Stratum (PI	ot size: 30 ft radius)					
	<u>Species Name</u>	<u> </u>	% Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.						
2.						Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
3.						
4.						Total Number of Dominant Species Across All Strata: 1 (B)
5.						
6.						Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.						OBL spp. 0 $x = 0$
		Fotal Cover =	0			FACW spp. 0 $x^2 = 0$
			U			FAC spp. 0 x 3 = 0
Sanling/Shrub St	ratum (Plot size: 15 ft radius)					FACU spp. 100 $x 4 = 400$
1.						UPL spp. $0 \times 5 = 0$
2.						
3.						Total 100 (A) 400 (B)
4.						
						Prevalence Index = B/A = 4.000
<u> </u>						
7.						
8.						Hydrophytic Vocatation Indicatory
<u> </u>						Hydrophytic Vegetation Indicators:
						 Yes No Rapid Test for Hydrophytic Vegetation
10.		Tatal Cavar -				 Yes No Dominance Test is > 50%
		Fotal Cover =	0			• Yes • No Prevalence Index is ≤ 3.0 *
						 Yes No Morphological Adaptations (Explain) *
	ot size: 5 ft radius)					 Yes No Problem Hydrophytic Vegetation (Explain) *
1.	Setaria faberi		100	Y	FACU	* Indicators of hydric soil and wetland hydrology must be
2.						present, unless disturbed or problematic.
3.						
4.						Definitions of Vegetation Strata:
5.						
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at
7.					-	breast height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.						ft. tall.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
		Fotal Cover =	100			
			100			
Moody Vine Street	tum (Plot cizo: 20 ft radius)					
	tum (Plot size: 30 ft radius)					
1. 2.						
						Hudrophytic Vegetation Present Vegetation
3.						Hydrophytic Vegetation Present • Yes • No
4.						
5.						
Damai		Fotal Cover =	0			
Remarks:						



Midwest Region

Investigator #1: Multiple Keams Investigator #2: Chaile Alen State: Ohio State: Ohio Sample Pairs NA Dir. NA Virtual Mythologic Indicators (Check here if indicators are not present? : Yes in No Test in No Sample Pairs Sample Pairs <td< th=""><th>Project/Site:</th><th>Marysville (</th><th></th><th></th><th></th><th></th><th></th><th>Stantec Project #:</th><th>193707055</th><th>)</th><th>Date:</th><th>11/20/19</th></td<>	Project/Site:	Marysville (Stantec Project #:	193707055)	Date:	11/20/19
Soft Unit BytA1 - Board and Local Relia Concave NWWW Classification: N/A Wetland D:: Wetland 2: starser Sinpe (%) 1 Latitude : stars Doallin: With the starset of the time of year of the starset of anomal of concave Datum: WS 198 Sommality: DPEMS Sinpe (%) 1 Latitude : starse Local Relia C. Concave Datum: WS 198 Sommality: DPEMS Sommality: DPEMS Sinpe (%) 1 Latitude : starse Latitude : starse Pression Townsity: NA Weteraid D: W	Applicant:						ol				County:	Union
Landform: Depression the late latitude: severe Local Relief: Concave and the late latitude: severe Relief and Relief Concave and the late latitude: severe Relief and Relief Concave and the late latitude: severe Relief Relie	J					igator #2:						
Single (%): 1 Latitude: Angle (%): 0 Data:::::::::::::::::::::::::::::::::::				aine, 0-2%					N/A			
Are climationly drologic conditions on the site typical for this time of year? is very lengtation? is												
Are normal circumstances present? Township: NA Township: NA VMMAPY OF FINDINGS "Yes No "Yes No "No No No </td <td>Slope (%):</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Community ID:</td> <td>PEM</td>	Slope (%):										Community ID:	PEM
Are Vegetation : Solid 2, or Hydrology 2 naturally problemate? 4 Yes No Range: NA Dir. NA Hydrophytic Vegetation Present? 1 Yes No Hydrophytic Vegetation Present? 1 Yes No Hydrophytic Vegetation Present? 1 Yes No Remarks: ************************************							(If no, expl	ain in remarks)	☑ Yes □	No	Section:	N/A
UMMARY OF FINDINGS Hydrophytic Vogetation Present? Pres No We in No Markets We in No Markets Surface Soil Cracks Colspan="2">Soin face Soil Cracks Colspan="2">Soin face Soil Cracks Colspan="2">Soin face Soil Cracks Colspan= 2 Colspan=	Are Vegetation [□]	□ , Soil □ ,	or Hydrology D sig	gnificantly	/ disturb	ed?			nces present	?	Township:	N/A
Hydro Prise Log Present? Yes ▷ No Hydric Soils Present? Yes ▷ No Is This Sampling Point Within A Watand? Yes ▷ No Is This Sampling Point Within A Watand? Yes ▷ No Is This Sampling Point Within A Watand? Yes ▷ No Is This Sampling Point Within A Watand? Yes ▷ No No Is This Sampling Point Within A Watand? Yes ▷ No No Is This Sampling Point Within A Watand? Yes ▷ No No Is This Sampling Point Within A Watand? Yes ▷ No No Is This Sampling Point Within A Watand? Yes ▷ No N	Are Vegetation	□ , Soil □ ,	or Hydrology na	aturally pr	oblemat	ic?		Yes	NÐ		Range:	N/A Dir: N/A
Wetaan Hydrology Present? * Yes No Is This Sampling Point Within A Wetland? * Yes * No VDROLOGY Water Aller Sampling Point Within A Wetland? * Yes * No Be-Surface Sall Cracks Be	SUMMARY OF	FINDINGS										
Wetaan Hydrology Present? * Yes No Is This Sampling Point Within A Wetland? * Yes * No VDROLOGY Water Aller Sampling Point Within A Wetland? * Yes * No Be-Surface Sall Cracks Be	Hydrophytic Ver	getation Pres	sent?		Yes	i 🗆 No)		Hydric Soils	Present?		Yes
Remarks: Striction of the strict of the					Yes	No 🗉 No)		Is This Sam	pling Point '	Within A Wetla	and? • Yes • No
Primacy Secondary Secondary 0 A 1- Sufface Marks 0 B 9- Water-Stande Leaves 0 B 5- Sufface Soil Cracks B 10- Oranlage Patterns 0 C 2- CraySeson Water Table C 3- CraySeson Water Table C	Remarks:											
 At - Surface Water B - Value - Standauge - S	-		ators (Check here i	if indicato	ors are n	ot presen	nt 🗆):					
0 A2. High Water Table 0 B13 - Aguato Fauna 0 B10 - Dranage Patterns 0 A3. Saturation Number Marks 0 C1. Hytrogen Sulfide Odor 0 C2. CorySeason Water Table 0 B3. Onto Deposits 0 C1. Hytrogen Sulfide Odor 0 C2. CorySeason Water Table 0 B3. Onto Deposits 0 C4. Presence of Reduced Ion 0 C3. Saturation Visible on Aerial Imagery 0 B7. Incurdation Visible on Aerial Imagery 0 O. Centropic Deposits 0 D1. Saturation Origination Startation Visible on Aerial Imagery 0 O. Centropic Deposits 0 D2. Seconorphic Posterion D3. FAC-Neutrat Test Startation Visible on Aerial Imagery 0 O. Origo Saturation Visible on Aerial Imagery D3. Saturation Present? Yes No Startation Present? 0 Yes No Depth: (n.) Westand Pythology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A NA Remarks: Botom Depth: (n.) Ves No Depth Dol 1 10/YK					_		<u>.</u>					
 A3 - Sauration B14 - The Aquatic Plants C2 - Dy-Season Water Table C3 - oddizad Rhizospheres on Living Roots C4 - Dysone Read Read Continue Table C5 - Sauration Value Table C5 - FAC-Neutral Test D5 - FAC-Neutral Test No Statistion Present? Yes No Depth No												
○ B1 · Water Marks ○ C1 · Hydrogen Sulfide Odor ○ C3 · Oxid/28 Odor ○ B3 · Diff Deposits ○ C3 · Oxid/28 Odor ○ Selection Selection ○ Selection ○ Selection ○ Selection Selectio												
^a B2 - Sediment Deposits ^c C3 - Gaidzed Rhizospheres on Living Roots ^a B3 - Drift Deposits ^c C4 - Presence of Reduced Ion in Tilled Solis ^c C4 - Statement Construction ^c C4 - Statement Constructin Struction												
□ B4 - Agga Mat or Crust □ C6 - Recont from Reduction in Titled Soits □ D2 - Geomorphic Position □ D2 - FAC-Neutral Test □ B7 - Inundation Visible on Aerial Imagery □ D6 - FAC-Neutral Test □ D2 - Geomorphic Position Unit Name Unit Name Unit Name Unit Name Unit Name Depth: (n, n) Unit Name Depth Unit Name Depth Matrix Redox Features Color (Moist) % Top Position Color (Moist) % Top Name Color (Moist) % Top Name Color (Moist) % Top Name Color (Moist) % Top Nam Color (Moist) % To		B2 - Sedimer	nt Deposits			C3 - Oxid	lized Rhizo	spheres on Living Roots			C9 - Saturation	Visible on Aerial Imagery
B5 b5 - D5-FAC-Neutral Test B5 - D5-SPAC-Neutral Image D-Gauge Veli Data B7 - D5-SPAC-Neutral Image D-Gauge Veli Data B65 - D5-SPAC-Neutral Image D-Gauge Veli Data Sufface Water Fresent? - Yes No Depth: (n.) Water Table Present? - Yes No Depth: (n.) Saturation Present? - Yes No Depth: (n.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: N/A Profile Description Devolate to stage week to use to use to stage of the demar of learner of learner of the demar of learner												
^o B ² - Fundation Visible on Aerial Imagery ^o D ² - Gauge or Weill Data ^o D ² - Gauge or Weillow Or												
B + Sparsely Vegetated Concave Surface Other (Explain in Remarks) Field Observations: Surface Water Present? • Yes • No Depth: (in.) Saturation Present? • Yes • No Depth: (in.) Saturation Present? • Yes • No Depth: (in.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Remarks: NA Post Bg11 - Blount sitt loam, ground moraine, 0-2% slopes Profile Description Mark Color (Moist) % Type Location (e.g. clay, sand, loan 0 10 10 10 2 10YR 4/2 90 5YR 5/8 10 C M clay, loan 10 16 2 10YR 4/2 90 5YR 5/8 10 C M clay, loan 10 16 2 10YR 4/2 90 5YR 5/8 10 C M clay, loan 10 16 2 10YR A/2 90 SYR 5/8 10 C M				agen/						Ľ	Do - FAC-Neutr	arrest
Note that we have the second of the second												
Sturface Water Present? P Yes No Depth: (in.) Water Table Present? P Yes No Depth: (in.) Water Table Present? P Yes No Depth: (in.) Sturation Present? P Yes No Depth: (in.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Stream S								,				
Staturation Present? 'Yes No Depth: (in.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Staturation Present? N/A Staturation Present? Big1A1 - Blount silt loam, ground moraine, 0-2% slopes Profile Description Depth Horizon Color (Moist) % Toype Location (e.g. clay, sand, loan 0 10 1 10VR 4/2 96 5YR 4/6 5 C PL clay loam 10 16 2 10VR 4/2 96 5YR 5/8 10 C M clay loam	Surface Water	Present?				• •			Wetland Hy	drology Pr	resent? 🛛	Yes 🛛 No
N/A Nearbox N/A Remarks: SIGLS Big1A1 - Blount sill loam, ground moraine, 0-2% slopes Profile Description (Buetek to the degn dended to acoumte the inductor or offmethe addet to acoumte the inductor of a dot acoumte to acoumte to acoumte to acoumte the inductor of addet to acoumte the inductor of a dot acoumte to acoumte the inductor of a dot acoumte to acoumte to acoumte the inductor of a dot acoumte to acoumte the inductor of a dot acoumte to acoumethe acoumte to acoumethe acoumte to acoumte to acoumte to acoum	Saturation Pres	sent?	🗆 Yes 🗵 No			• •						
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Top Depth Bottom O Horizon Matrix Redox Features Texture 0 10 1 10YR 4/2 95 5YR 4/6 5 C PL clay loam 0 10 1 10YR 4/2 95 5YR 4/6 5 C PL clay loam 10 16 2 10YR 4/2 95 5YR 4/6 5 C PL clay loam <t< th=""><th>SOILS</th><th></th><th></th><th></th><th>•</th><th></th><th>•</th><th></th><th></th><th>N/A</th><th></th><th></th></t<>	SOILS				•		•			N/A		
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10 16 2 10YR 4/2 90 5YR 5/8 10 C M clay loam	SOILS Map Unit Name Profile Descrip Top	Bottom	Big1A1 - Blount sil	t loam, gr	round m the absence o Matrix	oraine, 0-	-2% slop	es tion, D=Depletion, RM=Reduced Matrix, CS=0 Redo	ox Features	ains; Location: PL=Pe		
-	SOILS Map Unit Name Profile Descrip Top Depth	Bottom (Describe to t Bottom Depth	Big1A1 - Blount sil he depth needed to document the in Horizon	t loam, gr ndicator or confirm Color	round m the absence o Matrix (Moist)	oraine, O- findicators.) (Typ %	-2% slop	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist)	ox Features %	ains; Location: PL=Po	Location	(e.g. clay, sand, loan
Image: Second	SOILS Map Unit Name Profile Descrip Top Depth 0	Depth 10	BIg1A1 - Blount sil the depth needed to document the in Horizon 1	t loam, gi indicator or confirm Color 10YR	round m the absence o Matrix (Moist) 4/2	oraine, 0- findicators.) (Typ % 95	-2% slop De: C=Concentra 5YR	es ton, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6	ox Features % 5	ains: Location: PL=Po	Location PL	(e.g. clay, sand, loan clay loam
<td< td=""><td>SOILS Map Unit Name Profile Descrip Top Depth 0</td><td>Depth 10</td><td>BIg1A1 - Blount sil the depth needed to document the in Horizon 1</td><td>t loam, gi indicator or confirm Color 10YR</td><td>round m the absence o Matrix (Moist) 4/2</td><td>oraine, 0- findicators.) (Typ % 95</td><td>-2% slop De: C=Concentra 5YR</td><td>es ton, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6</td><td>ox Features % 5</td><td>ains: Location: PL=Po</td><td>Location PL</td><td>(e.g. clay, sand, loan clay loam</td></td<>	SOILS Map Unit Name Profile Descrip Top Depth 0	Depth 10	BIg1A1 - Blount sil the depth needed to document the in Horizon 1	t loam, gi indicator or confirm Color 10YR	round m the absence o Matrix (Moist) 4/2	oraine, 0- findicators.) (Typ % 95	-2% slop De: C=Concentra 5YR	es ton, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6	ox Features % 5	ains: Location: PL=Po	Location PL	(e.g. clay, sand, loan clay loam
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Indicators for Problematic Soils 1 A1- Histosol S4 - Sandy Gleved Matrix A16 - Coast Prairie Redox A2 - Histic Epipedon S5 - Sandy Redox S7 - Dark Surface A3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A10 - 2 cm Muck F3 - Depleted Matrix Other (Explain in Remarks) A11 - Depleted Below Dark Surface F6 - Redox Dark Surface S1 - Sandy Muck Mineral F7 - Depleted Dark Surface S3 - 5 cm Mucky Peat or Peat F8 - Redox Depressions * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic for problematic for problematic for problematic for problematic soils 1 * Microsoft Present? Yes No	SOILS Map Unit Name Profile Descrip Top Depth 0 10 	btion (Describe to 1 Bottom Depth 10 16 	BIg1A1 - Blount sil he depth needed to document the in Horizon 1 2 	t loam, gi idicator or confirm Color 10YR 10YR 	round m the absence o Matrix (Moist) 4/2 4/2 	oraine, 0- findicators.) (Typ 95 90 	-2% slop = C=Concentra 5YR 5YR 	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8 	Sector % 5 10	ains; Location: PL=Pe C C 	Location PL M 	(e.g. clay, sand, loan clay loam clay loam
Indicators for Problematic Soils 1 A1- Histosol S4 - Sandy Gleved Matrix A2 - Histic Epipedon S5 - Sandy Redox A3 - Black Histic S6 - Stripped Matrix A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral A10 - 2 cm Muck F2 - Loamy Gleved Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface S1 - S Stratified Layers F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface S1 - S andy Muck Mineral F7 - Depleted Dark Surface S1 - S andy Muck Mineral F7 - Depleted Dark Surface S1 - S cm Muck F8 - Redox Depressions * 32 - S cm Muck Y Peat or Peat * 16	SOILS Map Unit Name Profile Descrip Top Depth 0 10 	btion (Describe to 1 Bottom Depth 10 16 	BIg1A1 - Blount sil the depth needed to document the in Horizon 1 2 	t loam, gr idicator or confirm Color 10YR 10YR 	round m the absence of Matrix (Moist) 4/2 4/2 	oraine, 0- findicators.) (Typ 95 90 	-2% slop ex C=Concentra 5YR 5YR 	es ton, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8 	x Features % 5 10 	ains; Location: PL=Pe C C 	Location PL M 	(e.g. clay, sand, loan clay loam
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 A4 - Hydrogen Sulfide A4 - Hydrogen Sulfide A5 - Stratified Layers A10 - 2 cm Muck A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface F7 - Depleted Dark Surface F7 - Depleted Dark Surface F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problema 	SOILS Map Unit Name Profile Descrip Top Depth 0 10 	btion (Describe to the Depth) Depth 10 16 	Big1A1 - Blount sil the depth needed to document the in Horizon 1 2 	t loam, gr dicator or confirm Color 10YR 10YR 	round m the absence o Matrix (Moist) 4/2 4/2 	oraine, 0- findicators.) (Typ 90 	-2% slop e. C=Concentra 5YR 5YR 	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8 	Statures % 5 10	Type C C C 	Location PL M 	(e.g. clay, sand, loan
A5 - Stratified Layers F2 - Loamy Gleved Matrix Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface A12 - Thick Dark Surface F7 - Depleted Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problems Restrictive Layer (If Observed) Type: Rock Depth: 16 Hydric Soil Present? Yes No	SOILS Map Unit Name Profile Descrip Top Depth 0 10 NRCS Hydric S	bilion (Describe to the Depth 10 16 Soil Field In A1- Histosol A2 - Histic Ep	Big1A1 - Blount sil he depth needed to document the in Horizon 1 2 	t loam, gr dicator or confirm Color 10YR 10YR 	round m a the absence of Matrix (Moist) 4/2 4/2 -	oraine, 0- findicators.) (Typ 95 90 re not pre S4 - Sanc S5 - Sanc	-2% slop: 	es tion, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist) 4/6 5/8): Matrix	x Features % 5 10 <u></u> <u></u> <u>Indicators</u>	ains; Location: PL=Po C C s for Problem A16 - Coast S7 - Dark SI	Location PL M Prairie Redox urface	(e.g. clay, sand, loan clay loam
 A10 - 2 cm Muck A11 - Depleted Below Dark Surface A11 - Depleted Below Dark Surface A12 - Thick Dark Surface S1 - Sandy Muck Mineral S3 - 5 cm Mucky Peat or Peat * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problem Restrictive Layer (If Observed) Type: Rock Depth: 16 Hydric Soil Present? Yes No 	COILS Map Unit Name Profile Descrip Top Depth 0 10 NRCS Hydric S 	bition (Describe to the Depth Depth 10 16	Big1A1 - Blount sil he depth needed to document the in Horizon 1 2 dicators (check he bipedon stic	t loam, gr dicator or confirm Color 10YR 10YR 	round m the absence of Matrix (Moist) 4/2 4/2 cators a -	oraine, 0- tindicators.) (Typ 95 90 -	-2% slop: -2% slop:	es ton, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8): Matrix	Sector % 5 10 <t< td=""><td>ains; Location: PL=Po Type C C s for Problem A16 - Coast F12 - Iron-M</td><td>Location PL M natic Soils ¹ Prairie Redox urface langanese Mass</td><td>(e.g. clay, sand, loar clay loam -</td></t<>	ains; Location: PL=Po Type C C s for Problem A16 - Coast F12 - Iron-M	Location PL M natic Soils ¹ Prairie Redox urface langanese Mass	(e.g. clay, sand, loar clay loam -
 A11 - Depleted Below Dark Surface A12 - Thick Dark Surface S1 - Sandy Muck Mineral S3 - 5 cm Mucky Peat or Peat Type: Rock Depth: 16 Hydric Soil Present? Yes Yes No 	COILS Map Unit Name Profile Descrip Top Depth 0 10 NRCS Hydric S NRCS Hydric S	bition (Describe to the Depth 10 16 Soil Field In A1- Histosol A2 - Histic Eg A3 - Black Hi A4 - Hydroge	Blg1A1 - Blount sil he depth needed to document the in Horizon 1 2 dicators (check he bipedon stic m Sulfide	t loam, gr dicator or confirm Color 10YR 10YR 	round m The absence of Matrix (Moist) 4/2 4/2 4/2 cators an -	oraine, 0- tindicators.) (Typ 95 90 re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan	-2% slop -2% slop 5YR 5YR -	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8): Matrix	Image: system of the	ains; Location: PL=PC C C C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL M matic Soils ¹ Prairie Redox urface langanese Mass Shallow Dark S	(e.g. clay, sand, loar clay loam
Image: Start Start of Muck Mineral F8 - Redox Depresents Start Start of Muck Mineral F8 - Redox Depresents Start Start of Muck Mineral F8 - Redox Depresents Restrictive Layer (If Observed) Type: Rock Depth: 16	COILS Map Unit Name Profile Descrip Top Depth 0 10 NRCS Hydric S NRCS Hydric S	bition (Describe to the Depth 10 16	Big1A1 - Blount sil he depth needed to document the in Horizon 1 2 	t loam, gr dicator or confirm Color 10YR 10YR 	round m the absence o Matrix (Moist) 4/2 4/2 cators al -	oraine, 0- iridicators). (Tyr % 95 90 S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan	-2% slop e: C=Concentra 5YR 5YR -	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8): Matrix c lineral Matrix	Image: system of the	ains; Location: PL=PC C C C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL M matic Soils ¹ Prairie Redox urface langanese Mass Shallow Dark S	(e.g. clay, sand, loar clay loam -
Image: S3 - 5 cm Mucky Peat or Peat 1 Indicators of hydrophytic vegetation and wetland hydrophytic vegetation	COILS Map Unit Name Profile Descrip Top Depth 0 10 NRCS Hydric S NRCS Hydric S	Solid Construction Construction <thconstruction< th=""> Construction</thconstruction<>	Big1A1 - Blount sil he depth needed to document the in Horizon 1 2 	t loam, gu dicator or confirm Color 10YR 10YR ere if indio	round m The absence of Matrix (Moist) 4/2 4/2 cators al -	oraine, 0- findicators.) (Typ 95 90 	-2% slop: -2% slop:	es tion, D=Depletion, RM=Reduced Matrix, CS= Redo Color (Moist) 4/6 5/8): Matrix k uface	Image: system of the	ains; Location: PL=PC C C C s for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location PL M matic Soils ¹ Prairie Redox urface langanese Mass Shallow Dark S	(e.g. clay, sand, loar clay loam -
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Midwest Region

Page	2	of	2

Project/Site: Marysville Connector Wetland ID: Wetland 2 Sample Point: SP05 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1 ------2. Number of Dominant Species that are OBL, FACW, or FAC: ____(A) ------------3. 4. ___ ___ ------Total Number of Dominant Species Across All Strata: (B) 5 ___ ___ ___ ---6. ___ Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) ___ ___ 7. ___ ___ ---Prevalence Index Worksheet 8. ------------9 Total % Cover of: Multiply by: ------------10 OBL spp. x 1 = ---0 Total Cover = 0 FACW spp. x 2 = 0 FAC spp. x 3 = 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 0 1. ---UPL spp. x 5= 0 2. ___ ___ ------3 Total (A) 0 ____(B) ------------4. Prevalence Index = B/A = 5. ---NA ___ 6. ___ ___ ___ ---7. ___ ---___ ___ 8. ---Hydrophytic Vegetation Indicators: 9. ------Yes O No Rapid Test for Hydrophytic Vegetation ------10. □ No Yes Dominance Test is > 50% ------------Total Cover = 0 Yes No Prevalence Index is ≤ 3.0 * Yes □ No Morphological Adaptations (Explain) * No Herb Stratum (Plot size: 5 ft radius) Yes Problem Hydrophytic Vegetation (Explain) * 100 Y FACW Phalaris arundinacea 1 * Indicators of hydric soil and wetland hydrology must be 2. -----------present, unless disturbed or problematic. 3. ___ ---___ ---**Definitions of Vegetation Strata:** 4. ------------5. 6 ___ Tree - Woody plants 3 in. (7.6cm) or more in diameter at ___ --breast height (DBH), regardless of height. 7. ___ ------___ 8. ---___ ---___ Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 --ft. tall. 10 ---------11 ___ ___ ------12. Herb - All herbaceous (non-woody) plants, regardless of size, --and woody plants less than 3.28 ft. tall. 13. 14 ___ ___ ------Woody Vines - All woody vines greater than 3.28 ft. in height. 15. ------___ ---Total Cover = 100 Woody Vine Stratum (Plot size: 30 ft radius) 1. 2 Hydrophytic Vegetation Present
Ves
No 3. ---___ ___ ___ 4. ---------5. ------Total Cover = 0 Remarks:



Midwest Region

Investigator #1: Michelle Kearns Investigator #2: Charle Allen State: Ohio Soil Unit: Big1A1: Blourt Blourt, ground morale, 0-2% depent Local Relief: Convex State: Ohio Slope (%): 3 Latitude: at sent Local Relief: Convex Datum: WGS 1244 Wetland 10: Wetland 2 Slope (%): 3 Latitude: at sent Local Relief: Convex Datum: WGS 1244 Community D: Upland Are climatic/hydrologic conditions on the site typical for his time of year? (fre, explain internants) Yes No Hydrophytic Vegetation? Soil °, or Hydrology ° anaturally problematic? Yes No Hydrophytic Vegetation Present? Yes No Bit - True Aquatic Fauna Bit - Vatar Marks Bit - True Aquatic Fauna Bit - Vatar Marks Bit - Mare Marks Bit - Mare Marks Bit - Mare Marks Bit - True Aquatic Fauna Bit - Prove Allow Present? Bit - True Aquatic Fauna Bit - True Aquatic Fauna Bit - Prove Allow Orshie on Aerial Imagery	Applicant:		Connector					Stantec Project #	193707055	5	Date:	11/20/19	
Soft Unit Big1A1 - Beaut all lacer all lacer grand momente. 0.2% segas NVIWWU Classification: NIA Wetland Link Wetland Link Wetland Link Wetland Link Softer (%): 3 Datum: WS 109 Community D: Upland Softer (%): 3 Latitude: 4.0 sent Local Relif: 7 sex. spetin rounds: 4 Yes No No No Are Vagetation? Soft / or Hydrology : algorithmic Hydrology : algorithmic Hydrology : algorithmic Hydrology in Carbon momente / Yes No N	••				las d		01-11	A II			County:	Union	
Landform: Side stope	0					igator #2:							
Silong (%): 3 Latitude: Longitude: Date: Date: Consumption (): Update Are longitude: Solit or Hydrology significantly disturbed? Are normal (rc cursitances present? Na Na Are Vagetation Solit or Hydrology significantly disturbed? Are normal (rc cursitances present? Na Na SUMMARY OF FINDINGS • Yes No Hydro Solits Present? Yes Na Na <td></td> <td></td> <td>nt silt loam, ground mora</td> <td>aine, 0-2%</td> <td></td> <td></td> <td></td> <td></td> <td>on: N/A</td> <td></td> <td></td> <td></td>			nt silt loam, ground mora	aine, 0-2%					on: N/A				
Are clamatichydrologic conditions on the site bypical for this time of year? (inc. sequence meanse) • Yes • No Are Vagetation : Soil • or Hydrology • anaturally problematic? Are normal circumstances present? • NA here Vagetation : Soil • or Hydrology • anaturally problematic? • Yes • No Hydrology Present? • Yes • No Hydrology Present? • Yes • No Hydrology Present? • Yes • No Hydrology Indicators (Check here if indicators are not present =): Etmaxs. Wetland Hydrology Indicators (Check here if indicators are not present =): Etmaxs. * A 1 - Surface Vater • B 3 - Againt 6 - Aura • B 3													
Are Vegetation ² , Sul ² , or Hydrolog ² o significantly disturbed? Are normal incrusing and sevent? Towning: N/A VMMARY OF FINDINGS '' Yes '' No '' Yes '' '' Yes ''' '' Yes '' '' Yes '' '' Yes ''' '' Yes '''' '' Yes '' '' Yes '''''''''''''''''''''''											Community ID:	: Upland	
Are Vegetation Soli Or Migration Range NA Dir. NA Dir. </td <td>Are climatic/hyd</td> <td>drologic cond</td> <td>litions on the site ty</td> <td>pical for</td> <td>this time</td> <td>e of year?</td> <td>(If no, expl</td> <td></td> <td>100</td> <td></td> <td>Section:</td> <td>N/A</td>	Are climatic/hyd	drologic cond	litions on the site ty	pical for	this time	e of year?	(If no, expl		100		Section:	N/A	
SUMMARY OF FINDINGS Wetland Hydrology Present? Yes No Hydric Soils Present? Yes No Wetland Hydrology Indicators (Check here if indicators are not present? Yes No Hydric Soils Present? Yes No Total Sufface Viator B - Viator-Suitand Lawrs Sufface Soil Cracks B - Viator-Suitand Lawrs Sufface Soil Cracks C - A - Sufface Soil Cracks B - Viator-Suitand Lawrs C - C - Presence of Reduced Iron B - Soutande Viator Cracks Other (Claption in Tied Soils C - C - Presence of Reduced Iron C - Presence of Reduced Iron B - Soutande Viator Colspan= Mixing Viator Soutande Viator Colspan= Mixing Viator C - Presence of Reduced Ir	Are Vegetation [□]	□ , Soil □ ,	or Hydrology 🗉 sig	nificantly	y disturb	ed?		Are normal circums	tances present	?	Township:	N/A	
Hydro Dyde Lettor Present? O Yes No Hydro Solie Present? O Yes No Remarks: Strike Sampling Point Within A Westand? Yes No Westand Hydrology Present? Yes No Bit Water Stained Lawys Bit Water Stained Stained Lawys Bit Water Stained Lawys<			or Hydrology 🗉 na	turally pr	oblemat	ic?		☑ Yes	NÐ		Range:	N/A Dir: N/A	
Remarks: Stringe Colspan="2">Secondary: Secondary: Secondary: <th co<="" td=""><td>Hydrophytic Veg</td><td>getation Pres</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Within A Woth</td><td></td></th>	<td>Hydrophytic Veg</td> <td>getation Pres</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Within A Woth</td> <td></td>	Hydrophytic Veg	getation Pres									Within A Woth	
Secondary Image: I		ogy riesent	1		- 103	<u> </u>							
Primary Primary Product Procession Best - Water - Stained Leaves Secondary A2 - High Water Table B3 - Aquatic Fauna B1 - A - Statraton Visite on Aerial Imagery B3 - Mater Stained Leaves C3 - Oxydel Faula C1 - Hydrogen Sulfide Olar C3 - Oxydel Faula C4 - Presence of Reduced Ion C3 - Oxydel Faula C4 - Presence of Reduced Ion C3 - Oxydel Faula C4 - Presence of Reduced Ion C4 - Presence of Reduced Ion C4 - Presence of Reduced Ion C4 - Oxydel Faula <	HYDROLOGY												
Image: Art - Strates Water Image: Bit - Aquation Image: Bit - Bit			itors (Check here i	f indicato	ors are n	ot presen	ıt⊍):			Secondary:			
 A3 - Saturation B4 - Früe Acquite Plants C2 - Dry-Season Water Table C3 - Studiked Rhizospheres on Living Roots B5 - Drift Deposits C3 - Studiked Rhizospheres on Living Roots B6 - Ion Deposits C4 - Presence of Reduced Ion B6 - Start B - Sparsely Vegetated Concave Surface C5 - Fract-Natural Test D5 - Fract-Neutral Test D5 - Fract-Neutral Test D5 - Start B - Sparsely Vegetated Concave Surface D6 - Gauge or Well Data D7 - Tim Muck Surface D6 - Fract-Neutral Test D8 - Sparsely Vegetated Concave Surface D7 - Tim Muck Surface D7 - Tim Muck Surface D7 - Tim Muck Surface D8 - Sparsely Vegetated Concave Surface D7 - Tim Muck Surface D8 - Fract-Neutral Test D8 - Fract-Neutral Test D8 - Sparsely Vegetated Concave Surface D8 - Fract-Neutral Test NA - Remarks: D8 - Fract-Neutral Test D9 - Fract-Neutral Test NA - Remarks: D9 - Fract-Neutral Test NA - Redox Features C2 - Const Praint Net			Water			B9 - Wate	er-Stained	Leaves			B6 - Surface Sc	oil Cracks	
□ B1 - Water Marks □ C1 - Hydrogen Suffed Odor □ C3 - Oxidera Rhizospheres on Lingn Roots □ D3 - Drift Deposits □ C3 - Oxidera Rhizospheres on Lingn Roots □ D3 - Stunted or Stressed Plants □ B3 - Drift Deposits □ C6 - Rocent Inited Solits □ D2 - Gauge on Present? D3 - Stage or Well Data □ B3 - Sparsely Vegetated Concave Surface □ Other (Explain in Remarks) □ D5 - FAC-Neutral Test Surface Water Present? □ Yes No Depth: (In.) Water Table Present? □ Yes No Depth: (In.) Saturation Present? □ Yes No Depth: (In.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Bit Alga Alfa - Blount sitt Dam, ground moraine, 0-2% Stopes Profile Description Description Bracense weedweet advaters (Test Cover Morains Alface A		A2 - High Wa	ter Table			B13 - Aqu	uatic Faun	a			B10 - Drainage	Patterns	
B2 - Sediment Deposits C3 - Oxidade Ritizospheres on Living Roots C4 - Presence of Reduced Ion C3 - Oxidade Ritizospheres on Living Roots C4 - Presence of Reduced Ion D1 - Stunde to Stitesed Plants C3 - Statution Visible on Aerial Imager C6 - Recent Iron Reduction in Tilled Soils D2 - Geomorphic Position D2 - Geomorphic Position B3 - Sparsely Vegetated Concave Surface D5 - Critical Muck Surface D5 - FAC-Neutral Test D2 - Geomorphic Position Field Observations: Surface Name Other (Explain in Remarks) Watant Able present? • Yes No Saturation Present? Yes No Depth: (in,) Watant Able present? • Yes No Profile Description Batantation Muck Surface (in,) Watantable: N/A Remarks: Bottom Egg1A1 - Blount sitt loam, ground moraine, 0-2% slopes No Profile Description Bottom 10 0YR 3/3 100													
□ B3 - Diff Deposite □ C4 - Presence of Reduced from □ D1 - Stunde of Stressed Plants □ B4 - Algal Mar O' Coust □ C6 - Recent from Reduction Tilled Solits □ D2 - Geomorphic Position □ B5 - Fron Deposits □ C7 - Thin Muck Surface □ D2 - Geomorphic Position □ D5 - FAC-Neutral Test □ D2 - Sparsely Vegetated Concave Surface □ D1 - Stunde of Stressed Plants □ D5 - FAC-Neutral Test Surface Water Present? □ Yes No Depth: (in,) Saturation Present? □ Yes No Depth: (in,) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if availab													
□ B4 - Algal Mat or Chast □ C6 - Recent Iron Reduction in Tilled Soils □ D2 - Geomorphic Position □ B5 - Iron Deposits □ D2 - Geomorphic Position □ D5 - FAC-Neutral Test □ B5 - Sparsely Vegetated Concave Surface □ D6 - Gauge or Well Data □ D5 - FAC-Neutral Test Surface Water Present? □ Yes No Depth: (In.) Wetland Hydrology Present? □ Yes No Saturation Present? □ Yes No Depth: (In.) Wetland Hydrology Present? □ Yes No Saturation Present? □ Yes No Depth: (In.) Wetland Hydrology Present? □ Yes No Saturation Present? □ Yes No Depth: (In.) No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Top Big1A1 - Blound silf loam, ground moraine, 0-2% slopes Profile Description Profile Description Prove Location (In. Class Version (In.) Staturation Preve (In.) Texture Oph Dotor In													
□ B5 - info Deposits □ C7 - Thin Muck Surface □ D5 - FAC-Neutral Test. □ B7 - inundation Visible on Aerial Imagery □ D9 - Gauge or Weil Data □ D9 - Gauge or Weil Data Field Observations: □ Other (Explain in Remarks) Wetland Hydrology Present? □ Yes No Saturation Present? □ Yes □ No Depth: (in.) Wetland Hydrology Present? □ Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA NA Remarks: Solla Stream Gauge, CM (Moist) % Color (Moist) % Type Location (e.g. Clay, sand, li 0 10 1 10YR 3/3 100 - </td <td></td>													
 B7 - Fundation Visible on Aerial Imager D8 - Gauge or Well Data Other (Explain in Remarks) D9 - Gauge or Well Data Other (Explain in Remarks) Field Observations: Other (Explain in Remarks) Wetland Hydrology Present? Yes © No Performance of the present? Yes © No Depth: (in.) Sturice Water (astream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Soluta Value (astream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Soluta Value (astream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Remarks: Soluta Value (astream gauge, monitoring well, aerial photos, previous inspections), if available: N/A Redox Features Profile Description: Could read to a could be atomad reduced; (hore: Could read to a could read to a could read atomadary), type: Counter the reduce and the atomad reduced; (hore: Could reduced to a could read atomadary), type: Counter the reduced to a could read atomadary (hore: Could reduced to a could read atomadary), type: Counter the reduced to a could read atomadary (hore: Could reduced to a could read atomadary), type: Counter the reduced to a could read atomadary (hore: Could reduced to a could read atomadary), type: Counter the reduced to a could read atomadary (hore: Could reduced to a could read atomadary), type: Counter the reduced to a could read atomadary (hore: Could reduced to a could read atomadary), type: Counter to a could read atomadary													
Be - Sparsely Vegetated Concave Surface Other (Explain in Remarks) Field Observations: Wetland Hydrology Present? Yes No Depth: (in.) Saturation Present? Yes No Depth: (in.) Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Remarks: Source Colspan="2">No Big1A1 - Blourt sitt loam, ground moraine, 0-2% slopes Profile Description: Bg1A1 - Blourt sitt loam, ground moraine, 0-2% slopes Profile Description: Bottom Color (Moist) % Type Location (e.g. clay, sand, in clay a color (Moist) 0 10 1 10YR 3/3 100 - <td< td=""><td></td><td></td><td></td><td>agery</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>				agery									
Sturface Water Present? Yes No Depth: (in.) Water Table Present? Yes No Depth: (in.) Sturface Vater Present? Yes No Depth: (in.) Conscribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Sturation Present? Yes No Depth: (in.) Construction Previous and photos (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Profile Decription Directions and photos and photos (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Profile Decription Directions and photos and photos (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA 0 10 1 10/R 3/3 100 -						Other (Ex	plain in Re	emarks)					
Saturation Present? Yes No Depth: (in.) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Remarks: Other Seconded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Other Seconded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: NA Profile Description (backto brace) wells wells (backto brace) Bottom Matrix Redox Features Texture Depth Depth Horizon Color (Moist) % Type Location (e.g. clay, sand, light) 0 10 1 10YR 3/3 100 - <t< th=""><th>Surface Water F</th><th>Present?</th><th></th><th>•</th><th></th><th>• •</th><th></th><th></th><th>Wetland Hy</th><th>/drology Pr</th><th>esent? 🛛</th><th>Yes 🛛 No</th></t<>	Surface Water F	Present?		•		• •			Wetland Hy	/drology Pr	esent? 🛛	Yes 🛛 No	
N/A N/A Map Unit Name: N/A Blg1A1 - Blount silt loam, ground moraine, 0-2% slopes Profile Description (Decrete the edge model to accuret the indexer or order the adverse of indicators (Dyge - Colorer (Morist) % Type Location (e.g. clay, sand, li 0 10 1 10/YR 3/3 100 - - - - - clay loam						• •							
Remarks: Remarks: SOLS Profile Description Detects to teagen render to deatern of indicators (Type C-Constrainto, D-Deptetor, RM-Reduced Matrix, CB-Constrainto, CB-S Stratified Layers CB-S Stratified Dark Stratege CB-S Reduced Dark Stratege CB-S Reduced Dark Stratege CB-S Reduced Dark Stratege CB-S Reduced CB-S Reduced Dark Stratege CB-S Reduced						()							
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Map Unit Name: Big1A1 - Blount silt loam, ground moraine, 0-2% slopes Profile Description Depth Matrix Redox Features Type Location Performance Depth Depth Horizon Color (Moist) % Color (Moist) % Type Location (e.g. clay, sand, linght) 0 10 1 10YR 3/3 100 -													
Profile Description (Decrete to the depth needed to document the indicator or ordinm the atterned of indicators.) (Type C+Concentration, D-Deptheten, RM-Redox Matrix, Cs-Covend/Called Sand Graine, Location: PL-Pore Linking, M-Matrix Texture Top Bottom Matrix Redox Features (e.g. clay, sand, linking, sand, san													
Top Bottom Matrix Redox Features Texture 0 10 1 10/YR 3/3 100 clay, sand, le 0 10 1 10/YR 3/3 100 clay, sand, le clay, sand, le clay, sand, le													
Depth Depth Horizon Color (Moist) % Color (Moist) % Type Location (e.g. clay, sand, location) 0 10 1 10YR 3/3 100 clay loam clay loam clay loam <t< td=""><td></td><td>:</td><td>Blg1A1 - Blount sil</td><td>t loam, g</td><td>round m</td><td>oraine, 0-</td><td>-2% slop</td><td>es</td><td></td><td></td><td></td><td></td></t<>		:	Blg1A1 - Blount sil	t loam, g	round m	oraine, 0-	-2% slop	es					
0 10 1 10YR 3/3 100 clay loam	Map Unit Name								S=Covered/Coated Sand Gr	rains; Location: PL=Pc	ore Lining, M=Matrix)	-	
-	Map Unit Name: Profile Descrip	tion (Describe to t			n the absence o	f indicators.) (Typ		tion, D=Depletion, RM=Reduced Matrix, C		rains; Location: PL=Po	ore Lining, M=Matrix)		
<td< td=""><td>Map Unit Name Profile Descrip Top</td><td>Bottom</td><td>he depth needed to document the in</td><td>dicator or confirm</td><td>n the absence o Matrix</td><td>f indicators.) (Typ</td><td></td><td>ion, D=Depletion, RM=Reduced Matrix, C Re</td><td>dox Features</td><td></td><td></td><td>Texture (e.g. clay, sand, loar</td></td<>	Map Unit Name Profile Descrip Top	Bottom	he depth needed to document the in	dicator or confirm	n the absence o Matrix	f indicators.) (Typ		ion, D=Depletion, RM=Reduced Matrix, C Re	dox Features			Texture (e.g. clay, sand, loar	
-	Map Unit Name: Profile Descrip Top Depth	btion (Describe to the Bottom Depth	he depth needed to document the in Horizon	dicator or confirm	n the absence o Matrix (Moist)	f indicators.) (Typ	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist)	edox Features %	Туре	Location	(e.g. clay, sand, loar	
	Map Unit Name Profile Descrip Top Depth 0	btion (Describe to the Bottom Depth 10	he depth needed to document the in Horizon 1	dicator or confirm Color 10YR	Matrix (Moist) 3/3	f indicators.) (Typ	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist)	dox Features % 	Type 	Location 	(e.g. clay, sand, loar clay loam	
Image: Solution of the solutic solution of the solutic solution of the solution of the solution	Map Unit Name: Profile Descrip Top Depth 0 	btion (Describe to the Bottom Depth 10	he depth needed to document the in Horizon 1 	dicator or confirm Color 10YR 	Matrix (Moist) 3/3	f indicators.) (Typ % 100 	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	edox Features % 	Type 	Location 	(e.g. clay, sand, loar clay loam 	
Image: Separation of the second se	Map Unit Name: Profile Descrip Top Depth 0 	btion (Describe to the Bottom Depth 10	he depth needed to document the in Horizon 1 	dicator or confirm Color 10YR 	Matrix (Moist) 3/3 	f indicators.) (Typ % 100 		ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	edox Features % 	Type 	Location 	(e.g. clay, sand, loar clay loam 	
Image: Solution of the solution	Map Unit Name Profile Descrip Top Depth 0 	btion (Describe to the Bottom) Depth 10 	he depth needed to document the in Horizon 1	Color 10YR 	n the absence or Matrix (Moist) 3/3 	f indicators.) (Typ % 100 	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	edox Features % 	Type 	Location 	(e.g. clay, sand, loar clay loam 	
<th< td=""><td>Map Unit Name Profile Descrip Top Depth 0 </td><td>btion (Describe to the Bottom) Depth 10 </td><td>he depth needed to document the in Horizon 1</td><td>Color 10YR </td><td>n the absence or Matrix (Moist) 3/3 </td><td>f indicators.) (Typ % 100 </td><td>e: C=Concentra</td><td>ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) </td><td>How Features % </td><td>Type </td><td>Location </td><td>(e.g. clay, sand, loar</td></th<>	Map Unit Name Profile Descrip Top Depth 0 	btion (Describe to the Bottom) Depth 10 	he depth needed to document the in Horizon 1	Color 10YR 	n the absence or Matrix (Moist) 3/3 	f indicators.) (Typ % 100 	e: C=Concentra	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	How Features %	Type 	Location 	(e.g. clay, sand, loar	
NRCS Hydric Soil Field Indicators (check here if indicators are not present): Indicators for Problematic Soils 1 A1- Histosol S4 - Sandy Gleved Matrix A16 - Coast Prairie Redox A2 - Histic Epipedon S5 - Sandy Redox S7 - Dark Surface A3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A5 - Stratified Layers F2 - Loamy Gleyed Matrix Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix Other (Explain in Remarks) A11 - Depleted Below Dark Surface F6 - Redox Dark Surface Other (Explain in Remarks) S1 - S andy Muck Mineral F8 - Redox Depressions Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro Restrictive Layer Ture: very comparated soil Denth: 10 inches	Map Unit Name Profile Descrip Top Depth 0 	bion (Describe to the Depth Depth 10	he depth needed to document the in Horizon 1	Color 10YR 	Matrix (Moist) 3/3 	f indicators.) (Typ % 100 		ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	How Features %	Type 	Location 	(e.g. clay, sand, loar	
 A1- Histosol S4 - Sandy Gleved Matrix A16 - Coast Prairie Redox S7 - Dark Surface S7 - Dark Surface S3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A5 - Stratified Layers F2 - Loamy Gleved Matrix Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface F7 - Depleted Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or pro- Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or pro- 	Map Unit Name Profile Descrip Top Depth 0 	btion (Describe to the Depth Depth 10	he depth needed to document the in Horizon 1	Color 10YR 	Matrix (Moist) 3/3 	f indicators.) (Typ % 100 		ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	How Features %	Type 	Location 	(e.g. clay, sand, loar clay loam 	
A2 - Histic Epipedon S5 - Sandy Redox S7 - Dark Surface A3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A5 - Stratified Layers F2 - Loamy Gleyed Matrix Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix Other (Explain in Remarks) A11 - Depleted Below Dark Surface F6 - Redox Dark Surface Other (Explain in Remarks) S1 - Stratified Layers F6 - Redox Dark Surface F7 - Depleted Dark Surface S3 - 5 cm Muck F8 - Redox Depressions Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro Restrictive Layer Ture: very comparated soil Denth: 10 inches	Map Unit Name Profile Descrip Top Depth 0 	Determine Describe to at the perturbation Depth 10	Horizon 1 	Color 10YR 	the absence of Matrix (Moist) 3/3 	f indicators.) (Typ % 100 		ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) 	How Features %	Type 	Location 	(e.g. clay, sand, loar clay loam 	
A3 - Black Histic S6 - Stripped Matrix F12 - Iron-Manganese Masses A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A5 - Stratified Layers F2 - Loamy Gleyed Matrix Other (Explain in Remarks) A10 - 2 cm Muck F3 - Depleted Matrix Other (Explain in Remarks) A11 - Depleted Below Dark Surface F6 - Redox Dark Surface Other (Explain in Remarks) A12 - Thick Dark Surface F7 - Depleted Dark Surface F7 - Depleted Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro Restrictive Layer Twpe: very compacted soil Depth: 10 inches	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric \$	btion (Describe to the Depth Depth 10	Horizon 1 	Color 10YR 	the absence of Matrix (Moist) 3/3 cators a	findicators.) (Typ % 100 re not pre	e: C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)):	edox Features % Indicator	Type s for Problem	Location -	(e.g. clay, sand, loar clay loam 	
 A4 - Hydrogen Sulfide A4 - Hydrogen Sulfide F1 - Loamy Muck Mineral TF12 - Very Shallow Dark Surface A5 - Stratified Layers F2 - Loamy Gleyed Matrix A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface F7 - Depleted Dark Surface F7 - Depleted Dark Surface F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat F8 - Redox Depressions Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro 	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S	btion (Describe to II Depth 10 Soil Field In A1- Histosol	Horizon 1 dicators (check he	Color 10YR 	the absence of Matrix (Moist) 3/3 cators a	findicators.) (Typ % 100 re not pre S4 - Sanc	e: C=Concentra e:sent Ø	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)):	How Features %	Type s for Problem A16 - Coast	Location -	(e.g. clay, sand, loar clay loam 	
 A5 - Stratified Layers A5 - Stratified Layers A10 - 2 cm Muck F3 - Depleted Matrix A11 - Depleted Below Dark Surface F6 - Redox Dark Surface F7 - Depleted Dark Surface F7 - Depleted Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro- Restrictive Layer 	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S	btion (Describe to the Depth Depth 10	he depth needed to document the in Horizon 1 dicators (check he pipedon	Color 10YR 	the absence of Matrix (Moist) 3/3 cators al	findicators.) (Typ % 100 	e: C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist)): Matrix	edox Features %	Type S for Problem A16 - Coast S7 - Dark SI	Location Prairie Redox urface	(e.g. clay, sand, loar clay loam -	
A 10 - 2 cm Muck A 10 - 2 cm Muck A 11 - Depleted Below Dark Surface A 11 - Depleted Below Dark Surface A 12 - Thick Dark Surface A 12 - Thick Dark Surface S1 - Sandy Muck Mineral S3 - 5 cm Mucky Peat or Peat A 10 - The set of	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S 	btion (Describe to II Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black His	he depth needed to document the in Horizon 1 dicators (check he bipedon stic	Color 10YR 	the absence of Matrix (Moist) 3/3 cators a cators a	findeators.) (Typ % 100 S4 - Sanc S5 - Sanc S6 - Strip	e: C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist) -	dox Features % <	Type s for Problem A16 - Coast S7 - Dark St F12 - Iron-M	Location	(e.g. clay, sand, loar clay loam -	
 A11 - Depleted Below Dark Surface A12 - Thick Dark Surface A12 - Thick Dark Surface S1 - Sandy Muck Mineral S3 - 5 cm Mucky Peat or Peat * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro- * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro- * Type: very compacted soil * Depth: 10 inches 	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S NRCS Hydric S	btion (Describe to the Depth Depth 10	Horizon 1 dicators (check he bipedon stic n Sulfide	Color 10YR 	hthe absence of Matrix (Moist) 3/3 cators al cators al	indicators.) (Typ % 100 S-	e: C=Concentra -	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)	dox Features % Indicator Indicator	Type sfor Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loar clay loam -	
 A12 - Thick Dark Surface S1 - Sandy Muck Mineral F8 - Redox Depressions S3 - 5 cm Mucky Peat or Peat * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro Restrictive Layer Type: very compacted soil Denth: 10 inches Hydric Soil Present? Ves No 	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S NRCS Hydric S	tion (Describe to II Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratifiec	Horizon Horizon 1 dicators (check he bipedon stic n Sulfide Layers	Color 10YR 	the absence of Matrix (Moist) 3/3 cators al	indicators.) (Typ % 100 S5 - Strip	e: C=Concentra ty Gleyed y Redox ped Matrix ped Matrix ny Muck N	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist) Matrix ineral Matrix	dox Features % Indicator Indicator	Type sfor Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loar clay loam -	
S3 - 5 cm Mucky Peat or Peat 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or pro Restrictive Layer Type: very compacted soil Depth: 10 inches Hydric Soil Present?	Map Unit Name Profile Descrip Top Depth NRCS Hydric S -	Detion Describe to at 10 Depth 10 Soil Field In A1- Histosol A2 - Histic Ep A3 - Black Hi A4 - Hydroge A5 - Stratifier A10 - 2 cm M A10 - 2 cm M	Horizon 1 dicators (check he bipedon stic n Sulfide Layers uck	Gate or confirm	the absence of Matrix (Moist) 3/3 cators al	Indicators.) (Type % 100	e: C=Concentra ty Gleyed ty Redox ped Matria ny Muck M ny Gleyed Matria	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist)): Matrix : ineral Matrix x	dox Features % Indicator Indicator	Type sfor Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loar clay loam -	
Restrictive Layer Type: very compacted soil Denth: 10 inches Hydric Soil Present? Ves S No	Map Unit Name: Profile Descrip Top Depth NRCS Hydric S 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 	Solid Clear the to at the second	Horizon 1 dicators (check he bipedon stic n Sulfide I Layers uck ed Below Dark Surface	Gate or confirm	the absence of Matrix (Moist) 3/3 cators al	Indexators.) (Type % 100 <	e: C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, C Re Color (Moist)): Matrix : ineral Matrix x rface	dox Features % Indicator Indicator	Type sfor Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loar clay loam -	
	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	tion (Describe to II Depth 10 -	he depth needed to document the in Horizon 1 dicators (check he bipedon stic n Sulfide i Layers uck dBelow Dark Surface bark Surface	Gate or confirm	the absence of Matrix (Moist) 3/3 cators al cators al cators al 	Indecators.) (Typ % 100	e: C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)	dox Features % Indicator Indicator	Type sfor Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	Location	(e.g. clay, sand, loar clay loam -	
	Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric \$ 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 	Stion Depeth Bottom Depth 10 A1 - Histosol A2 - Histic Ep A1 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick D S1 - Sandy M S3 - 5 cm Mu	he depth needed to document the in Horizon 1 dicators (check he bipedon stic n Sulfide I Layers uck Below Dark Surface bark Surface	Gate or confirm	the absence of Matrix (Moist) 3/3 cators at cators at cators at 	Indeators.) (Typ % 100	e: C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)	dox Features % 	Type S for Problem A16 - Coast F12 - Iron-M TF12 - Very Other (Expla	Location	(e.g. clay, sand, loar clay loam ses urface	
Remarks:	Map Unit Name: Profile Descrip Top Depth NRCS Hydric S NRCS Hydric S Restrictive Layer	Stion Depeth Bottom Depth 10 A1 - Histosol A2 - Histic Ep A1 - Hydroge A5 - Stratified A11 - Deplete A12 - Thick D S1 - Sandy M S3 - 5 cm Mu	he depth needed to document the in Horizon 1 dicators (check he bipedon stic n Sulfide I Layers uck Below Dark Surface bark Surface	Gate or confirm	the absence of Matrix (Moist) 3/3 cators at cators at cators at 	Indeators.) (Typ % 100	e: C=Concentra 	ion, D=Depletion, RM=Reduced Matrix, C Color (Moist)	dox Features % 	Type S for Problem A16 - Coast F12 - Iron-M TF12 - Very Other (Expla	Location	(e.g. clay, sand, loar clay loam ses urface	



Midwest Region

Page	2	of	2

Project/Site:	Marysville Connector				Wetland ID: Wetland 2 Sample Point: SP06
VEGETATION	(Species identified in all upperca	ase are non-native	e species.)		
Tree Stratum (Plo	ot size: 30 ft radius)				Deminance Trad Workshow
1	Species Name	<u>%</u>	Cover Domina	nt Ind.Status	Dominance Test Worksheet
1. 2.					Number of Dominant Species that are OPL EACIAL or EAC: (A)
3.					Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
4.					Total Number of Dominant Species Agrees All Strates 1 (P)
5.					Total Number of Dominant Species Across All Strata: 1 (B)
6.					Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					10001700000000000000000000000000000000
10.		otal Cover =	0		FACW spp. 0 $x^2 = 0$
			U		$FAC spp. \qquad 0 \qquad x \ 3 = 0$
Sapling/Shrub Str	atum (Plot size: 15 ft radius)				FACU spp. 0 $x 4 = 0$
1.					UPL spp. $\frac{1}{80}$ x 5 = $\frac{400}{1}$
2.					
3.					Total <u>80</u> (A) <u>400</u> (B)
4.					
5.					Prevalence Index = B/A = 5.000
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes IN Rapid Test for Hydrophytic Vegetation
10.					□ Yes ☑ No Dominance Test is > 50%
	To	otal Cover =	0		□ Yes
					Yes ^D No Morphological Adaptations (Explain) *
Herb Stratum (Plo	t size: 5 ft radius)				Yes One Problem Hydrophytic Vegetation (Explain) *
1.	Zea mays		80 Y	UPL	* Indicators of hydric soil and wetland hydrology must be
2.					present, unless disturbed or problematic.
3.					
4.					Definitions of Vegetation Strata:
5.					_
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
7.					breast neight (bbin), regardless of neight.
8.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
9.					ft. tall.
10. 11.					
11.					Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.					
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
10.		otal Cover =	80		
			00		
Woody Vine Strat	um (Plot size: 30 ft radius)				
1.					
2.					
3.					Hydrophytic Vegetation Present D Yes D No
4.					
5.					
	Тс	otal Cover =	0		
Remarks:	20% open ground				



Midwest Region

	Marysville Columbia						Stantec Project #:	193707055		Date: County:	11/20/19 Union
Investigator #1:	Michelle Ke	arns		Invest	igator #2:	Charlie .	Allen			State:	Ohio
		nt silt loam, ground mor	aine, 0-2%		J		WI/WWI Classification:	N/A		Wetland ID:	Wetland 3
	Depression				al Relief:					Sample Point:	
	1		40.19973		ongitude:			Datum:	WGS 1934	Community ID:	
	Irologic conc	litions on the site t			0			☑ Yes □	No	Section:	N/A
		or Hydrology D si				(1110, 0,0)	Are normal circumstar			Township:	N/A
		or Hydrology na					✓ Yes	NƏ	•	Range:	N/A Dir: N/A
SUMMARY OF F		or riyarology na	aturuny pi	obiema	10 :		100	110		Range.	
Hydrophytic Veg		a a mt O			🗉 No			Lludria Caila	Dree ent?		
				Yes				Hydric Soils		A/:+1=: A \A/-+1	⊻ Yes □ N
Wetland Hydrold	ogy Present	!		Yes	No No			is this Sam	pling Point v	within A wetla	and? • Yes • N
Remarks:											
HYDROLOGY											
Wetland Hvdro	oloav Indica	ators (Check here	if indicate	ors are n	ot presen	t□):					
Primary:						- /-			Secondary:		
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves			B6 - Surface Sc	oil Cracks
	A2 - High Wa					atic Fauna				B10 - Drainage	
	A3 - Saturatio					e Aquatic I				C2 - Dry-Seaso	
	B1 - Water M					ogen Sulfi				C8 - Crayfish B	
	B2 - Sedimer B3 - Drift Dep						spheres on Living Roots duced Iron				Visible on Aerial Image Stressed Plants
	B3 - Dritt Dep B4 - Algal Ma						duction in Tilled Soils			D1 - Stunied or D2 - Geomorph	
	B5 - Iron Dep					Muck Surf				D5 - FAC-Neutr	
		on Visible on Aerial Im	nagery			ge or Well					
		Vegetated Concave			Other (Ex	plain in Re	marks)				
Field Observati	ions:										
Surface Water F	Present?	☑ Yes □ No	Depth:	0.5	(in.)						
Water Table Pre		□ Yes □ No	Depth:		(in.)			Wetland Hy	drology Pr	esent? 🛛	Yes 🗆 No
Saturation Prese		□ fes □ No □ Yes □ No	Depth:		. ,						
Saturation Prese	ent?	" Yes ⊔ No									
		100 110	Deptil.	0	(in.)						
Describe Recorde	ed Data (stre	am gauge, monitorir		-	()	s inspecti	ons), if available:		N/A		
Describe Recorde Remarks:	ed Data (stre			-	()	s inspecti	ons), if available:		N/A		
	ed Data (stre			-	()	s inspecti	ons), if available:		N/A		
Remarks:	ed Data(stre			-	()	s inspecti	ons), if available:		N/A		
Remarks: SOILS	X	am gauge, monitorir	ng well, ae	erial photo	os, previou	·			N/A		
Remarks: SOILS Map Unit Name:	•	am gauge, monitorir Blg1A1 - Blount sil	ng well, ae It loam, g	round m	oraine, 0-	2% slope	25				
Remarks: SOILS Map Unit Name: Profile Descript	tion (Describe to t	am gauge, monitorir Blg1A1 - Blount sil	ng well, ae It loam, g	rial photo	oraine, 0-	2% slope	PS			vre Lining, M=Matrix)	Tortura
Remarks: SOILS Map Unit Name: Profile Descrip Top	tion (Describe to the Bottom	am gauge, monitorir Blg1A1 - Blount sil	ng well, ae	round m n the absence o Matrix	oraine, 0-	2% slope	2S on, D=Depletion, RM=Reduced Matrix, CS=C RedC	ox Features	ains; Location: PL=Pc		Texture
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Marysville Connector

Project/Site:

WETLAND DETERMINATION DATA FORM

Wetland ID: Wetland 3

Midwest Region

Page	2	of	2

Sample Point: SP07

VEGETATION (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1 ------2. Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) ------------3. Total Number of Dominant Species Across All Strata: 2 (B) 4. ___ ___ ------5 ___ ___ ___ ---6. ___ Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) ___ ___ 7. ___ ___ ---Prevalence Index Worksheet 8. ------------9 Total % Cover of: Multiply by: ------------10 OBL spp. x 1 = ---Total Cover = 0 FACW spp. x 2 = FAC spp. x 3 = Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 1. ---UPL spp. x 5= 2. ___ ___ ------3 Total (A) ------------4. Prevalence Index = B/A = 5. ---___ 6. ___ ___ ___ ---7. ___ ------___ 8. ---Hydrophytic Vegetation Indicators: 9. ------Yes O No Rapid Test for Hydrophytic Vegetation ------10. □ No Yes Dominance Test is > 50% ------------Total Cover = 0 Yes No Prevalence Index is ≤ 3.0 * Yes No Morphological Adaptations (Explain) * No Herb Stratum (Plot size: 5 ft radius) Yes Problem Hydrophytic Vegetation (Explain) * 60 Y FACW Phalaris arundinacea 1 * Indicators of hydric soil and wetland hydrology must be 2. Typha angustifolia 40 Y OBL present, unless disturbed or problematic. 3. ___ ------___ **Definitions of Vegetation Strata:** 4. ------------5. 6 ---Tree - Woody plants 3 in. (7.6cm) or more in diameter at ___ ___ --breast height (DBH), regardless of height. 7. ___ ------___ 8. ---___ ---___ Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 --ft. tall. 10 ---___ ---11 ___ ___ ------12. Herb - All herbaceous (non-woody) plants, regardless of size, --and woody plants less than 3.28 ft. tall. 13.

100

0

Total Cover =

Total Cover =

Woody Vines - All woody vines greater than 3.28 ft. in height.

0

0

0

0

NA

0

0 ____(B)

Hydrophytic Vegetation Present
Ves
No

Remarks:

14

15.

1. 2

3.

4.

5.

Woody Vine Stratum (Plot size: 30 ft radius)



Midwest Region

	Marysville C						Stantec Project #:	193707055		Date:	11/20/19
Applicant:	Columbia G									County:	Union
Investigator #1:	Michelle Ke	arns		Investi	igator #2:					State:	Ohio
Soil Unit:	Blg1A1 - Bloun	t silt loam, ground mor	raine, 0-2%	slopes		١	WI/WWI Classification:	N/A		Wetland ID:	Wetland 3
Landform:	Side slope				al Relief:					Sample Point:	
Slope (%):	3		40.19975		ongitude:			Datum:	WGS 1984	Community ID:	Upland
Are climatic/hyd	drologic cond	itions on the site t	ypical for	this time	e of year?	(If no, expla	in in remarks)	Yes	No	Section:	N/A
Are Vegetation	□, Soil □, c	or Hydrology 🗉 si	gnificantly	/ disturb	ed?		Are normal circumstar	nces present	?	Township:	N/A
Are Vegetation	□ , Soil □ , c	or Hydrology 🔍 na	aturally pr	oblemat	ic?		Yes	NÐ		Range:	N/A Dir: N/A
SUMMARY OF I		, ,,	, ,							0	
Hydrophytic Veg		ent?		Yes	🗉 No			Hydric Soils	Present?		🗉 Yes 🛛 No
Wetland Hydrold				□ Yes						Mithin A Metle	and? • Yes • No
Remarks:	logy i reserie			100					pingront		
HYDROLOGY											
	ology Indica	tors (Check here	if indicato	rs are n	ot presen	t⊡):					
Primary:						-)-			Secondary:		
	A1 - Surface V	Vater			B9 - Wate	er-Stained	Leaves			B6 - Surface So	oil Cracks
	A2 - High Wat					atic Fauna				B10 - Drainage	
	A3 - Saturatio					e Aquatic I				C2 - Dry-Seaso	
	B1 - Water Ma					ogen Sulfi				C8 - Crayfish Bu	
	B2 - Sediment B3 - Drift Dep						spheres on Living Roots duced Iron				Visible on Aerial Imagery Stressed Plants
	B3 - Drift Dep B4 - Algal Mat						duction in Tilled Soils			D1 - Stunted or D2 - Geomorphi	
	B5 - Iron Depo					Muck Surf				D5 - FAC-Neutr	
		n Visible on Aerial In	nagery			ge or Well					
		Vegetated Concave				plain in Re					
Field Observati	tions:										
Surface Water F	Present?	□ Yes ☑ No	Depth:		(in.)					10	N
Water Table Pre	esent?	□ Yes ☑ No	Depth:		(in.)			Wetland Hy	arology Pr	esent?	Yes 🛛 No
Saturation Prese	ent?				. ,						
		□ Yes 🛛 No	Depth:		(in.)						
			Depth:	rial photo	(in.)	s inspecti	ons), if available:		N/A		
Describe Recorde Remarks:		□ Yes 🛛 No	Depth:	rial photo	(in.)	s inspecti	ons), if available:		N/A		
Describe Recorde Remarks: SOILS	ed Data(strea	□ Yes ☑ No am gauge, monitorir	Depth: ng well, ae	·	(in.)	·			N/A		
Describe Recorde Remarks: SOILS Map Unit Name:	ed Data (strea	□ Yes ☑ No am gauge, monitorir Blg1A1 - Blount si	Depth: ng well, ae It loam, gi	round m	(in.) os, previou oraine, 0-	2% slope	25	"overed/Coated Sand Gr		ve Lining MeMatriy)	
Describe Recorde Remarks: SOILS Map Unit Name Profile Descrip	ed Data (strea	□ Yes ☑ No am gauge, monitorir Blg1A1 - Blount si	Depth: ng well, ae It loam, gi	round m	(in.) os, previou oraine, 0-	2% slope	PS on, D=Depletion, RM=Reduced Matrix, CS=C			re Lining, M=Matrix)	Texture
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Describe Recorde Remarks: SOILS Map Unit Name Profile Descrip Top Depth	ed Data (strea e: I btion (Describe to the Bottom Depth	Yes No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the i Horizon	Depth: ng well, aer It loam, gr ndicator or confirm Color	round m the absence of Matrix (Moist)	(in.) ors, previou oraine, 0- findicators.) (Typ %	2% slope e: C=Concentrat	es on, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist)	x Features %	ins; Location: PL=Po	Location	(e.g. clay, sand, loan
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Describe Recorde Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0	ed Data (streated bata) e: [] btion (Describe to the bottom [] Depth [] 20	□ Yes ☑ No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the li Horizon 1	Depth: ng well, ae It loam, gr ndicator or confirm Color 10YR	round m the absence of Matrix (Moist) 3/3	(in.) oraine, 0- findicators.) (Typ % 100	2% slope e: C=Concentrat	es on, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) 	x Features % 	ins; Location: PL=Po Type 	Location	(e.g. clay, sand, loan loam
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Describe Recorde Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S	ed Data (streat c) (Describe to th Bottom Depth 20 Soil Field Ind A1- Histosol A2 - Histic Ep	Yes No am gauge, monitorir Blg1A1 - Blount si e depth needed to document the li Horizon 1 dicators (check h ipedon	It loam, gu It loam, gu Idicator or confirm Color 10YR 	round m the absence of Matrix (Moist) 3/3 cators au	(in.) s, previou oraine, 0- (indicators.) (Typ % 100 	2% slope e: C=Concentrat sent ⁽²⁾ ly Gleyed I ly Gleyed I	es on, D=Depletion, RM=Reduced Matrix, CS=C Color (Moist) -	x Features % 	ins; Location: PL=Po Type -	Location Prairie Redox urface	(e.g. clay, sand, loan -
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Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top Depth 0 NRCS Hydric S	ed Data (streat btion (Describe to the Bottom Depth 20 Soil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger	Yes No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the i Horizon 1 dicators (check h ipedon stic Layers	It loam, gu It loam, gu Idicator or confirm Color 10YR 	round m the absence of Matrix (Moist) 3/3 cators an cators an 	(in.) ss, previou oraine, 0- (indicators.) (Typ % 100 	2% slope e: C=Concentrat y Gleyed I ly Redox iy Gleyed J ly Redox iy Gleyed J	PS on, D=Depletion, RM=Reduced Matrix, CS=C Redo Color (Moist) -	x Features % Indicators	Type </td <td>Location</td> <td>(e.g. clay, sand, loar loam -</td>	Location	(e.g. clay, sand, loar loam -
Describe Recorde Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 NRCS Hydric S "	ed Data (streat btion (Describe to th Depth 20 Soil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mu	Yes No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the i Horizon 1 dicators (check h ipedon stic Layers	It loam, gr ndicator or confirm Color 10YR ere if indic	round m the absence of Matrix (Moist) 3/3 cators al cators al	(in.) s, previou oraine, 0- (indicators) (Typ % 100 	2% slope e: C=Concentrat ly Gleyed I y Redox ped Matrix y Gleyed	es on, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) -	x Features % Indicators	Type </td <td>Location</td> <td>(e.g. clay, sand, loar loam -</td>	Location	(e.g. clay, sand, loar loam -
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Describe Recorde Remarks: SOILS Map Unit Name: Profile Descrip Top Depth 0 NRCS Hydric S	ed Data (streat btion (Describe to th Bottom Depth 20 Soil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mu A11 - Deptete A12 - Thick Du S1 - Sandy Mu	□ Yes □ No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the i Horizon 1 dicators (check h ipedon stic n Sulfide Layers Jok d Below Dark Surface uck Mineral	It loam, gr ndicator or confirm Color 10YR ere if indic	round m the absence of Matrix (Moist) 3/3 cators al -	(in.) s, previou oraine, 0- (indicators.) (typ % 100 	2% slope e: C=Concentrat y Gleyed ped Matrix py Gleyed eted Matrix yy Gleyed eted Matrix yy Gleyed sted Sted Sted Sted Sted Sted Sted Sted	BS on, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) -	x Features % Indicators	Type s for Problem A16 - Coast S7 - Dark SU F12 - Iron-M TF12 - Very Other (Expla	Location	(e.g. clay, sand, loan loam es urface
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Describe Recorde Remarks: OILS Map Unit Name: Profile Descrip Top Depth 0 NRCS Hydric S NRCS Hydric S -	ed Data (streat btion (Describe to the Bottom Depth 20 Soil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mu A11 - Deplete A12 - Thick Do S1 - Sandy Mu S3 - 5 cm Mu	□ Yes □ No am gauge, monitorin Blg1A1 - Blount si e depth needed to document the in Horizon 1 dicators (check h ipedon ttic n Sulfide Layers uck d Below Dark Surfac ark Surface uck Mineral cky Peat or Peat	It loam, gr ndicator or confirm Color 10YR ere if indic	round m the absence of Matrix (Moist) 3/3 cators an cators a	(in.) s, previou oraine, 0- (indicators.) (Typ % 100 	2% slope e: C=Concentrat -	BS on, D=Depletion, RM=Reduced Matrix, CS=C Redc Color (Moist) -	x Features % <u></u> <u></u> <u></u> - - -	ins: Location: PL=Po Type s for Problem A16 - Coast S7 - Dark St S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	Location -	(e.g. clay, sand, loan loam es urface



Midwest Region

Page	2	of	2

Project/Site:	Marysville Connector					Wetland ID: Wetland 3 Sample Point: SP08
VEGETATION	(Species identified in all up	percase are non-na	tive spec	cies.)		
Tree Stratum (Plo	ot size: 30 ft radius)					
4	Species Name			Dominant	Ind.Status	Dominance Test Worksheet
1. 2.						
3.						Number of Dominant Species that are OBL, FACW, or FAC:(A)
-						
4.						Total Number of Dominant Species Across All Strata: 1 (B)
5.						
6.						Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
7.						Durana la dan Washa karé
<u> </u>						Prevalence Index Worksheet
						Total % Cover of: Multiply by:
10.		Total Cavar -				OBL spp x 1 =
		Total Cover =	0			FACW spp. x 2 = 0
0	(Distains 45.6 million)					FAC spp. x 3 = 0 FACU spp. x 4 = 0
	atum (Plot size: 15 ft radius)					FACU spp. $x 4 = 0$ UPL spp. $x 5 = 0$
1. 2.						UPL spp x 5 =0
<u> </u>						Total(A)(B)
<u> </u>						
						Prevalence Index = B/A = <u>NA</u>
6.						
7.						Indraubutia Varatatian Indiastara
8.						Hydrophytic Vegetation Indicators:
9.						Yes No Rapid Test for Hydrophytic Vegetation
10.		Tatal Osura -				☑ Yes □ No Dominance Test is > 50%
		Total Cover =	0			□ Yes □ No Prevalence Index is ≤ 3.0 *
						□ Yes □ No Morphological Adaptations (Explain) *
Herb Stratum (Plo			05	V	FAC	Yes No Problem Hydrophytic Vegetation (Explain) *
1. 2.	Poa pratensis		95 5	Y N	FAC FACU	* Indicators of hydric soil and wetland hydrology must be
3.	Cirsium arvense					present, unless disturbed or problematic.
4.						Definitions of Vagatation Strata
5.						Definitions of Vegetation Strata:
<u>5</u> . 6						Troo
7.						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
<u> </u>						ft. tall.
11.						Herb - All herbaceous (non-woody) plants, regardless of size,
12. 13.						and woody plants less than 3.28 ft. tall.
13.						
14.						Woody Vines - All woody vines greater than 3.28 ft. in height.
15.		Tatal Osura				Woody villes - Am Hoody Amos grouter and one of the minorgina
		Total Cover =	100			
Woody Vine Start	m (Plot size: 20 ft radius)					
1.	um (Plot size: 30 ft radius)					
2.						
3.						Hydrophytic Vegetation Present Ves No
<u> </u>						nyurophytic vegetation Present @ res 0 No
4. 5.						
Э.		Total Cover -	0			
Remarks:		Total Cover =	U			
nomanto.						



Midwest Region

Investigator #1: N Soil Unit: Bandform: Landform: Slope (%): 1 Are climatic/hydro Are Vegetation [□] Are Vegetation [□]							Stantec Project #:	193707055		Date:	11/20/19
Soil Unit: B Landform: C Slope (%): 1 Are climatic/hydro Are Vegetation ^D Are Vegetation	Michelle Ke	mbia Gas of Ohio elle Kearns Investigator #2: Charlie Allen								County:	Union
Landform: E Slope (%): 1 Are climatic/hydro Are Vegetation [□] Are Vegetation [□]					igator #2:					State:	Ohio
Slope (%): 1 Are climatic/hydro Are Vegetation [□] Are Vegetation [□]	-	t silt loam, ground mora	aine, 0-2%				WI/WWI Classification	:: N/A			Wetland 4
Are climatic/hydro Are Vegetation [□] Are Vegetation [□]	Depression				cal Relief:		e	-		Sample Point:	
Are Vegetation [□] Are Vegetation [□]	1		40.2001		ongitude:				WGS 1984	Community ID:	PEM
Are Vegetation						(If no, expla	in in remarks)	☑ Yes □	No	Section:	N/A
	, Soil 🗆 , c	or Hydrology 🗉 sig	gnificantly	y disturb	ed?		Are normal circumsta	ances present?	>	Township:	N/A
	, Soil 🗆 , c	or Hydrology 🗉 na	aturally pr	oblemat	tic?		Yes	NÐ		Range:	N/A Dir: N/A
SUMMARY OF FI	INDINGS										
Hydrophytic Vege	etation Pres	ent?		Yes	s 🗆 No			Hydric Soils	Present?		Yes No
Wetland Hydrolog				Yes	s 🗆 No			Is This Samp	oling Point V	Within A Wetla	and? • Yes • No
Remarks:											
IYDROLOGY											
Wetland Hydrol Primary:	logy Indica	tors (Check here i	if indicato	ors are n	ot presen	ıt□):			Secondary:		
	A1 - Surface V	Vater			B9 - Wate	er-Stained	Leaves			B6 - Surface So	il Cracks
	A2 - High Wat					uatic Fauna				B10 - Drainage	
	A3 - Saturatio					e Aquatic I				C2 - Dry-Seaso	
	31 - Water Ma					ogen Sulfi				C8 - Crayfish B	
-	32 - Sedimen 33 - Drift Dep						spheres on Living Roots duced Iron				Visible on Aerial Imagery Stressed Plants
	34 - Algal Mat			_			duction in Tilled Soils			D2 - Geomorphi	
□ E	35 - Iron Depo	osits			C7 - Thin	Muck Surf	ace			D5 - FAC-Neutr	
		n Visible on Aerial Im				ge or Well					
- E	38 - Sparsely	Vegetated Concave	Surface		Other (Ex	plain in Re	marks)				
Field Observatio	ons:										
Surface Water Pr	resent?	🗆 Yes 🗵 No	Depth:		(in.)			Wetland Hy	drology Pr	ocont?	Yes 🗉 No
Water Table Pres	sent?	🛛 Yes 🗆 No	Depth:	0	(in.)			wettanu ny	urology Fr	esent:	
Saturation Preser	nt?	Yes Down	Depth:	0	(in.)						
Jacorika Decordos	d Data (atrac	am gauge, monitorin		rial shate		a inanaati	ana) if available.		N/A		
Remarks:			<u> </u>		71	·	~				
OILS											
Map Unit Name:	1	Blg1A1 - Blount sil	t loam ia	round m	oraine 0	2% slop					
							on, D=Depletion, RM=Reduced Matrix, CS=				
		a depth needed to document the in	dicator or confirm			e: C=Concentral			ins; Location: PL=Pc	ore Lining, M=Matrix)	Texture
Тор	Bottom			Matrix				ox Features	-		
Depth	Depth	Horizon		(Moist)	%		Color (Moist)	%	Туре	Location	(e.g. clay, sand, loam
	7	1	10YR	4/2	95	5YR	4/6	5	С	PL	clay loam
0	21	2	10YR	4/2	95	5YR	4/6	5	С	M	clay loam
0 7											
-											
7						1					
7										-	
7											
7 											
7											
7 	 	 		 		 	 		 		
7 NRCS Hydric So	 oil Field Ind			 	 re not pre	 sent □):		 for Problen	 natic Soils ¹	
7	 	 dicators (check he		 cators a	 re not pre S4 - Sanc	 esent □ dy Gleyed):	 Indicators	 for Problen	 natic Soils ¹ Prairie Redox	
7	 oil Field Ind A1- Histosol	 dicators (check he		 cators a	 re not pre S4 - Sanc S5 - Sanc	 esent □ dy Gleyed): Matrix	 Indicators	 5 for Problen A16 - Coast S7 - Dark St	 natic Soils ¹ Prairie Redox	
7 NRCS Hydric Sc A NRCS Hydric A	 oil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger	 dicators (check he ipedon stic n Sulfide		 cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan	 esent dy Gleyed dy Redox ped Matrix ny Muck M): Matrix	Indicators	 5 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	 Prairie Redox urface anganese Mass Shallow Dark St	
7 NRCS Hydric Sc	 oil Field Im A1- Histosol A2 - Histo Ep A3 - Black His A4 - Hydroger A5 - Stratified	 dicators (check he ipedon stic 5tic 1 Sulfide Layers		 cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan	 esent dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed): Matrix Matrix	Indicators	 5 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	 natic Soils ¹ Prairie Redox urface anganese Masso	
7 NRCS Hydric So	 oil Field In A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Strattfied A10 - 2 cm Mu	 dicators (check he ipedon tic n Sulfide Layers uck	 ere if indio	 cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Depl	 esent dy Gleyed dy Redox ped Matrix my Muck M my Gleyed eted Matrix): Matrix Matrix	Indicators	 5 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	 Prairie Redox urface anganese Mass Shallow Dark St	
7 NRCS Hydric Sc	 oil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mt A11 - Deplete	 dicators (check he ipedon stic n Sulfide Layers Jok d Below Dark Surface	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Depli F6 - Redo	 esent dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su): Matrix Matrix triace	Indicators	 5 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	 Prairie Redox urface anganese Mass Shallow Dark St	
7 NRCS Hydric Sc A	 oil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mi A11 - Deplete A12 - Thick D	 dicators (check he ipedon stic n Sulfide Layers uck d Below Dark Surface ark Surface	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Depli F6 - Redc F7 - Depli): Matrix Matrix trace Surface	Indicators	 5 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very	 Prairie Redox urface anganese Mass Shallow Dark St	
7 NRCS Hydric Sc A A A A A A A A A A A A A A A A A A A	 oil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mt A11 - Deplete A12 - Thick D. S1 - Sandy Mt	 dicators (check he ipedon stic 1 Sulfide Layers Jok d Below Dark Surface ark Surface uck Mineral	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Depli F6 - Redc F7 - Depli	 esent dy Gleyed dy Redox ped Matrix ny Muck M ny Gleyed eted Matrix ox Dark Su): Matrix Matrix trace Surface	Indicators	 A16 - Coast S7 - Dark SU F12 - Iron-M TF12 - Very Other (Expla	 Prairie Redox urface anganese Massi Shallow Dark Si shallow Dark Si in in Remarks)	 es uface
7 NRCS Hydric Sc A A A A A A A A A A A A A A A A A A A	 oil Field Ind A1- Histosol A2 - Histic Ep A3 - Black His A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mt A11 - Deplete A12 - Thick D. S1 - Sandy Mt	 dicators (check he ipedon stic 1 Sulfide Layers Jock d Below Dark Surface ark Surface uck Mineral cky Peat or Peat	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F2 - Loan F3 - Depli F6 - Redc F7 - Depli): Matrix Matrix trace Surface	Indicators	 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	 natic Soils ¹ Prairie Redox Jrface anganese Mass Shallow Dark St Shallow Dark St ain in Remarks)	 es urface
7 NRCS Hydric Sc NRCS Hydric Sc NRCS Hydric Sc NRCS Hydric Sc	 oil Field Ind A1 - Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mit A10 - 2 cm Mit A11 - Deplete A12 - Thick D S1 - Sandy Mit S3 - 5 cm Mut	 dicators (check he ipedon stic 1 Sulfide Layers Jock d Below Dark Surface ark Surface uck Mineral cky Peat or Peat	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F3 - Depli F6 - Redc F7 - Depli F8 - Redc): Matrix Matrix trace Surface	Indicators of hydrophy	 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	 natic Soils ¹ Prairie Redox Jrface anganese Mass Shallow Dark St Shallow Dark St ain in Remarks)	 es urface
7 NRCS Hydric Sc NRCS Hydric Sc NRCS Hydric Sc	 oil Field Ind A1 - Histosol A2 - Histic Ep A3 - Black His A4 - Hydroger A5 - Stratified A10 - 2 cm Mit A10 - 2 cm Mit A11 - Deplete A12 - Thick D S1 - Sandy Mit S3 - 5 cm Mut	 dicators (check he ipedon stic 1 Sulfide Layers Jock d Below Dark Surface ark Surface uck Mineral cky Peat or Peat	 ere if indio	cators a	re not pre S4 - Sanc S5 - Sanc S6 - Strip F1 - Loan F3 - Depli F6 - Redc F7 - Depli F8 - Redc): Matrix Matrix trace Surface	Indicators of hydrophy	 for Problem A16 - Coast S7 - Dark St F12 - Iron-M TF12 - Very Other (Expla	 natic Soils ¹ Prairie Redox Jrface anganese Mass Shallow Dark St Shallow Dark St ain in Remarks)	 es urface



Midwest Region

Page	2	of	2

Project/Site: Marysville Connector Wetland ID: Wetland 4 Sample Point: SP09 **VEGETATION** (Species identified in all uppercase are non-native species.) Tree Stratum (Plot size: 30 ft radius) **Dominance Test Worksheet** Species Name % Cover Dominant Ind.Status 1 ------2. Number of Dominant Species that are OBL, FACW, or FAC: ____(A) ------------3. 4. ___ ___ ------Total Number of Dominant Species Across All Strata: (B) 5 ___ ___ ___ ---6. ___ Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B) ___ ___ 7. ___ ___ ---Prevalence Index Worksheet 8. ------------9 Total % Cover of: Multiply by: ------------10 OBL spp. x 1 = ---0 Total Cover = 0 FACW spp. x 2 = 0 FAC spp. x 3 = 0 Sapling/Shrub Stratum (Plot size: 15 ft radius) x 4 = FACU spp. 0 1. ---UPL spp. x 5= 0 2. ___ ___ ------3 Total (A) 0 ____(B) ------------4. Prevalence Index = B/A = 5. ---NA ___ 6. ___ ___ ___ ---7. ___ ---___ ___ 8. ---Hydrophytic Vegetation Indicators: 9. ------Yes O No Rapid Test for Hydrophytic Vegetation ------10. □ No Yes Dominance Test is > 50% ------------Total Cover = 0 Yes No Prevalence Index is ≤ 3.0 * Yes □ No Morphological Adaptations (Explain) * No Herb Stratum (Plot size: 5 ft radius) Yes Problem Hydrophytic Vegetation (Explain) * 100 Y FACW Phalaris arundinacea 1 * Indicators of hydric soil and wetland hydrology must be 2. -----------present, unless disturbed or problematic. 3. ------___ ---**Definitions of Vegetation Strata:** 4. ------------5. 6 ---Tree - Woody plants 3 in. (7.6cm) or more in diameter at ___ --breast height (DBH), regardless of height. 7. ___ ------___ 8. ---___ ---___ Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 9 --ft. tall. 10 ---------11 ___ ___ ------12. Herb - All herbaceous (non-woody) plants, regardless of size, --and woody plants less than 3.28 ft. tall. 13. 14 ___ ___ ------Woody Vines - All woody vines greater than 3.28 ft. in height. 15. ------___ ---Total Cover = 100 Woody Vine Stratum (Plot size: 30 ft radius) 1. 2 Hydrophytic Vegetation Present
Ves
No 3. ---___ ___ ___ 4. ---------5. ------Total Cover = 0 Remarks:



WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site:	Marysville (Stantec Project #:	193707055		Date:	11/20/19	9																																																																																																																	
Applicant:	Columbia G	Gas of Ohio								County:	Union																																																																																																																		
Investigator #1:	Michelle Ke	earns		Investi	gator #2:	Charlie	Allen			State:	Ohio																																																																																																																		
Soil Unit:	Blg1A1 - Blou	nt silt loam, ground mora	aine, 0-2%	slopes		1	WI/WWI Classification	n: N/A		Wetland ID:	Wetland	4																																																																																																																	
Landform:	Side slope			Loc	al Relief:	Convex				Sample Point:	SP10																																																																																																																		
Slope (%):	3		40.2001		ongitude:			Datum:	WGS 1984	Community ID:	Upland																																																																																																																		
Are climatic/hyd	drologic conc	ditions on the site ty	pical for	this time	of year?	(If no, expla	ain in remarks)	• Yes •	No	Section:	N/A																																																																																																																		
Are Vegetation	, Soil∘ ,	or Hydrology sig	anificantly	y disturbe	ed?		Are normal circumsta	ances present?)	Township:	N/A																																																																																																																		
Are Vegetation	, ,			roblemati			• Yes	No		Range:	N/A	Dir: N	N/A																																																																																																																
SUMMARY OF	, ,		,																																																																																																																										
Hydrophytic Ve		sent?		• Yes	∘ No			Hydric Soils	Present?			Yes •	No																																																																																																																
Wetland Hydrol				· Yes						Within A Wetla	and?	Yes	No																																																																																																																
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HYDROLOGY																																																																																																																													
Wetland Hydr	ology Indica	ators (Check here i	f indicato	ors are no	ot presen	t.):																																																																																																																							
Primary:	•••					,			Secondary:																																																																																																																				
<u> </u>	A1 - Surface	Water		0	B9 - Wate	er-Stained	Leaves		<u>••••••••••</u> •	B6 - Surface So	il Cracks																																																																																																																		
	A2 - High Wa					atic Fauna				B10 - Drainage																																																																																																																			
•	A3 - Saturatio	on		0	B14 - True	e Aquatic I	Plants		•	C2 - Dry-Seaso		able																																																																																																																	
0	B1 - Water M	larks		0		ogen Sulfi				C8 - Crayfish Bu																																																																																																																			
0	B2 - Sedimer	nt Deposits		•			spheres on Living Roots			C9 - Saturation		Aerial Ima	agery																																																																																																																
0	B3 - Drift Dep			ō			educed Iron			D1 - Stunted or																																																																																																																			
	B4 - Algal Ma						duction in Tilled Soils		•	D2 - Geomorphi																																																																																																																			
0	B5 - Iron Dep			0		Muck Sur			8	D5 - FAC-Neutr																																																																																																																			
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Surface Water		• Yes • No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes ·	No																																																																																																																	
Water Table Pr		 Yes No 	Depth:		(in.)																																																																																																																								
Saturation Pres	ent?	° Yes • No	Depth:		(in.)																																																																																																																								
Describe Record	od Data (stro																																																																																																																												
		am daulde monitorin	a well ae	vrial nhoto	s previou	s insnerti	ons) if available		N/A																																																																																																																				
		am gauge, monitorin	ig well, ae	erial photo	s, previou	s inspecti	ons), if available:		N/A																																																																																																																				
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Remarks: SOILS Map Unit Name	:	Blg1A1 - Blount sil	t loam, g	round mo	praine, 0-	-2% slope	es																																																																																																																						
Remarks: SOILS Map Unit Name	:	Blg1A1 - Blount sil	t loam, g	round mo	praine, 0-	-2% slope				ore Lining, M=Matrix)																																																																																																																			
Remarks: SOILS Map Unit Name	:	Blg1A1 - Blount sil	t loam, g	round mo	praine, 0-	-2% slope	CS			ore Lining, M=Matrix)		Texture																																																																																																																	
Remarks: SOILS Map Unit Name Profile Descrip	tion (Describe to t	Blg1A1 - Blount sil	t loam, g	round model of	praine, 0-	-2% slope	CS	=Covered/Coated Sand Grai		ore Lining, M=Matrix)		Texture ay, sand,	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top	tion (Describe to to Bottom Depth	BIg1A1 - Blount sil	t loam, g Idicator or confirm	n the absence of Matrix (Moist)	praine, 0- indicators.) (Typ	-2% slope	2S ion, D=Depletion, RM=Reduced Matrix, CS= Red	=Covered/Coated Sand Grai	ns; Location: PL=Pc	1	(e.g. cla	y, sand,	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0	tion (Describe to the second s	BIg1A1 - Blount sil the depth needed to document the in Horizon 1	t Ioam, g idicator or confirm Color 10YR	round ma m the absence of Matrix (Moist) 4/2	praine, 0- indicators.) (Typ % 100	2% slop(e: C=Concentrat	es ion, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 	=Covered/Coated Sand Grai lox Features % 	ns; Location: PL=Pc Type 	Location 	(e.g. cla	ay, sand, <mark>lay loam</mark>	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 	tion (Describe to the second s	BIg1A1 - Blount sil the depth needed to document the in Horizon 1	t Ioam, g Idicator or confirm Color 10YR 	round mo m the absence of Matrix (Moist) 4/2 	Draine, 0- indicators.) (Typ % 100 	2% slope e: C=Concentral	es ion, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 	=Covered/Coated Sand Grai lox Features % 	ns: Location: PL=Pc Type 	Location 	(e.g. cla	ay, sand, lay loam 	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 	tion (Describe to the second s	BIg1A1 - Blount sil the depth needed to document the in Horizon 1 	t Ioam, g dicator or confirm Color 10YR 	round mo m the absence of Matrix (Moist) 4/2 	oraine, 0- indicators.) (Typ % 100 	2% slop(e: C=Concentral	es ion, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 	=Covered/Coated Sand Grai lox Features % 	ns: Location: PL=Pc Type 	Location 	(e.g. cla	ay, sand, lay loam 	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 	tion (Describe to the second s	BIg1A1 - Blount sil the depth needed to document the in Horizon 1	t Ioam, g Idicator or confirm Color 10YR 	round mo m the absence of Matrix (Moist) 4/2 	Draine, 0- indicators.) (Typ % 100 	2% slope e: C=Concentral	es ion, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 	=Covered/Coated Sand Grai lox Features % 	ns: Location: PL=Pc Type 	Location 	(e.g. cla	ay, sand, lay loam 	loam)																																																																																																																
Remarks: SOILS Map Unit Name Profile Descrip Top Depth 0 	tion (Describe to the second s	BIg1A1 - Blount sil the depth needed to document the in Horizon 1 	t Ioam, g dicator or confirm Color 10YR 	round mo m the absence of Matrix (Moist) 4/2 	oraine, 0- indicators.) (Typ % 100 	2% slop(e: C=Concentral	es ion, D=Depletion, RM=Reduced Matrix, CS= Red Color (Moist) 	=Covered/Coated Sand Grai lox Features % 	ns: Location: PL=Pc Type 	Location 	(e.g. cla	ay, sand, lay loam 	loam)																																																																																																																
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Midwest Region

Project/Site:	Marysville Connector					Wetland ID: Wetland 4 Sample Point: SP10
VEGETATION		percase are non-na	tive spec	ies.)		
Tree Stratum (Ple	ot size: 30 ft radius)					
	<u>Species Name</u>			Dominant	Ind.Status	Dominance Test Worksheet
1.						
2.						Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
3.						
4.						Total Number of Dominant Species Across All Strata: 1 (B)
5.						
6.						Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: <u>Multiply by:</u>
10.		T 1 1 0				OBL spp. x 1 =
		Total Cover =	0			FACW spp. x 2 =
0 11 101 1 01						FACW spp. x 2 = FAC spp. x 3 = FACU spp. x 4 = UPL spp. x 5 =
	atum (Plot size: 15 ft radius)					FACU spp. X 4 =
1. 2.						UPL spp X 5
3.						
4.						Total(A)(B)
5.						Prevalence Index = B/A =
<u> </u>						
7.						
8.						Hydrophytic Vegetation Indicators:
9.						• Yes • No Rapid Test for Hydrophytic Vegetation
10.						 Yes No Dominance Test is > 50%
10.		Total Cover =	0			• Yes • No Prevalence Index is $\leq 3.0^{*}$
			U			
Lianh Chratture (Dia	taine. F ft madium)					
1.	ot size: 5 ft radius) Poa pratensis		90	Y	FAC	 Yes No Problem Hydrophytic Vegetation (Explain) *
2.	Taraxacum officinale		5	N	FAC	* Indicators of hydric soil and wetland hydrology must be
3.	Plantago lanceolata		5	N	FACU	present, unless disturbed or problematic.
4.						Definitions of Vegetation Strata:
5.						Demittoris of vegetation Strata.
6						
7.						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
<u> </u>						ft. tall.
11.						
11.						Herb - All herbaceous (non-woody) plants, regardless of size,
12.						and woody plants less than 3.28 ft. tall.
13.						
14.						Woody Vines - All woody vines greater than 3.28 ft. in height.
15.		Tatal Oaver				Woody Villes - An woody villes groater and 0.20 ft. in holgit.
		Total Cover =	100			
	um (Plot size: 30 ft radius)					
1.						
2.						Hudernheite Venstetten Descent – V
3.						Hydrophytic Vegetation Present · Yes · No
4.						
5.		Total Cavar -				
Domortici		Total Cover =	0			
Remarks:						

B.2 ORAM FORMS



	Ohio Rapid Assessment Metho 10 Page Form for Wetland Cat	
Version 5.0	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <u>http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx</u>

Background Information

Name: Angela Sjollema
Date: 11/20/2019
Affiliation: Stantec Consulting Services Inc.
Address: 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204
Phone Number: 614-643-4400
e-mail address: angela.sjollema@stantec.com
Name of Wetland: Wetland 1
Vegetation Communit(ies): PEM
HGM Class(es): Depression
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. Hwy 33
in wetland 1
Dacobs C best Horse and Horse and
Lat/Lang or LITM Coordinate
Lat/Long or UTM Coordinate 40.183979, -83.254306
Marysville and Shawnee Hills Topo Quads
Township County Union
Section and Subsection
Hydrologic Unit Code 50600011904 (Sugar Run)
Site Visit 11/20/2019
National Wetland Inventory Map Yes
Ohio Wetland Inventory Map No
Soil Survey Union County Soil Survey
Delineation report/map Figure 4 - Wetland and Waterbody Delineation Report

Name of Wetland: Wetland 1			
Vetland Size (acres, hectares): 1.12 acre			
Sketch: Include north arrow, relationship w	twey 33	egetation zones, etc.	
PEM PEM			Culve
A	g Field)	UDF X Stream
14 19 19			
omments, Narrative Discussion, Justifica	tion of Category Changes:		
etland is fed by three sources: storr ainage from the agricultural fields, a	nwater runoff from Higl and Stream 4.	nway 33 and Beecher - Gai	nble Road, tile
inal score : 32		Category:	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.

tland 1	Angela Sjollema		11/20/2019
#	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), <u>http://www.dnr.state.oh.us/dnap</u>. 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.

Wetland 1

Angela Sjollema

11/20/2019

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO X 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 X 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>Phalaris arundinacea, 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 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <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	NO X Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO X 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.	NO Go to Question 8b

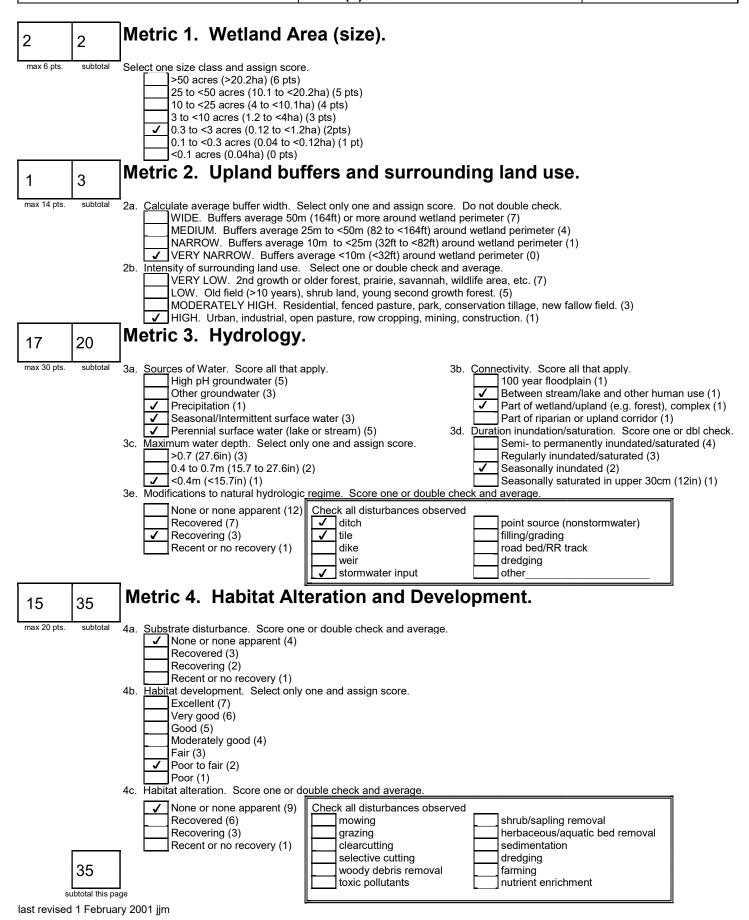
Wetland 1	Angela Sjollema		11/20/2019
8b	Mature forested wetlands . Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO X Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands . Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO X Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	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.	Go to Question 10 YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland.	NO X Go to Question 11
11	Relict Wet Prairies . Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

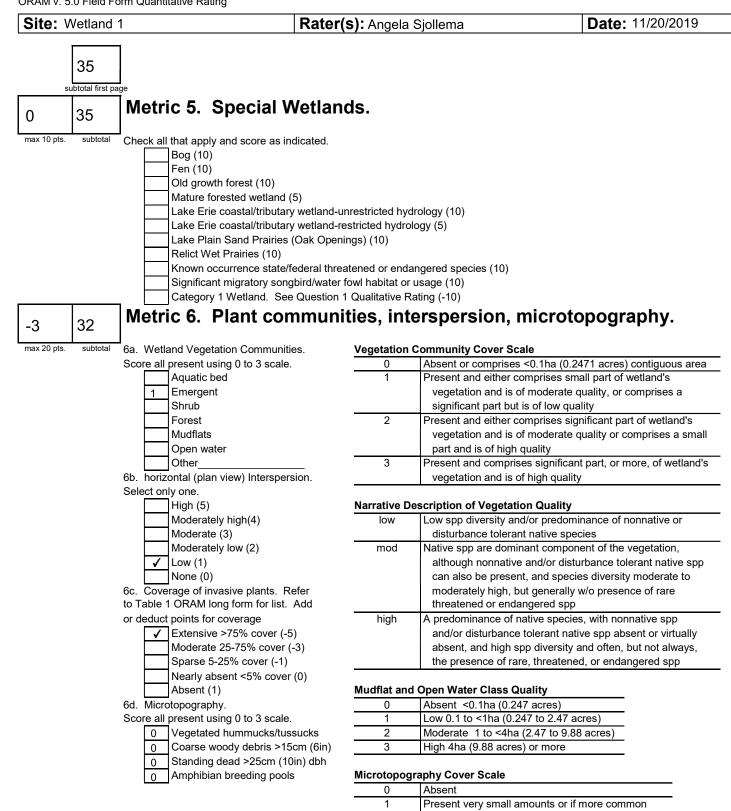
Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumit
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellin
	Salix serissima	Xyris difformis		C
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Wetland 1





End of Quantitative Rating. Complete Categorization Worksheets.

2

3

of marginal quality

and of highest quality

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

Present in moderate or greater amounts

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also 1 or 2.
Quantitative Rating	Metric 1. Size	2	
J	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	17	
	Metric 4. Habitat	15	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	32	Category based on se breakpoints Category 2

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

End of Ohio Rapid Assessment Method for Wetlands.

Final Category

Category 2

Category 3

Category 1

Choose one

Category 2

	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization				
Version 5.0	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001			

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <u>http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx</u>

Background Information

Name: Michelle Kearns	
Date: 11/20/2019	
Affiliation: Stantec Consulting Services Inc.	
Address: 1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204	
Phone Number: 614-486-4383	
e-mail address: michelle.kearns@stantec.com	
Name of Wetland: Wetland 2	
Vegetation Communit(ies): PEM	
HGM Class(es): Depression	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	X I
Ag fuld	TN
Adelsberger Rd	ang pang dalam kanang di kanang pang dalam kanang di kanang di kanang di kanang di kanang di kanang di kanang d
withand 2	
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AR FILH	3
0	E
	MN
	N
Lat/Long or UTM Coordinate 40.196261, -83.29241	
USGS Quad Name Marysville Topo Quad	
County Union	
Township	
Section and Subsection	
Hydrologic Unit Code 50600010604 (Lower Mill Creek)	
Site Visit 11/20/2019	
National Wetland Inventory Map Yes	
Ohio Wetland Inventory Map No	
Soil Survey Union County Soil Survey	
Delineation report/map Figure 4 - Wetland and Waterbody Delineation Report	

tland Size (acres, hectares): 0.10 acres		
tch: Include north arrow, relationship with other surface w	vaters veretation zones etc	
ten mende north arrow, relationship with other surface w	Alers, vogetation zones, etc.	21
	·)	N
Ag fuld		
i alla alla		
A TILL I	21	
Adel Sperger	ed	
Wetland 2		
C. WHUNO Z	·]	
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nments, Narrative Discussion, Justification of Category Ch	hanges:	
nal score : 25	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.

etland 2	Michelle Kearns	11/20/2019	
#	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), <u>http://www.dnr.state.oh.us/dnap</u>. 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.

Wetland 2

Michelle Kearns

11/20/2019

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland.	NO X 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	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>Phalaris arundinacea, 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 1 wetland Go to Question 6	NO X 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	NO X 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	NO X Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

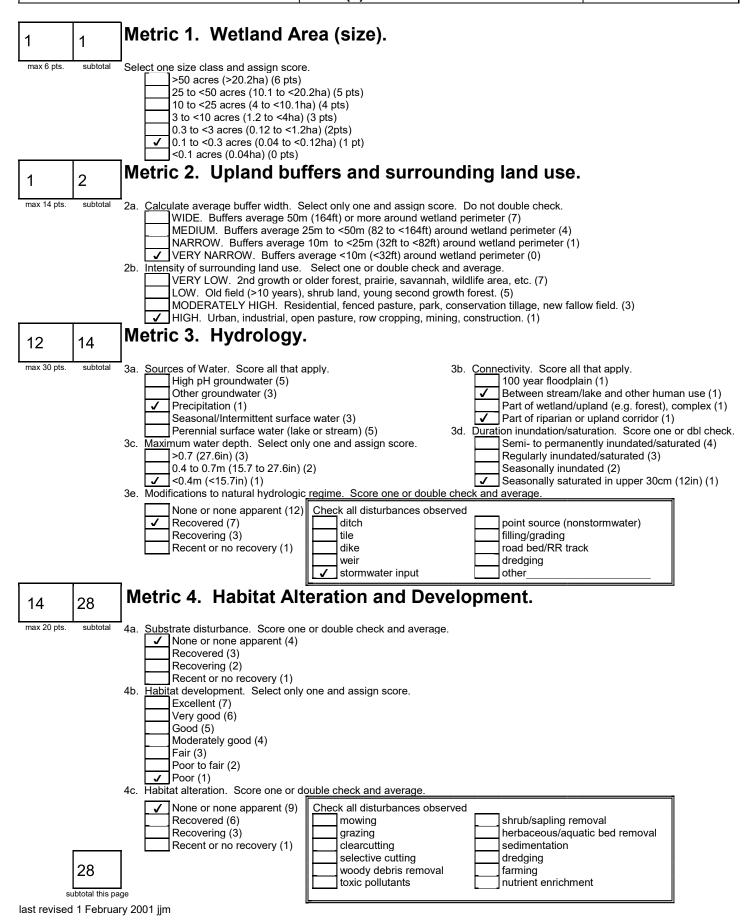
Wetland 2	Michelle Kearns		11/20/2019
8b	Mature forested wetlands . Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO X Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands . Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO X Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	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.	Go to Question 10 YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland.	NO X Go to Question 11
11	Relict Wet Prairies . Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

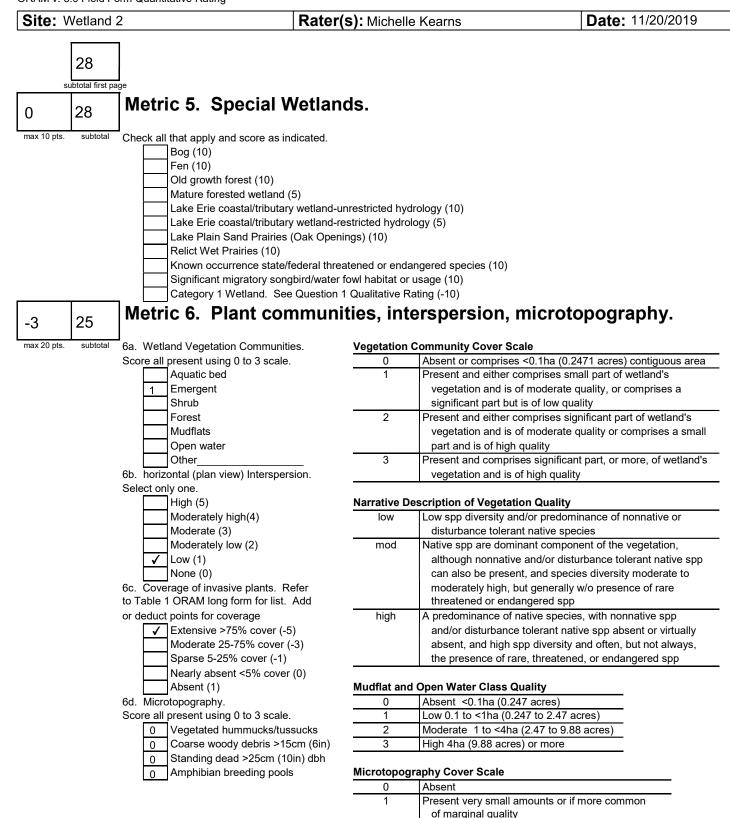
Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumi
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellin
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		C
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Wetland 2





End of Quantitative Rating. Complete Categorization Worksheets.

2

3

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

Present in moderate or greater amounts

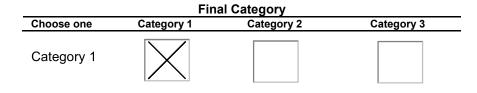
and of highest quality

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also 1 or 2.
Quantitative Rating	Metric 1. Size	1	
5	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	14	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	25	Category based on se 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, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NOX	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> 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	NOX	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NOX	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the <i>"gray zone"</i> for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NOX	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.



End of Ohio Rapid Assessment Method for Wetlands.

	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization				
Version 5.0	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001			

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

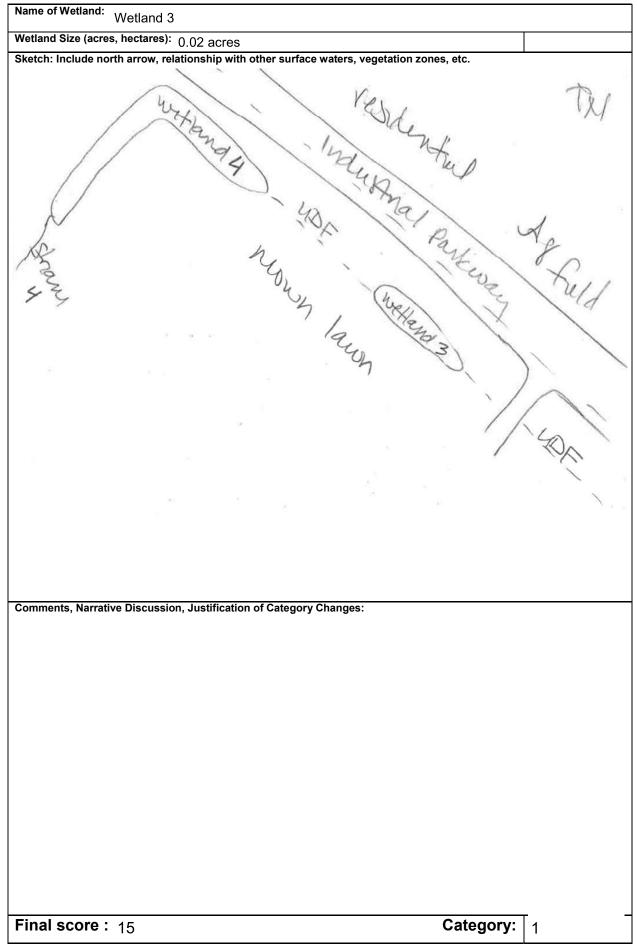
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Background Information

Name: Michelle Kearns	
Date: 11/20/2019	
Affiliation:	
Stantec Consulting Services Inc.	
1500 Lake Shore Drive, Suite 100, Columbus, Ohio 43204	
Phone Number: 614-486-4383	
e-mail address: michelle.kearns@stantec.com	
Name of Wetland: Wetland 3	
Vegetation Communit(ies): PEM	
HGM Class(es): Depression	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
	T
Industrial	
UDF Workland Parkioan	
+ (arkur	
Withand 3	
na 3	
//- OF	
Lat/Long or LITM Coordinate	
Lat/Long or UTM Coordinate 40.199725, -83.3033	
USGS Quad Name Marysville Topo Quad	
County Union	
Township	
Section and Subsection	
Hydrologic Unit Code 50600010604 (Lower Mill Creek)	
Site Visit 11/20/2019	
National Wetland Inventory Map Yes	
Ohio Wetland Inventory Map No	
Soil Survey Union County Soil Survey	
Delineation report/map Figure 4 - Wetland and Waterbody Delineation Report	



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.

etland 3	Michelle Kearns		11/20/2019
#	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), <u>http://www.dnr.state.oh.us/dnap</u>. 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.

Wetland 3

Michelle Kearns

11/20/2019

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland.	NO X 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	NO So 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, 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 1 wetland Go to Question 6	NO So 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	NO X Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO X 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 X Go to Question 8b

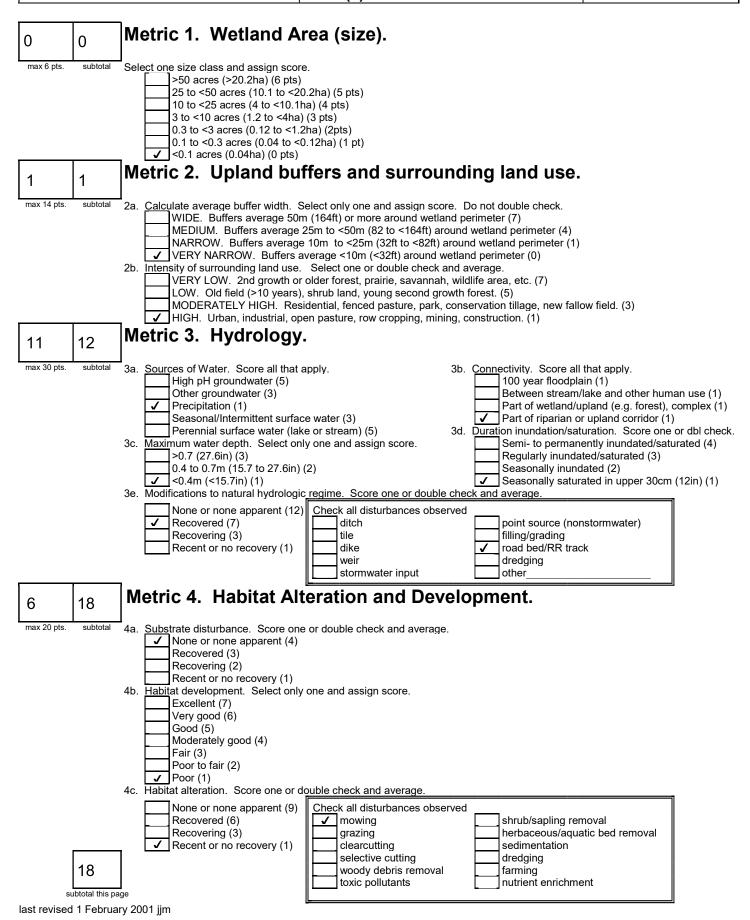
Wetland 3	Michelle Kearns		11/20/2019
8b	Mature forested wetlands . Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO X Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands . Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO X Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	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.	Go to Question 10 YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland.	NO X Go to Question 11
11	Relict Wet Prairies . Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

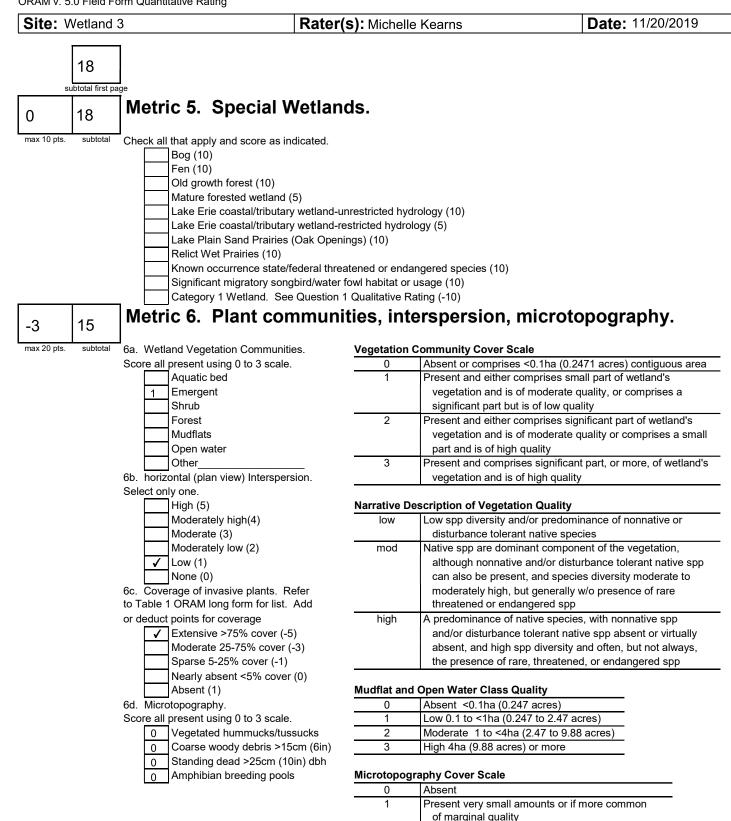
Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumi
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellin
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellii
	Salix serissima	Xyris difformis		C
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Wetland 3





End of Quantitative Rating. Complete Categorization Worksheets.

2

3

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

Present in moderate or greater amounts

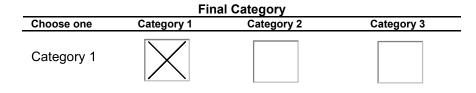
and of highest quality

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also 1 or 2.
Quantitative Rating	Metric 1. Size	0	
U	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	6	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	15	Category based on so 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, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NOX	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> 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	NOX	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NOX	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the <i>"gray zone"</i> for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NOX	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.



End of Ohio Rapid Assessment Method for Wetlands.

	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization		
Version 5.0	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001	

Instructions

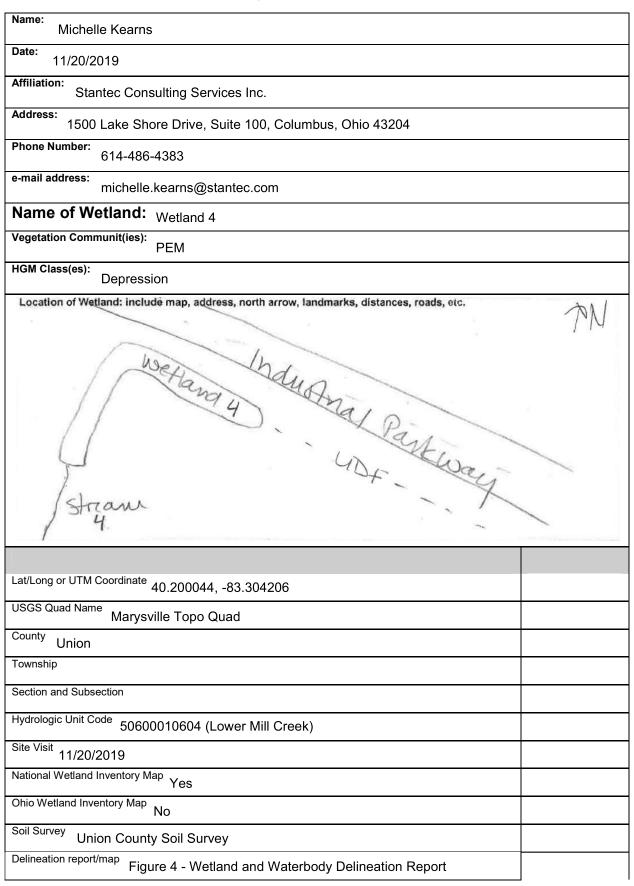
The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland *may* be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To *properly* answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <u>http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx</u>

Background Information



Name of Wetland: Wetland 4	
Wetland Size (acres, hectares): 0.06 acres	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	N
Final score : 34 Category: 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.

etland 4	Michelle Kearns		11/20/2019
#	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), <u>http://www.dnr.state.oh.us/dnap</u>. 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.

Wetland 4

Michelle Kearns

11/20/2019

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland.	NO X 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
1	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 So 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, 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 1 wetland Go to Question 6	NO So to Question 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	NO X Go to Question 7
<u>-</u>	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	NO X Go to Question 8a
3a	"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.	NO So to Question 8b

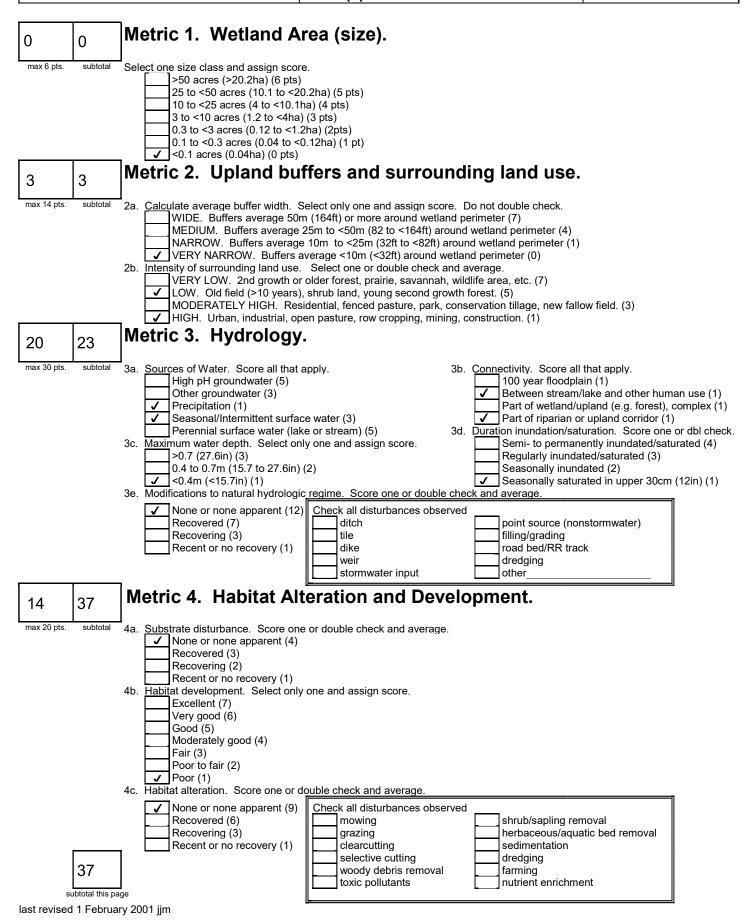
Wetland 4	Michelle Kearns		11/20/2019
8b	Mature forested wetlands . Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO X Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands . Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	NO X Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	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.	Go to Question 10 YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO X Go to Question 11
11	Relict Wet Prairies . Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

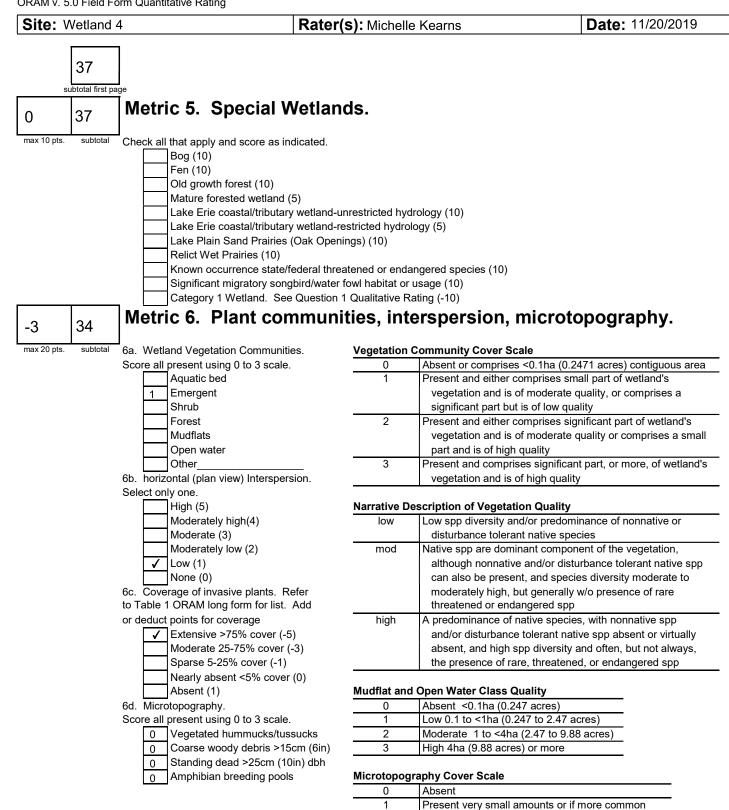
Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherodes
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumit
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellita
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwellii
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrewsii
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum		Helianthus grosseserratus
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicata
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflora
	Parnassia glauca	Schechzeria palustris		Lythrum alatum
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianum
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceum
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutans
	Salix candida	Vaccinium oxycoccos		Spartina pectinata
	Salix myricoides	Woodwardia virginica		Solidago riddellin
	Salix serissima	Xyris difformis		C
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: Wetland 4





End of Quantitative Rating. Complete Categorization Worksheets.

2

3

of marginal quality

and of highest quality

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

Present in moderate or greater amounts

8

34

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	NO	If yes, Category 3.
	Question 4. Significant bird habitat	NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	NO	If yes, Category 1.
	Question 6. Bogs	NO	If yes, Category 3.
	Question 7. Fens	NO	If yes, Category 3.
	Question 8a. Old Growth Forest	NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	NO	If yes, evaluate for Category 3; may also 1 or 2.
	Question 10. Oak Openings	NO	If yes, Category 3
	Question 11. Relict Wet Prairies	NO	If yes, evaluate for Category 3; may also 1 or 2.
Quantitative Rating	Metric 1. Size	0	
U	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	20	
	Metric 4. Habitat	14	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-3	
	TOTAL SCORE	34	Category based on se breakpoints Category 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	YES Wetland is categorized as a Category 3 wetland	NOX	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> 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	NOX	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NOX	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES Wetland is assigned to the appropriate category based on the scoring range	NOX	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 <i>"gray zone"</i> for Category 1 or 2 or Category 2 or 3 wetlands?	YES X Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category				
Choose one	Category 1	Category 2	Category 3	
Category 1		\mathbf{X}		

End of Ohio Rapid Assessment Method for Wetlands.

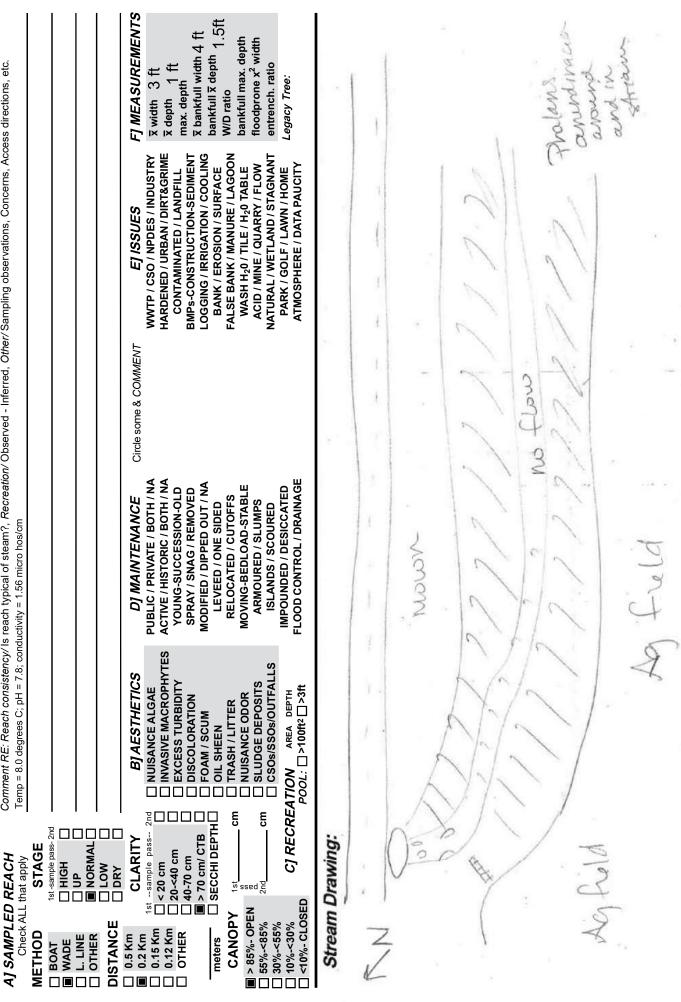
B.3 QHEI FORMS





Qualitative Habitat Evaluation Index

ChioEPA	Qualitative Habit and Use Assess		()	El Score:	37
Stream & Location: Stream 1 / 0	•		<i>RM:</i>	Date: 1	
River Code:	Scorer STORET #:	s Full Name & Affiliation		Stantec Consulti 2490	
1] SUBSTRATE Check ONLY Two		(NAD 83 - decimal °) 40 . 1	<u>194 183.</u>	2490	Office verified location
BEST TYPES POOL RIFFL BLDR /SLABS [10]	every type present OTHER TYPES POO A DETRITUS [3] D DETRITUS [3] D SILT [2] C ARTIFICIAL [0] (Score natural substration	A ORIGIN 40 ILIMESTONE [30 TILLS [1] 20 HARDPAN [0] 20 RIP/RAP [0]	0] SILT [0] (DDEO) [0]	average) QUALIT HEAVY [-2] MODERATE NORMAL [0 FREE [1] EXTENSIVE MODERATE NORMAL [0 NONE [1]	E [-1] Substrate
2] INSTREAM COVER Indicate pr quality; 2- quality; 3-Highest quality in moderate c diameter log that is stable, well develop UNDERCUT BANKS [1] 2 OVERHANGING VEGETATION SHALLOWS (IN SLOW WATER) ROOTMATS [1] Comments	Moderate amounts, but not of h r greater amounts (e.g., very la bed rootwad in deep / fast water POOLS > 70cm [2] [1] ROOTWADS [1]	ighest quality or in small amo rge boulders in deep or fast w	unts of highest vater, large onal pools. [/ATERS [1] [PHYTES [1] [Check ONE (Or 2 EXTENSIVE >7 MODERATE 29 SPARSE 5-<25 NEARLY ABSE	2 & average) 75% [11] 5-75% [7] 5% [3]
3] CHANNEL MORPHOLOGY C SINUOSITY DEVELOPMEN HIGH [4] EXCELLENT MODERATE [3] GOOD [5] LOW [2] FAIR [3] NONE [1] POOR [1] Comments FAIR [3]	NT CHANNELIZATI	ON STABILITY HIGH [3] MODERATE LOW [1]			hannel aximum 20
4] BANK EROSION AND RIPA River right looking downstream				& average)	
	DERATE 10-50m [3]	FLOOD PLAIN QU OREST, SWAMP [3] HRUB OR OLD FIELD [2] ESIDENTIAL, PARK, NEW FI ENCED PASTURE [1] OPEN PASTURE, ROWCROF		predominant land	STRIAL [0] RUCTION [0] d use(s)
Comments		i Liti Aorone, nowonor			<i>iparian</i> iximum 10
Check ONE (ONLY!) Check □ > 1m [6] □ POOL W □ 0.7-<1m [4]	IANNEL WIDTH CONE (Or 2 & average) IDTH > RIFFLE WIDTH [2] IDTH = RIFFLE WIDTH [1] IDTH < RIFFLE WIDTH [0]		/ [1] STITIAL [-1] MITTENT [-2] S [1]		ontact Contact
	Check ONE Check ONE	(Or 2 & average). / RUN SUBSTRATE	RIFFLE / RUN		FLE [metric=0]
	/IUM > 50cm [2] □ STABLE (6 /IUM < 50cm [1] □ MOD. STA □ UNSTABLI			ONE [2] DW [1] ODERATE [0] KTENSIVE [-1] _{Ma}	Riffle / Run aximum 0
					8
DRAINAGE AREA 🛛 🔳	VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]	%POOL:(0 %RUN:(0) %GLIDE		radient aximum 10
EPA 4520					06/16/06



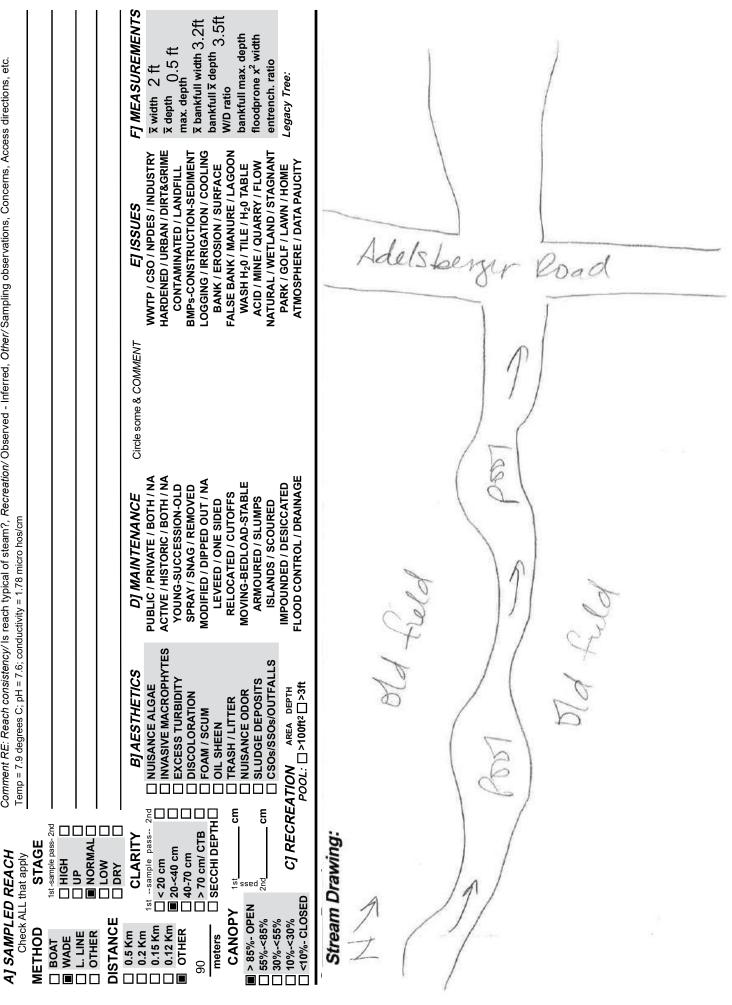
Comment RE: Reach consistency/Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 41

	<u>a</u>	10 03E A336	5331110111	Tield Sheet			
Stream & Location:	Stream 2 / COŀ	H Marysville Connec	ctor		RM:	Date:	11/20/19
		Sc	orers Full N	lame & Affiliation:	M. Kearns	/ Stantec Consi	ulting Services
River Code: -	- 8	OC STORET #:		Long.: 40 . 195		2912	Office verified location
1] SUBSTRATE Check	CONLY Two subs	strate TYPE BOXES;					
 estimation 	ate % or note eve	erv type present		Check (ONE (<i>Or 2</i> &	- /	
BEST TYPES	POOL RIFFLE	OTHER TYPES	POOL RIFFLE				
BLDR /SLABS [10]	!	HARDPAN [4]	<u>×</u>			HEAVY [-2	
BOULDER [9]					SILT		
							[0]
GRAVEL [7]		■ □ SILT [2] □ □ ARTIFICIAL [0]	<u> </u>	HARDPAN [0]			/F 1-21
	I	(Score natural s			SEDDEDN.		
NUMBER OF BEST 1		more [2] sludge from	n point-sources		ый ^х		[0] Maximum 20
		r less [0]		SHALE [-1]	-	NONE [1]	20
Comments				COAL FINES [-2]			
2] INSTREAM COVE	R Indicate prese	nce 0 to 3: 0-Absent;	1-Very small an	ounts or if more commo	on of margina	al AMOL	ЈИТ
- quality; 3 -Highest quality i	quality; 2-Mod	erate amounts, but no	of highest qua	ality or in small amounts	of highest	Check ONE (O	r 2 & average)
diameter log that is stable	, well developed	rootwad in deep / fast	water, or deep,	well-defined, functional	pools.		• /
UNDERCUT BANK	S [1]	POOLS > 700	cm [2] (OXBOWS, BACKWATE	RS [1]	MODERATE	25-75% [7]
OVERHANGING VE		ROOTWADS	[1]	AQUATIC MACROPHY	TES [1]	SPARSE 5-<	25% [3]
SHALLOWS (IN SL	OW WATER) [1]	BOULDERS	[1]	LOGS OR WOODY DE	BRIS [1]	NEARLY AB	SENT <5% [1]
ROOTMATS [1]							Cover
Comments						٨	Maximum 4
							20
3] CHANNEL MORPH	IOLOGY Chec	k ONE in each catego	ry (Or 2 & aver	age)			
-	ELOPMENT	CHANNELIZ		STABILITY			
	EXCELLENT [7]	NONE [6]		HIGH [3]			
	GOOD [5]		1]	MODERATE [2]			
	AIR [3]		[3]	LOW [1]			
	POOR [1]	RECENT OR NO	D RECOVERY [1]			Channel
Comments						Λ	Maximum 12
4] BANK EROSION A	AND RIPARIA	NZONE Check ON	IE in each categ	ory for EACH BANK (C	r 2 per bank	& average)	
River right looking downstrea	^{am} RIPAF		D FLO	OD PLAIN QUALI	TY		
		50m [4]	🗖 FOREST, S	SWAMP [3]	ΔÔ	CONSERVATIO	N TILLAGE [1]
🔲 🗎 NONE / LITTLE [3]	MODER	ATE 10-50m [3]		R OLD FIELD [2]		JRBAN OR IND	
MODERATE [2]				IAL, PARK, NEW FIELD) [1] 🗆 🗆 I	MINING / CONS	TRUCTION [0]
HEAVY / SEVERE [1		ARROW < 5m [1]		ASTURE [1]	Indicate	e predominant la	nd use(s)
		0]		STURE, ROWCROP [0]	past 10	Óm riparian.	Riparian
Comments						٨	Maximum 8
							10
5] POOL / GLIDE AN							
MAXIMUM DEPTH		NNEL WIDTH	CUF	RRENT VELOCITY	,	Recreation	
Check ONE (ONLY!)		IE (Or 2 & average)		heck ALL that apply		Primary	Contact
□ > 1m [6]		H > RIFFLE WIDTH [2]		TIAL [-1] 🔲 SLOW [1]		Secondary	
□ 0.7-<1m [4]		H = RIFFLE WIDTH [1]				(circle one and co	mment on back)
□ 0.4-<0.7m [2] ■ 0.2-<0.4m [1]		H < RIFFLE WIDTH [0]	│ □ FAST [1] □ MODERA				Page /
□ < 0.2m [0]				for reach - pools and ri			Pool / Current
Comments				,		٨	Maximum 🛛 🖉 📗
							12
				nough to support	a popula	tion 📃 🗤 🖉	
of riffle-obligate			ONE (<i>Or 2 & av</i>	- /			RIFFLE [metric=0]
RIFFLE DEPTH	RUN D				FLE / RUI		DNESS
BEST AREAS > 10cm [2		l > 50cm [2] 🗌 STAE				ONE [2]	
BEST AREAS 5-10cm [1		I < 50cm [1] ☐ MOD				OW [1]	Riffle /
BEST AREAS < 5cm [metric=0]	a		TABLE (e.g., Fii	ne Gravel, Sand) [0]		ODERATE [0]	
<i>Comments</i>					ΠE	TENSIVE [-1]	Maximum
							8
6] GRADIENT (32.9	ft/mi) 🔲 VEF	RY LOW - LOW [2-4]		%POOL:(60)	%GLIDE	$\cdot 40$	Gradient
DRAINAGE AREA	мо	DERATE [6-10]		\succ		$ \ge$	Maximum 8
(1.42		H - VERY HIGH [10-6	1	%RUN: (0)	%RIFFLE	::(<u>)</u>	10
EPA 4520							06/16/06
							00/10/00



Comment RE: Reach consistency/Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

B.4 HHEI FORMS



ChieEPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION COH Marysville C		
SITE NUMBER SI	tream 3 RIVER BASIN DRAINAGE AREA (mi²) 0.55	
	LAT. 40.19628 LONG83.29725 RIVER CODE RIVER MILE	
DATE 11/20/19 SCORER M. Kearn	s COMMENTS intermittent, culverted	
NOTE: Complete All Items On This Form	- Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	
STREAM CHANNEL NONE / NAT	URAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY	
1. SUBSTRATE (Estimate percent of ever	ry type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	
TYPE PE BLDR SLABS [16 pts]	ERCENT TYPE SILT [3 pt] PERCENT O%	
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts] 0% Substrate 0% Max = 40	
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 100%	1
GRAVEL (2-64 mm) [9 pts]	0% □ MUCK [0 pts] 0% 1 0% □ □ ARTIFICIAL [3 pts] 0% 1	
Total of Percentages of 0 Bldr Slabs, Boulder, Cobble, Bedrock	.00% (A) Substrate Percentage 100% (B) A + B	
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: 0 TOTAL NUMBER OF SUBSTRATE TYPES: 1	
	aximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Dep	
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]	I culverts or storm water pipes) (Check ONLY one box): Max = 30 > 5 cm - 10 cm [15 pts] Max = 30	0
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	1
✓ > 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 20	1
3 BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ONLY one box): Bankful	II.
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width ✓ ≤ 1.0 m (<=3' 3") [5 pts] Max=30	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		-
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 0.90 5	
	This information <u>must</u> also be completed	-
	LAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream	
<u>RIPARIAN WIDTH</u> L R (Per Bank)	<u>FLOODPLAIN QUALITY</u> L R (Most Predominant per Bank) L R	
Wide >10m	Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Irban or Industrial	
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	
✓ ✓ None	Fenced Pasture Mining or Construction	
FLOW REGIME (At Time of Eval		
Stream Flowing Subsurface flow with isolated pool	ls (Interstitial) Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
COMMENTS_		
	er 61 m (200 ft) of channel) (Check ONLY one box):	
✓ 0.5	1.0 2.0 3.0 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	Moderate (2 ft/100 ft) Moderate to Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes 🖌 No QHEI Score (If Yes, At	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: Mill Creek	Distance from Evaluated Stream 2.00
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	ED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Marysville NRCS Soil Map	
County: Union Township / City: Miller	reek Township
MISCELLANEOUS	
Base Flow Conditions? (Y/N): <u>Y</u> Date of last precipitation: <u>11/11/19</u>	Quantity: 0.11
Photograph Information: _upstream, downstream, substrates	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
	. and attach results) Lab Number:
Field Measures: Temp (°C) 7.30 Dissolved Oxygen (mg/l) pH (S.U.)	6.80 Conductivity (µmhos/cm) 2,980
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections option ID number. Include appropriate field data sheets from the P Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) N Aquatic Macroinvertebra Comments Regarding Biology:	rimary Headwater Habitat Assessment Manual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	
FLOW No FLOW Afield Old Field	de fuld Ag fuld

G

ChieEPA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

21

SITE NAME/LOCATION COH Marysville Connector	
SITE NUMBER Stream 4 RIVER BASIN DRAINAGE AREA (mi ²) 0.	53
LENGTH OF STREAM REACH (ft) 92 LAT. 40.19995 LONG83.30434 RIVER CODE RIVER MILE	
DATE 11/20/19 SCORER M. Kearns COMMENTS ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ictions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE BLDR SLABS [16 pts] 0% SILT [3 pt] 0% BOULDER (>256 mm) [16 pts] 0% SILT [3 pt] 0% 0% BEDROCK [16 pt] 0% SILT RATE (Estimate percent of every type of substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric Points Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 100% GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0% SAND (<2 mm) [6 pts]	1
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B) Check 100% Check 100% (Check 100% Check 100% Check 100% (Check 100% Check 100% Check 100% (Check 100% Check 100% Check 100% Check 100% (Check 100% Check 100% Check 100% Check 100% (Check 100% Check 100\% Check 100% C	A + B
	Deel Deet
 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] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 	Pool Depti Max = 30
COMMENTS MAXIMUM POOL DEPTH (centimeters): 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ✓ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters): 0.90	5
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ************************************	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Image: Narrow <5m	ρ
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 1.5 2.5 33	
STREAM GRAD <u>IENT ESTIMATE</u>	

	No QHEI Score	(If Yes, Attach Complete	d QHEI Form)	
DOWNSTREAM DESIGNATED	USE(S)		_	
WWH Name:		Distance f	rom Evaluated Stream	
CWH Name:		Distance fr	om Evaluated Stream	
✓ EWH Name: _Mill Creek		Distance from	om Evaluated Stream	2.00
MAPPING: ATTACH COPIES O	F MAPS, INCLUDING THE ENTIRE	WATERSHED AREA. CLE	ARLY MARK THE SITE L	OCATION
JSGS Quadrangle Name: Marysville	NR	CS Soil Map Page:	NRCS Soil Map Stream	Order
County: Union	Township /	City:Millcreek Township)	
MISCELLANEOUS				
Base Flow Conditions? (Y/N): Y D	ate of last precipitation: 11	/11/19 Quantity	. 0.11	
Photograph Information: upstream, dow	nstream, substrates			
Elevated Turbidity? (Y/N): N	Canopy (% open): 100%]		
Nere samples collected for water chemist	rry? (Y/N): _ Y (Note lab san	nple no. or id. and attach res	sults) Lab Number:	
Field Measures: Temp (°C) 4.70 D	issolved Oxygen (mg/l)	pH (S.U.) 6.60 Cond	luctivity (µmhos/cm)	870
s the sampling reach representative of the	e stream (Y/N)	se explain:		
	· · · · · · · · · · · · · · · · · · ·			
	cord all observations. Voucher colle . Include appropriate field data shee (Y/N) N Salamanders Obser Voucher? (Y/N) N Aquatic Ma	ets from the Primary Headwar ved? (Y/N) N Voucher	ter Habitat Assessment Ma ? (Y/N)	anual)
Include important landmarks and other	VE DESCRIPTION OF STRE features of interest for site evaluation WWWN JAMM			in
ow	~~~~	Weissional Low	-Ew	etland 4

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Appendix C PHOTOGRAPHS







Photo Location 1.View of cropland habitat. Photograph taken facing northeast.



Photo Location 2. View of cropland habitat. Photograph taken facing southeast.





Photo Location 3. View of cropland habitat. Photograph taken facing south.



Photo Location 4. View of maintained right-of-way and State Route 33. Photograph taken facing west.





Photo Location 5. View of Stream 1. Photograph taken facing upstream, northwest.



Photo Location 5. View of Stream 1. Photograph taken facing downstream, southeast.





Photo Location 5. View of Stream 1, typical substrates.



Photo Location 6. View of Wetland 1 (SP01). Photograph taken facing north.





Photo Location 6. View of Wetland 1 (SP01). Photograph taken facing east.



Photo Location 6. View of Wetland 1 (SP01). Photograph taken facing south.





Photo Location 6. View of Wetland 1 (SP01). Photograph taken facing west.



Photo Location 7. View of Wetland 1 (SP03). Photograph taken facing north.





Photo Location 7. View of Wetland 1 (SP03). Photograph taken facing east.



Photo Location 7. View of Wetland 1 (SP03). Photograph taken facing south.



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Photo Location 7. View of Wetland 1 (SP03). Photograph taken facing west.



Photo Location 8. View of old field habitat and cropland habitat. Photograph taken facing northeast.



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Photo Location 9. View of developed/urban habitat and maintained right-of-way. Photograph taken facing south.



Photo Location 10. View of maintained lawn habitat. Photograph taken facing east.





Photo Location 11. View of cropland habitat. Photograph taken facing east.



Photo Location 12. View of Stream 2. Photograph taken facing upstream, south.





Photo Location 12. View of Stream 2. Photograph taken facing downstream, north.



Photo Location 12. View of Stream 2, typical substrates.





Photo Location 13. View of Wetland 2. Photograph taken facing north.



Photo Location 13. View of Wetland 2. Photograph taken facing east.





Photo Location 13. View of Wetland 2. Photograph taken facing south.



Photo Location 13. View of Wetland 2. Photograph taken facing west.





Photo Location 14. View of Stream 3. Photograph taken facing upstream, south.



Photo Location 14. View of Stream 3. Photograph taken facing downstream, north.





Photo Location 14. View of Stream 3, typical substrates.



Photo Location 15. View of old field habitat. Photograph taken facing east.



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Photo Location 16. View of cropland habitat. Photograph taken facing northwest.



Photo Location 17. View of maintained right-of-way. Photograph taken facing southeast.



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Photo Location 18. View of maintained lawn habitat. Photograph taken facing west.



Photo Location 19. View of Wetland 3. Photograph taken facing north.





Photo Location 19. View of Wetland 3. Photograph taken facing east.



Photo Location 19. View of Wetland 3. Photograph taken facing south.



Photo Location 19. View of Wetland 3. Photograph taken facing west.



Photo Location 20. View of Wetland 4. Photograph taken facing north.



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Photo Location 20. View of Wetland 4. Photograph taken facing east.



Photo Location 20. View of Wetland 4. Photograph taken facing south.





Photo Location 20. View of Wetland 4. Photograph taken facing west.



Photo Location 21. View of early successional habitat and Stream 4. Photograph taken facing upstream, southwest.





Photo Location 21. View of Stream 4. Photograph taken facing downstream, northeast.



Photo Location 21. View of Stream 4, typical substrates.





Photo Location 22. View of maintained lawn habitat. Photograph taken facing northwest.