

Figure No.
4

**Wetland and Waterbody
Delineation Map**

Client/Project
Columbia Gas of Ohio
Willard Lateral Replacement Project

Project Location
Huron County, Ohio

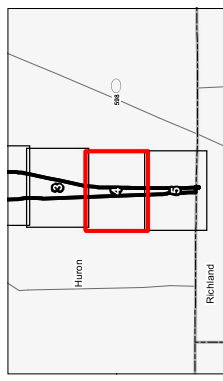
19370-032
Prepared by JLR on 2017-08-04
Technical Review by KJC on 2017-09-22
Independent Review by JLR on 2017-09-22

0 100 200 Feet
12,400 (At original document size of 11x17)

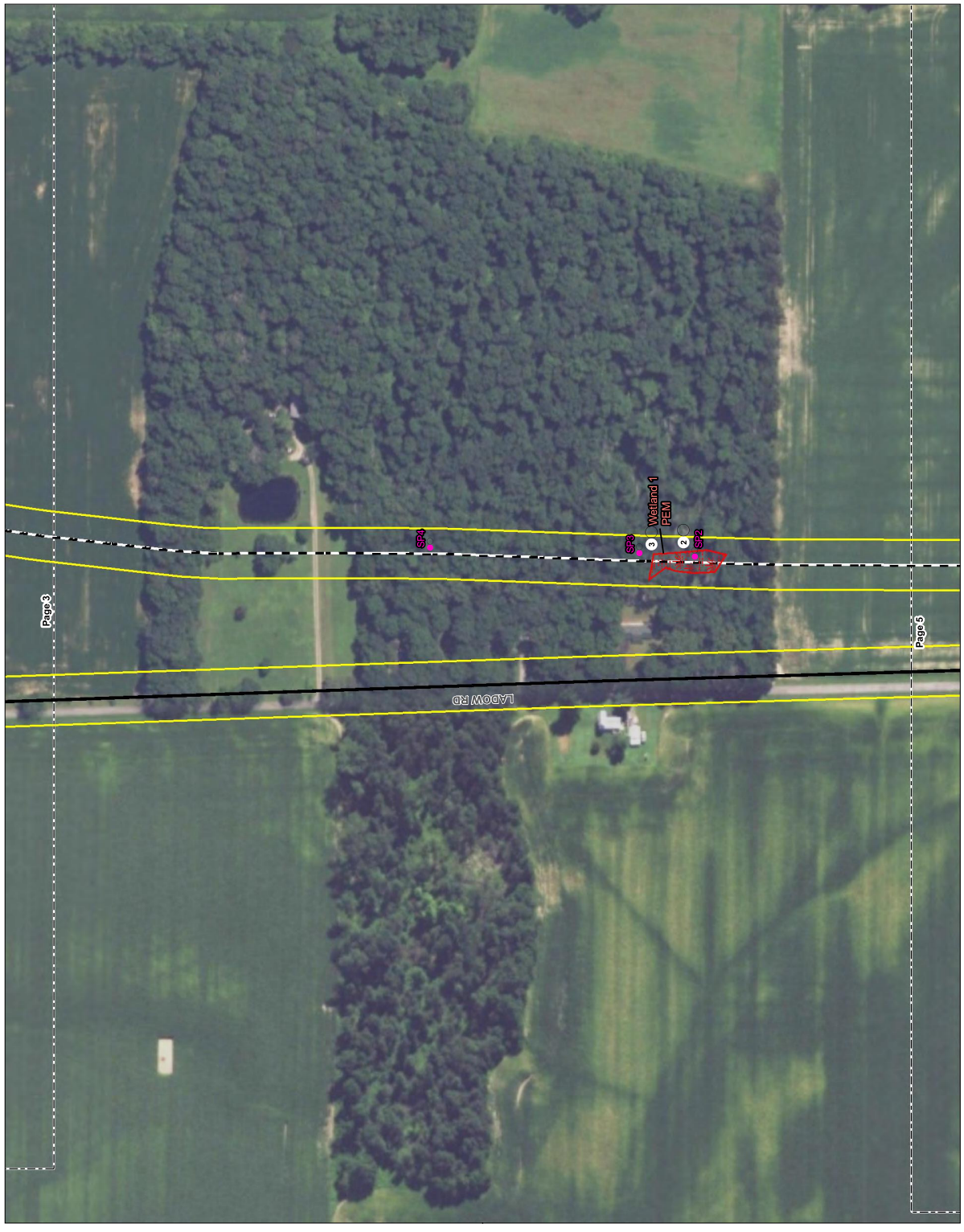
Legend

- Alternate Route
- Preferred Route
- Project Area (100' Survey Corridor)
- Existing Culvert
- Welland Determination Sample Point
- Photo Location
- Field Delineated Waterway
- Field Delineated Emergent Wetland
- FEMA Flood Hazard Area*
- 100-year Flood Zone
- 100-year Floodway

*No features within data frame



- Notes**
1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
 2. Data Sources include: Stantec, Columbia Gas, NADS, USGS, FEMA, OGRIP
 3. Orthophotography: NAIP 2015



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Figure No.

4

Title

Wetland and Waterbody Delineation Map

Client/Project

Columbia Gas of Ohio
Willard Lateral Replacement Project

Project Location

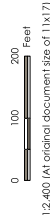
Huron County, Ohio

19370-032

Prepared by JLR on 2017-08-04

Technical Review by KJC on 2017-09-22

Independent Review by JLR on 2017-09-27



Legend

Alternate Route

Preferred Route

Project Area (100' Survey Corridor)

Existing Culvert

Welland Determination Sample Point

Photo Location

Field Delineated Waterway

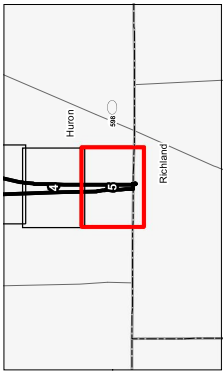
Field Delineated Emergent Wetland

FEMA Flood Hazard Area*

100-year Flood Zone

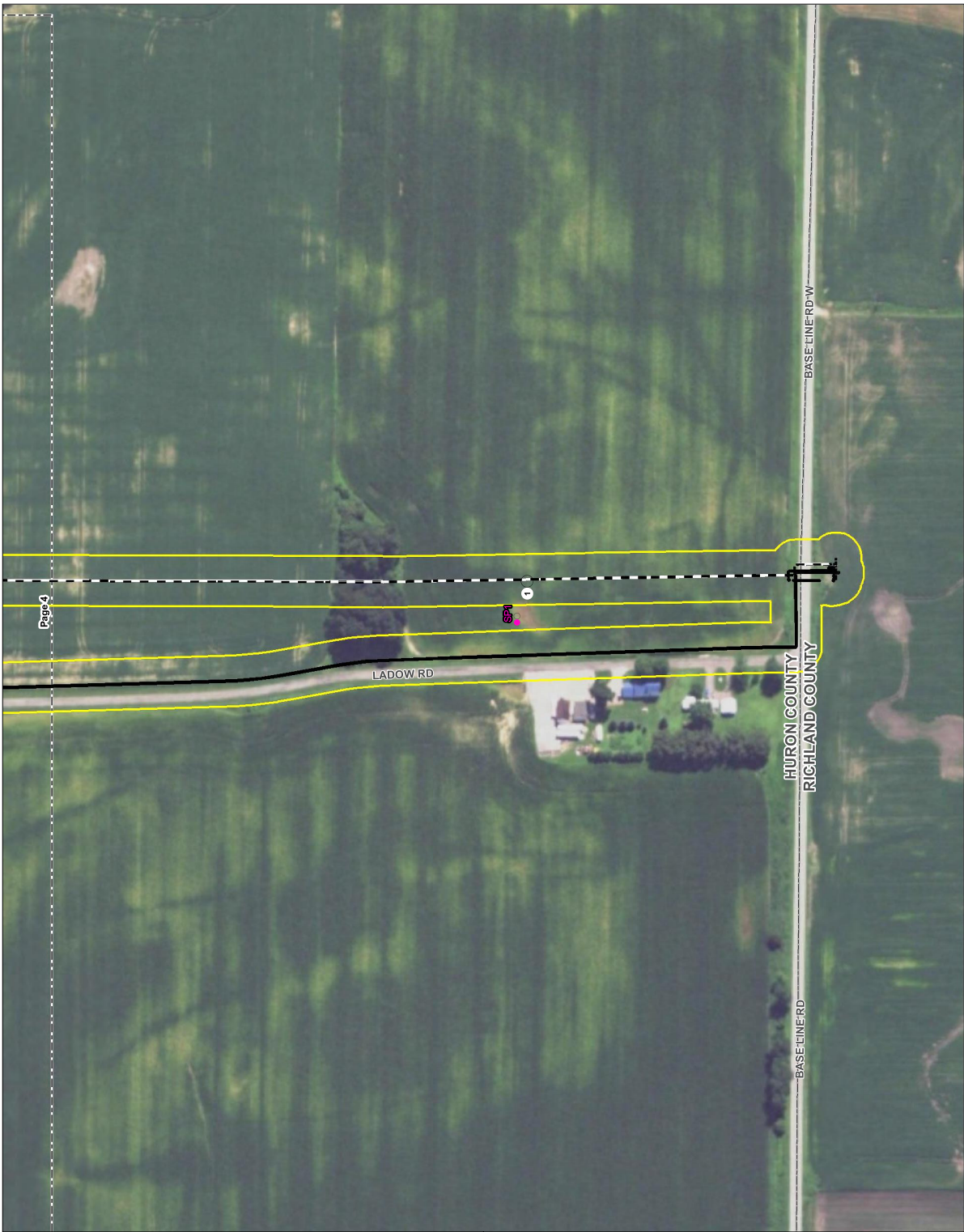
100-year Floodway

*No features within data frame



Notes

1. Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet
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WILLARD LATERAL REPLACEMENT PROJECT: WETLANDS AND WATERBODIES DELINEATION REPORT

Appendix B DataSheets
September 28, 2017

Appendix B DATASHEETS

WILLARD LATERAL REPLACEMENT PROJECT: WETLANDS AND WATERBODIES DELINEATION REPORT

Appendix B DataSheets
September 28, 2017

B.1 QHEI FORMS



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

34

Stream & Location: Stream 1

RM: _ _ _ Date: 8 / 22 / 17

Columbia Gas of Ohio - Willard Lateral

Scorers Full Name & Affiliation: Michelle Kearns / Stantec Consulting

River Code: - - - STORET #: - - - Lat./ Long.: 41 . 01336 182.7067 Office verified location ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY		Substrate Maximum 20
	POOL RIFFLE		POOL RIFFLE					
☐ BLDR /SLABS [10]	☐	☐ HARDPAN [4]	☐	☐ LIMESTONE [1]	☐	☒ HEAVY [-2]		7
☐ BOULDER [9]	☐	☐ DETRITUS [3]	☐	☒ TILLS [1]	☐	☐ MODERATE [-1]		
☐ COBBLE [8]	☒	☐ MUCK [2]	☒	☐ WETLANDS [0]	☐	☐ NORMAL [0]		
☒ GRAVEL [7]	☒	☐ SILT [2]	☒	☐ HARDPAN [0]	☐	☐ FREE [1]		
☐ SAND [6]	☐	☐ ARTIFICIAL [0]	☒	☐ SANDSTONE [0]	☐	☐ EXTENSIVE [-2]		
☐ BEDROCK [5]	☐			☐ RIP/RAP [0]	☐	☒ MODERATE [-1]		
(Score natural substrates; ignore sludge from point-sources)				☐ LACUSTURINE [0]	☐	☐ NORMAL [0]		
NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]				☐ SHALE [-1]	☐	☐ NONE [1]		
Comments				☐ COAL FINES [-2]				

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☐ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☐ MODERATE 25-75% [7]
☐ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☐ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☒ NEARLY ABSENT <5% [1]

Comments

Cover
Maximum
20

2

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☒ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☐ MODERATE [2]
☒ LOW [2]	☐ FAIR [3]	☐ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☒ POOR [1]	☒ RECENT OR NO RECOVERY [1]	

Comments

Channel
Maximum
20

7

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION	RIPIARIAN WIDTH	FLOOD PLAIN QUALITY	
☒ NONE / LITTLE [3]	☐ WIDE > 50m [4]	☐ FOREST, SWAMP [3]	☐ CONSERVATION TILLAGE [1]
☐ MODERATE [2]	☐ MODERATE 10-50m [3]	☐ SHRUB OR OLD FIELD [2]	☐ URBAN OR INDUSTRIAL [0]
☐ HEAVY / SEVERE [1]	☐ NARROW 5-10m [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ MINING / CONSTRUCTION [0]
	☒ VERY NARROW < 5m [1]	☐ FENCED PASTURE [1]	
	☐ NONE [0]	☒ OPEN PASTURE, ROWCROP [0]	

Comments

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10

4

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)

☐ > 1m [6]
☐ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☒ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)

☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply

☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool /
Current
Maximum
12

4

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS	Riffle / Run Maximum 8
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]	
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]	
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]	
			☐ EXTENSIVE [-1]	

Comments

No Riffle, No run

6] GRADIENT (26.9 ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA ☐ MODERATE [6-10]
(7.79 mi²) ☒ HIGH - VERY HIGH [10-6]%POOL: 90 %GLIDE:
%RUN: %RIFFLE: 10Gradient
Maximum
10

10

AJ SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☐ WADE
☐ L. LINE
☐ OTHER

DISTANCE

- ☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER

STAGE

- 1st --sample pass-- 2nd
☐ HIGH
☐ UP
☐ NORMAL
☐ LOW
☐ DRY

CLARITY

- 1st --sample pass-- 2nd
☐ < 20 cm
☐ 20-<40 cm
☐ 40-70 cm
☐ > 70 cm/ C/TB
☐ SECCHI DEPTH

meters

CANOPY

- ☐ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☐ 10%-<30%
☐ <10%- CLOSED

- 1st _____ cm
2nd _____ cm

CJ RECREATION

POOL: ☐ >100ft² ☐ >3ft

BJ AESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

CJ RECREATION

POOL: ☐ >100ft² ☐ >3ft

DJ MAINTENANCE

- ☐ PUBLIC / PRIVATE / BOTH / NA
☐ ACTIVE / HISTORIC / BOTH / NA
☐ YOUNG-SUCCESSION-OLD
☐ SPRAY / SNAG / REMOVED
☐ MODIFIED / DIPPED OUT / NA
☐ LEVEED / ONE SIDED
☐ RELOCATED / CUTOFFS
☐ MOVING-BEDLOAD-STABLE
☐ ARMoured / SLUMPS
☐ ISLANDS / SCoured
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

EJ ISSUES

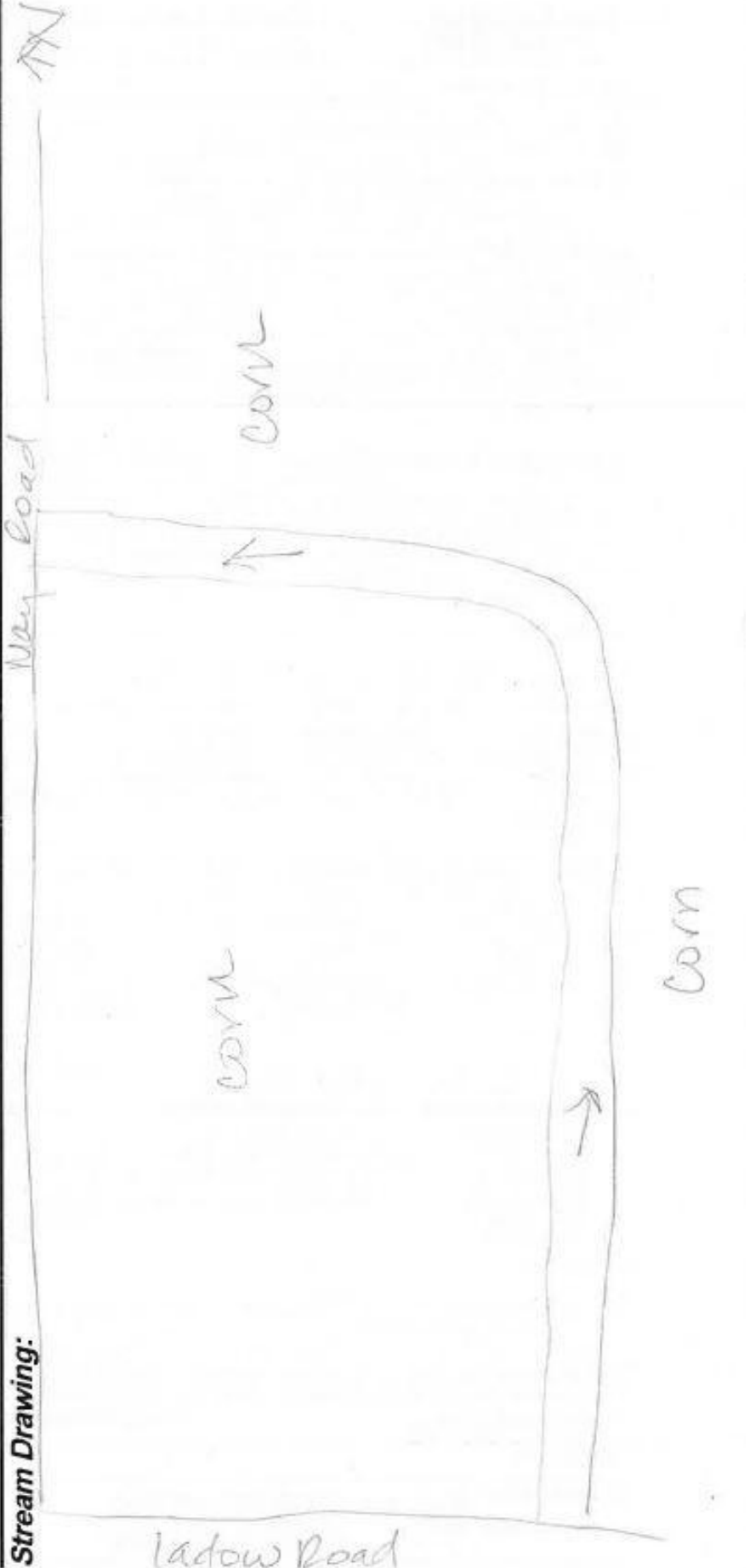
- ☐ WWTP / CSO / NPDES / INDUSTRY
☐ HARDENED / URBAN / DIRT&GRIME
☐ CONTAMINATED / LANDFILL
☐ BMPs-CONSTRUCTION-SEDIMENT
☐ LOGGING / IRRIGATION / COOLING
☐ BANK / EROSION / SURFACE
☐ FALSE BANK / MANURE / LAGOON
☐ WASH H₂O / TILE / H₂O TABLE
☐ ACID / MINE / QUARRY / FLOW
☐ NATURAL / WETLAND / STAGNANT
☐ PARK / GOLF / LAWN / HOME
☐ ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- ☐ $\bar{x}$ width
☐ $\bar{x}$ depth
☐ max. depth
☐ $\bar{x}$ bankfull width
☐ bankfull $\bar{x}$ depth
☐ W/D ratio
☐ bankfull max. depth
☐ floodprone $\bar{x}^2$ width
☐ entrench. ratio

Legacy Tree:

Stream Drawing:



WILLARD LATERAL REPLACEMENT PROJECT: WETLANDS AND WATERBODIES DELINEATION REPORT

Appendix B DataSheets
September 28, 2017

B.2 WDF FORMS

Project/Site: Willard Lateral Replacement Project		Stantec Project #: 193704252		Date: 08/22/17						
Applicant: Columbia Gas of Ohio				County: Huron						
Investigator #1: Michelle Kearns		Investigator #2: Angela Sjollema		State: Ohio						
Soil Unit: Lenawee silty clay loam		NWI/WWI Classification: PEM1A		Wetland ID: SP01						
Landform: --		Local Relief: Concave		Sample Point: SP01						
Slope (%): 1%		Latitude: 40.9971 Longitude: -82.707912		Community ID: Upland						
Datum: WGS 1984				Section: --						
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Township: --						
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Range: -- Dir: --						
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?										
SUMMARY OF FINDINGS										
Hydrophytic Vegetation Present? ☒ Yes ☐ No		Hydric Soils Present? ☐ Yes ☒ No								
Wetland Hydrology Present? ☒ Yes ☐ No		Is This Sampling Point Within A Wetland? ☒ Yes ☐ No								
Remarks:										
HYDROLOGY										
Wetland Hydrology Indicators (Check here if indicators are not present ☐):										
<u>Primary:</u> ☒ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface ☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B14 - True Aquatic Plants ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ D9 - Gauge or Well Data ☐ Other (Explain in Remarks) <u>Secondary:</u> ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D5 - FAC-Neutral Test										
Field Observations: Surface Water Present? ☒ Yes ☐ No Depth: 1-2" (in.) Water Table 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: N/A										
Remarks:										
SOILS										
Map Unit Name: Lenawee silty clay loam										
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)										
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%	Color (Moist)	%	Type	Location		
0	18	--	10YR	2/1	100	--	--	--	--	loam
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
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NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒): ☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions Indicators for Problematic Soils ¹ ☐ A16 - Coast Prairie Redox ☐ S7 - Dark Surface ☐ F12 - Iron-Manganese Masses ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)										
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.										
Restrictive Layer (If Observed) Type: N/A		Depth: N/A		Hydric Soil Present? ☐ Yes ☒ No						
Remarks:										

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: **Willard Lateral Replacement Project** Wetland ID: **0** Sample Point: **SP01**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Scutellaria galericulata</i>	7	Y	OBL
2.	<i>Cyperus esculentus</i>	3	Y	FACW
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		10		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks: **90% open ground. Sample point is located in an active row crop field.**

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **2** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp. _____
FACW spp. _____
FAC spp. _____
FACU spp. _____
UPL spp. _____

Total _____ (B)

Hydrophytic Vegetation Indicators:

- ☒ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☐ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

WETLAND DETERMINATION DATA FORM Midwest Region

Project/Site: Willard Lateral Replacement Project		Stantec Project #: 193704252		Date: 08/22/17							
Applicant: Columbia Gas of Ohio				County: Huron							
Investigator #1: Michelle Kearns		Investigator #2: Angela Sjollema		State: Ohio							
Soil Unit: Lenawee silty clay loam		NWI/WWI Classification: N/A		Wetland ID: Wetland 1							
Landform: --		Local Relief: Concave		Sample Point: SP02							
Slope (%): 1%		Latitude: 41.0011 Longitude: -82.70755		Community ID: PEM							
Datum: WGS 1984				Section: --							
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Township: --							
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Range: -- Dir: --							
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Wetland Hydrology Indicators (Check here if indicators are not present ☐):											
Primary: ☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface ☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B14 - True Aquatic Plants ☐ C1 - Hydrogen Sulfide Odor ☒ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ D9 - Gauge or Well Data ☐ Other (Explain in Remarks) Secondary: ☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☒ D5 - FAC-Neutral Test											
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SOILS											
Map Unit Name: Lenawee silty clay loam											
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)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	2	--	10YR	4/2	97	5YR	4/6	3	C	PL	loam
2	18	--	10YR	2/1	97	10YR	5/6	3	C	M	clay loam
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--	--
NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):					Indicators for Problematic Soils ¹						
☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat					☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☒ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions						
					☐ A16 - Coast Prairie Redox ☐ S7 - Dark Surface ☐ F12 - Iron-Manganese Masses ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)						
Restrictive Layer (If Observed) Type: N/A Depth: N/A					Hydric Soil Present? ☒ Yes ☐ No						
Remarks:											

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: **Willard Lateral Replacement Project** Wetland ID: **Wetland 1** Sample Point: **SP02**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	<u>Species Name</u>	<u>% Cover</u>	<u>Dominant</u>	<u>Ind. Status</u>
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		0		

Herb Stratum (Plot size: 5 ft radius)

1.	<i>Echinochloa crus-galli</i>	65	Y	FACW
2.	<i>Leersia oryzoides</i>	30	Y	OBL
3.	<i>Penthorum sedoides</i>	20	N	OBL
4.	<i>Persicaria sagittata</i>	5	N	OBL
5.	<i>Cyperus esculentus</i>	5	N	FACW
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		125		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp. _____
FACW spp. _____
FAC spp. _____
FACU spp. _____
UPL spp. _____

Total _____ (B)

Hydrophytic Vegetation Indicators:

- ☒ Yes ☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes ☐ No Dominance Test is > 50%
☐ Yes ☐ No Prevalence Index is ≤ 3.0 *
☐ Yes ☐ No Morphological Adaptations (Explain) *
☐ Yes ☐ No Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

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

Hydrophytic Vegetation Present ☒ Yes ☐ No

Additional Remarks:

Project/Site: Willard Lateral		Stantec Project #: 193704252		Date: 08/22/17							
Applicant: Columbia Gas of Ohio				County: Huron							
Investigator #1: Michelle Kearns		Investigator #2: Angela Sjollema		State: Ohio							
Soil Unit: Haskins loam, 0-3% slopes	Local Relief: Convex		NWI/WWI Classification: N/A	Wetland ID: Wetland 1							
Landform: Toeslope	Latitude: 41.0014		Longitude: -82.707534	Sample Point: SP03							
Slope (%): 2%	Datum: WGS 1984			Community ID: Upland							
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: --							
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: --							
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: -- Dir: --							
SUMMARY OF FINDINGS											
Hydrophytic Vegetation Present? ☐ Yes ☒ No		Hydric Soils Present? ☐ Yes ☒ No									
Wetland Hydrology Present? ☐ Yes ☒ No		Is This Sampling Point Within A Wetland? ☒ Yes ☐ No									
Remarks:											
HYDROLOGY											
Wetland Hydrology Indicators (Check here if indicators are not present ☒):											
<u>Primary:</u>		<u>Secondary:</u>									
☐ 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									
☐ B5 - Iron Deposits	☐ C7 - Thin Muck Surface	☐ D5 - FAC-Neutral Test									
☐ B7 - Inundation Visible on Aerial Imagery	☐ D9 - Gauge or Well Data										
☐ B8 - Sparsely Vegetated Concave Surface	☐ Other (Explain in Remarks)										
Field Observations:											
Surface Water Present? ☐ Yes ☒ No	Depth: (in.)	Wetland Hydrology Present? ☐ Yes ☒ No									
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:											
SOILS											
Map Unit Name: Haskins loam, 0-3% 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)											
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Type	Location	Texture (e.g. clay, sand, loam)
			Color (Moist)	%	Color (Moist)	%					
0	4	--	10YR	2/2	100	--	--	--	--	--	clay loam
4	18	--	10YR	2/2	98	5YR	3/4	2	C	PL	clay 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	☐ 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										
☐ 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											
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.											
Restrictive Layer (If Observed)		Type: N/A		Depth: N/A							
				Hydric Soil Present? ☐ Yes ☒ No							
Remarks:											

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: **Willard Lateral** Wetland ID: **Wetland 1** Sample Point: **SP03**

VEGETATION (Species identified in all uppercase are non-native species.)				
Tree Stratum (Plot size: 30 ft radius)				
1.	Species Name	% Cover	Dominant	Ind. Status
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Cover =		0		
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.	Species Name	% Cover	Dominant	Ind. Status
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total Cover =		0		
Herb Stratum (Plot size: 5 ft radius)				
1.	Species Name	% Cover	Dominant	Ind. Status
2.	<i>Trifolium pratense</i>	30	Y	FACU
3.	<i>Echinochloa crus-galli</i>	25	Y	FACW
4.	<i>Setaria pumila</i>	15	N	FAC
5.	<i>Setaria faberi</i>	5	N	FACU
6.	<i>Toxicodendron radicans</i>	5	N	FAC
7.	<i>Medicago lupulina</i>	5	N	FACU
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
Total Cover =		85		
Woody Vine Stratum (Plot size: 30 ft radius)				
1.	Species Name	% Cover	Dominant	Ind. Status
2.				
3.				
4.				
5.				
Total Cover =		0		
Remarks: 15% open ground.				

Additional Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	0	x 1 =	0
FACW spp.	25	x 2 =	50
FAC spp.	20	x 3 =	60
FACU spp.	40	x 4 =	160
UPL spp.	0	x 5 =	0
Total		85 (A)	270 (B)
Prevalence Index = B/A =		3.176	

Hydrophytic Vegetation Indicators:

☐ Yes	☒ No	Rapid Test for Hydrophytic Vegetation
☐ Yes	☒ No	Dominance Test is > 50%
☐ Yes	☒ No	Prevalence Index is ≤ 3.0 *
☐ Yes	☐ No	Morphological Adaptations (Explain) *
☐ Yes	☐ No	Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

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

Hydrophytic Vegetation Present ☐ Yes ☒ No

Project/Site: Willard Lateral Replacement Project		Stantec Project #: 193704252		Date: 08/22/17						
Applicant: Columbia Gas of Ohio				County: Huron						
Investigator #1: Michelle Kearns		Investigator #2: Angela Sjollema		State: Ohio						
Soil Unit: Haskins loam, 0-3% slopes		NWI/WWI Classification: PFO1C		Wetland ID: SP04						
Landform: --		Local Relief: Convex		Sample Point: SP04						
Slope (%): 2%		Latitude: 41.0026 Longitude: -82.707497		Community ID: Upland						
Datum: WGS 1984				Section: --						
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Township: --						
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Range: -- Dir: --						
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?										
SUMMARY OF FINDINGS										
Hydrophytic Vegetation Present? ☐ Yes ☒ No		Hydric Soils Present? ☐ Yes ☒ No								
Wetland Hydrology Present? ☐ Yes ☒ No		Is This Sampling Point Within A Wetland? ☒ Yes ☐ No								
Remarks:										
HYDROLOGY										
Wetland Hydrology Indicators (Check here if indicators are not present ☒):										
<u>Primary:</u>		<u>Secondary:</u>								
☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface		☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B14 - True Aquatic Plants ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ D9 - Gauge or Well Data ☐ Other (Explain in Remarks)								
☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☐ D2 - Geomorphic Position ☐ D5 - FAC-Neutral Test										
Field Observations:										
Surface Water Present? ☐ Yes ☒ No Depth: (in.) Water Table 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: N/A										
Remarks:										
SOILS										
Map Unit Name: Haskins loam, 0-3% 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)										
Top Depth	Bottom Depth	Horizon	Matrix		Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)	%	Color (Moist)	%	Type	Location		
0	12	--	10YR	3/2	100	--	--	--	--	clay loam
12	18	--	10YR	6/2	100	--	--	--	--	clay loam
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--	--
NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):					Indicators for Problematic Soils ¹					
☐ A1- Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A10 - 2 cm Muck ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S3 - 5 cm Mucky Peat or Peat					☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ F1 - Loamy Muck Mineral ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions					
					☐ A16 - Coast Prairie Redox ☐ S7 - Dark Surface ☐ F12 - Iron-Manganese Masses ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)					
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.										
Restrictive Layer (If Observed)		Type: N/A Depth: N/A		Hydric Soil Present? ☐ Yes ☒ No						
Remarks:										

WETLAND DETERMINATION DATA FORM
Midwest Region

Project/Site: **Willard Lateral Replacement Project** Wetland ID: **0** Sample Point: **SP04**

VEGETATION (Species identified in all uppercase are non-native species.)				
Tree Stratum (Plot size: 30 ft radius)				
	<i>Species Name</i>	% Cover	Dominant	Ind. Status
1.	<i>Carya ovata</i>	15	Y	FACU
2.	<i>Ostrya virginiana</i>	5	Y	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		20		
Sapling/Shrub Stratum (Plot size: 15 ft radius)				
1.	<i>Acer rubrum</i>	5	Y	FAC
2.	<i>Acer saccharum</i>	5	Y	FACU
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
Total Cover =		10		
Herb Stratum (Plot size: 5 ft radius)				
1.	<i>Echinochloa crus-galli</i>	25	Y	FACW
2.	<i>Cirsium arvense</i>	25	Y	FACU
3.	<i>Rumex crispus</i>	20	N	FAC
4.	<i>Impatiens capensis</i>	20	N	FACW
5.	<i>Cyperus esculentus</i>	5	N	FACW
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
11.	--	--	--	--
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
Total Cover =		95		
Woody Vine Stratum (Plot size: 30 ft radius)				
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
Total Cover =		0		
Remarks:				

Additional Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	<u>0</u>	x 1 =	<u>0</u>
FACW spp.	<u>50</u>	x 2 =	<u>100</u>
FAC spp.	<u>25</u>	x 3 =	<u>75</u>
FACU spp.	<u>50</u>	x 4 =	<u>200</u>
UPL spp.	<u>0</u>	x 5 =	<u>0</u>
Total		<u>125</u> (A)	<u>375</u> (B)
Prevalence Index = B/A = <u>3.000</u>			

Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☐ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☐ No | Problem Hydrophytic Vegetation (Explain) * |
- * Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

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

Hydrophytic Vegetation Present ☐ Yes ☒ No

WILLARD LATERAL REPLACEMENT PROJECT: WETLANDS AND WATERBODIES DELINEATION REPORT

Appendix B DataSheets
September 28, 2017

B.3 ORAM FORMS

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	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."

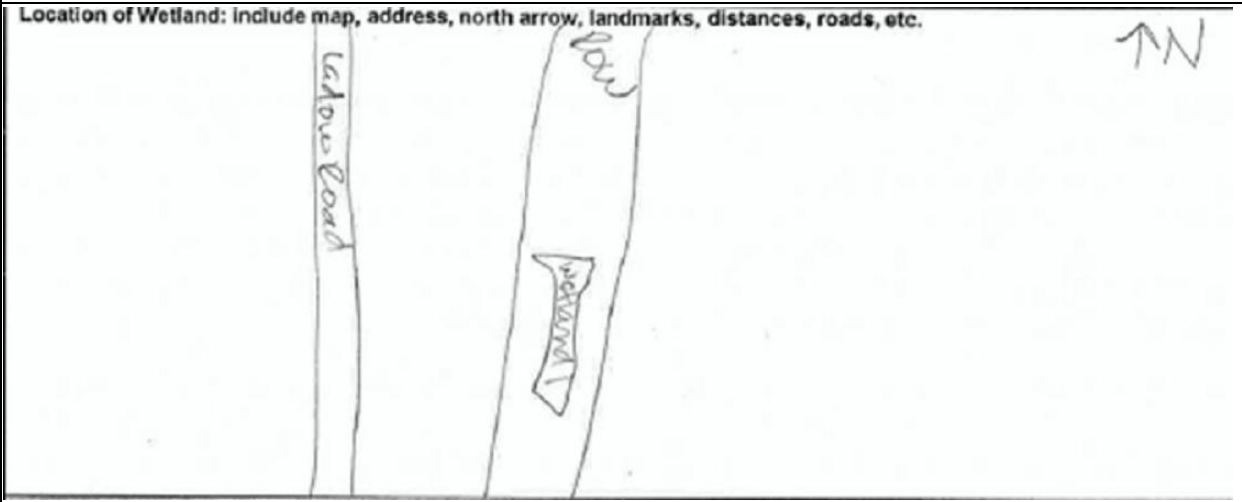
Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at: <http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

8/22/17

Wetland 1

Michelle Kearns

Background Information

Name:	Michelle Kearns
Date:	8/22/17
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Address:	1500 Lake Shore Drive, Suite 100, Columbus, Ohio
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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. 	
Lat/Long or UTM Coordinate	41.00116, -82.7076
USGS Quad Name	Willard, Ohio
County	Huron
Township	New Haven, Ohio
Section and Subsection	Not available
Hydrologic Unit Code	041000120401 - Marsh Run
Site Visit	8/22/17
National Wetland Inventory Map	Yes
Ohio Wetland Inventory Map	No
Soil Survey	Huron County Soil Survey
Delineation report/map	Figure 4

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.

Wetland 1

Michelle Kearns

8/22/17

#	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.	☒	☐
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.	☒	☐
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.	☒	☐
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.	☒	☐
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	☒	☐
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.	☒	☐

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

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), <http://www.dnr.state.oh.us/dnap>. 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

Michelle Kearns

8/22/17

#	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. Go to Question 3	NO ☒ Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES ☐ Wetland is a Category 3 wetland Go to Question 4	NO ☒ Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES ☐ Wetland is a Category 3 wetland Go to Question 5	NO ☒ Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES ☐ Wetland is a Category 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 Go to Question 7	NO ☒ Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (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 ☒ 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 1

Michelle Kearns

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES ☐ Wetland should be evaluated for possible Category 3 status. Go to Question 9a	NO ☒ Go to Question 9a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES ☐ Go to Question 9b	NO ☒ 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 Go to Question 10	NO ☐ Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES ☐ 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 ☒ 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	Oak Opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Site: Wetland 1**Rater(s):** Michelle Kearns**Date:** 8/22/17

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

8	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

15	24
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|--|--|
| ☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input | ☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other _____ |
|--|--|

10	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- | | |
|--|--|
| ☒ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☒ woody debris removal
☐ toxic pollutants | ☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment |
|--|--|

34

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: Wetland 1	Rater(s): Michelle Kearns	Date: 8/22/17
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34

subtotal first page

0

34

max 10 pts.

subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4

38

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- 2

 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other _____

6b. horizontal (plan view) Interspersions.

Select only one.

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

 Moderately low (2)
- ☐ Low (1)
- ☐ None (0)

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

- ☐ Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ✓

 Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- 0

 Vegetated hummocks/tussocks
- 0

 Coarse woody debris >15cm (6in)
- 0

 Standing dead >25cm (10in) dbh
- 0

 Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

38

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 1

Michelle Kearns

8/22/17

		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 be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	NO	If yes, evaluate for Category 3; may also be 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 be 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 be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersions, microtopography	4	
	TOTAL SCORE	38	Category based on score breakpoints Category 2

Complete Wetland Categorization Worksheet.

Wetland 1

Michelle Kearns

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES ☐ Wetland is categorized as a Category 3 wetland	NO ☒	Is quantitative rating score <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	NO ☒	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES ☐ Wetland is categorized as a Category 1 wetland	NO ☒	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 "gray zone" 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	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</i> OR <i>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.

Final Category

Choose one	Category 1	Category 2	Category 3
	☐	☒	☐

End of Ohio Rapid Assessment Method for Wetlands.

WILLARD LATERAL REPLACEMENT PROJECT: WETLANDS AND WATERBODIES DELINEATION REPORT

Appendix C Photographs
September 28, 2017

Appendix C **PHOTOGRAPHS**

Willard Lateral Replacement Project Wetland and Waterbodies Delineation Report



Photo Location 1: Representative agricultural row crop looking east.



Photo Location 2: Wetland 1, view north.

Willard Lateral Replacement Project Wetland and Waterbodies Delineation Report



Photo Location 2: Wetland 1, view east.



Photo Location 2: Wetland 1, view south.

**Willard Lateral Replacement Project
Wetland and Waterbodies Delineation Report**



Photo Location 2: Wetland 1, view west.



Photo Location 3: Upland sample point for Wetland 1, view east.

Willard Lateral Replacement Project Wetland and Waterbodies Delineation Report



Photo Location 4: Stream 1, upstream view west.



Photo Location 4: Stream 1, downstream view east.

**Willard Lateral Replacement Project
Wetland and Waterbodies Delineation Report**



Photo Location 4: Stream 1, view of substrates.



December 19, 2017
Tiffany Fritchley
Page 8 of 8

**Reference: UPDATE: Willard Lateral Replacement Project – Wetland and Waterbodies Delineation
and Threatened and Endangered Species Habitat**

ATTACHMENT D

AGENCY CORRESPONDENCE



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2017-TA-1807

Dear Ms. Sjollemma,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥ 3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥ 3 inches dbh during the summer roosting season may result in direct take of individuals. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, we recommend that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing

recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.**

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,



Dan Everson
Field Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate

Paul R. Baldridge, Chief
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November 27, 2017

Angela Sjollem
Stantec Consulting Services Inc.
1500 Lake Shore Drive, Suite 100
Columbus OH 43204-3800

Re: 17-665; Request for Environmental Review, Willard Lateral Replacement Project

Project: The proposed project involves the replacement of a section of pipeline between May Road and Baseline Road.

Location: The proposed project is located in New Haven Township, Huron County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has the following records at or within a one-mile radius of the project area:

Oak hickory forest plant community
Kenestrick Woods Conservation Site

The review was performed on the project area specified in the request as well as an additional one mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity.

A Conservation Site is an area deemed by the Natural Heritage Database to be a high quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that

rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

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

The project is within the range of the black sandshell (*Ligumia recta*), a state threatened mussel, and the pondhorn (*Unio merus tetralasmus*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The DOW recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the Blanding's turtle (*Emydoidea blandingii*), a state threatened species. This species inhabits marshes, ponds, lakes, streams, wet meadows, and swampy forests. Although essentially aquatic, the Blanding's turtle will travel over land as it moves from one wetland to the next. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as adjacent drier upland habitat. Due to the location, the type of habitat at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the cattle egret (*Bubulcus ibis*), a state endangered bird. Cattle egrets are not strictly wetland birds. They often forage in dry pastures and fields. Egrets nest in colonies and will build a nest out of sticks and other materials wherever it can be supported. Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. Due to the location, the type of habitat at the project site, and the type of work proposed, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the U.S. Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

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Case No(s). 17-2497-GA-BLN

Summary: Exhibit Appendix D Part 2 electronically filed by Cheryl A MacDonald on behalf of Columbia Gas of Ohio, Inc.