Sampling Point: Upl-mdt-5/15/2018-02

Depth	Matrix		Red	lox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-10	10YR 4/3	100					silty clay loam	
<b>*</b> T. 0.0		D 1 1	DM D	N 4 - 1 - 1 - 1	00.0		0 1 10 10 10	
• .	oncentration, D= PL=Pore Lining,			iviatrix,	CS=Co	verea or	Coated Sand Grains	
		ivi–iviati	IX .				Indicators for Dr	oblematic Hydric Soils:
Hydric Soil Indicators:    Histisol (A1)				w Surface 8) ace (S9) 8) Matrix (F3) rface (F6) Surface 6 ions (F8) e Masse e (F13) (I) dplain So terial (F2)	5) (F7) ) s (F12) ( MLRA 13 iils (F19) 21) (MLR	2 cm Muck (A Coast Prairie Piedmont Floc (MLRA 136, 1 Very Shallow Other (Explair  LRR N, MLRA 136) 6, 122) (MLRA 148) A 127, 147)	10) (MLRA 147) Redox (A16) (MLRA 147, 148) odplain Soils (F19) 47) Dark Surface (TF12) n in Remarks)	
Restrictive L Type: Depth (inch	_ayer (if observe	d):			- -		Hydric soil present?	? <u>N</u>
Remarks:						•		

			Report Name:	Wetland NH-57			
Project/Site: Holloway-Knox 138 kV Transmission Line	<u>e</u> City/County:	Belmont	Sampling Date:				
Applicant/Owner: FirstEnergy		Ohio		w-mdt-5/15/2018-01			
Investigator(s): M. Thomayer, J.Freer; Jacobs		, Township, Range		2: (0/) 0			
Landform (hillslope, terrace, etc.): terrace	•	ncave, convex, non	· -	Slope (%): 3			
Subregion (LRR or MLRA): LRR N Lat.: Soil Map Unit Name: LpF-Lowell-Westmoreland silt loams		Long.: -8		Datum: NAD 83			
Are climatic/hydrologic conditions of the site typical for this		Yes X N		explain in remarks)			
	significantly		re "normal circums				
Are vegetation , soil , or hydrology Are vegetation , soil X , or hydrology	significantly naturally pro		resent?	statices 165			
Alle vegetation, soil _/, or right orange				any answers in remarks			
SUMMARY OF FINDINGS							
Hydrophytic vegetation present? Yes_							
Hydric soil present? Yes	Is the samp	pled area within a	wetland? Y	es			
Wetland hydrology present? Yes							
Remarks:							
<u> </u>		5014/					
PEM wetland downslope of pond and stream wi	thin valley in exist	ting ROW.					
HYDROLOGY							
Wetland Hydrology Indicators:				num of two required)			
Primary Indicators (minimum of one is required; check all	,		ce Soil Cracks (B6)				
	uatic Plants (B14)		sely Vegetated Cond	cave Surface (B8)			
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	X Draina	age Patterns (B10)				
X Saturation (A3) Oxidized	l Rhizospheres on Livi	ing Moss	Trim Lines (B16)				
Water Marks (B1)Roots (C			eason Water Table	(C2)			
· · · · · /	e of Reduced Iron (C4		ish Burrows (C8)				
	ron Reduction in Tilled		ation Visible on Aeri				
Algal Mat or Crust (B4) Soils (C6	•		ed or Stressed Plan				
	ck Surface (C7)	X Geom	norphic Position (D2	)			
Inundation Visible on AerialOther (E	xplain in Remarks)	Shallo	ow Aquitard (D3)				
Imagery (B7)			topographic Relief (	D4)			
Water-Stained Leaves (B9)		X FAC-N	Neutral Test (D5)				
Aquatic Fauna (B13)							
Field Observations:							
Surface water present? Yes X No	Depth (inches):	1	Wetland				
Water table present? Yes No			hydrology				
Saturation present? Yes X No	Depth (inches):	0	present?	<u>Y</u>			
(includes capillary fringe)	<del></del>			<del></del>			
Describe recorded data (stream gauge, monitoring well, a	erial photos previou	is inenections) if a	wailahla:				
Describe recorded data (stream gadge, monitoring well, a	Bliai pilotos, previou	s mopeonone, n a	Ivaliabie.				
-							
Remarks:							
Saturated throughout; 60% inundated due to po	nd outfall/stream	flowing through	ı wetland.				

EGETATION - Use scientific names of plants				Sampling Point: w-mdt-5/15/2018 50/20 Thresholds
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         28         70           Woody Vine Stratum         0         0
Sapling/Shrub Plot Size( 15 ft. )	0 = Absolute % Cover	= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  1 (A) (B)
				Prevalence Index Worksheet           Total % Cover of:         0BL species         100         x 1 =         100           FACW species         40         x 2 =         80           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         0         x 5 =         0           Column totals         140         (A)         180         (B)           Prevalence Index = B/A =         1.29         (B)
Herb Stratum Plot Size ( 5 ft. )  Typha angustifolia Impatiens capensis Eupatorium perfoliatum Onoclea sensibilis	Absolute % Cover 100 20 10 10	Total Cover  Dominant Species Y N N N	Indicator Status OBL FACW FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic 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. (7.6 cm) or more in diameter breast height (DBH), regardless of height.  Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Woody Vine Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Herb - All herbaceous (non-woody) plants, regardless o size, and woody plants less than 3.28 ft tall.  Woody vines - All woody vines greater than 3.28 ft in height.
	0 =	= Total Cover		Hydrophytic vegetation present?  Y

Sampling Point: w-mdt-5/15/2018-01

Depth	Matrix		Red	ox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Kelliaiks
0-14	10YR 4/1	98	10YR 4/6	2	С	М	Silty clay	
								+
*T 0-0	an aantratian D-	Danlati	DM=Daduaad	Matrix	CC=Cai	, and an	Coated Sand Grains	
• •		•		watrix,	CS=C0\	erea or	Coated Sand Grains	
	PL=Pore Lining, Indicators:	vi=iviati	IX					Problematic Hydric Soils:
Black H Hydroge Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Su ark Surface (A12 Mucky Mineral (S , MLRA 147, 148 Gleyed Matrix (S4 Redox (S5) d Matrix (S6)	rface ( <i>F</i> ) 1) <b>)</b> <b>)</b>	(MLRA Thin Da (MLRA Loamy ( X Deplete Redox I Deplete Redox I Iron-Ma Umbric Piedmoi Red Pai	ue Beloo 147, 14 rk Surfa 147, 14 Gleyed d Matrio Dark Su d Dark Depress nganes Surface nt Flood rent Ma	w Surface 8) ace (S9) 8) Matrix (F (F3) rface (F6 Surface ( sions (F8) e Masses (F13) (N dplain So terial (F2	2) (F7) ) s (F12) ( <b>/ILRA 13</b> ils (F19) 1) <b>(MLR</b>	Coast Prain Piedmont F (MLRA 136) Very Shallo (Exp	ow Dark Surface (TF12) lain in Remarks)
Restrictive I Type: Depth (inch	_ayer (if observed	d):			- -		Hydric soil prese	nt? <u>Y</u>
Remarks:								

			Report Name:	Upland NH-57			
Project/Site: Holloway-Knox 138 kV Transmission Line	e City/County: B	elmont	Sampling Date:				
Applicant/Owner: FirstEnergy		)hio		Upl-mdt-5/15/2018-01			
Investigator(s): M. Thomayer, J.Freer; Jacobs	Section, T	Township, Range:		·			
Landform (hillslope, terrace, etc.): hillside	Local relief (conca	ave, convex, none)		Slope (%): 1			
Subregion (LRR or MLRA): LRR N Lat.:		Long.: <u>-80</u>		Datum: NAD 83			
Soil Map Unit Name: LpF - Lowell-Westmoreland silt loams	s, benched, 30 to 70 p	percent slo NWI Cl	assification: Nor	ne (Upland)			
Are climatic/hydrologic conditions of the site typical for this	s time of the year?	Yes X No	(If no, e	xplain in remarks)			
Are vegetation, soil, or hydrology	significantly di		"normal circums	stances" Yes			
Are vegetation, soil, or hydrology	naturally probl		sent?	<u> </u>			
		(If r	needed, explain a	any answers in remarks			
SUMMARY OF FINDINGS							
Hydrophytic vegetation present? No							
Hydric soil present? No	Is the sample	ed area within a w	retland? N	<u>lo</u>			
Wetland hydrology present? No							
Remarks:							
Tromano.							
Upland point for PEM wetland NH-57 in routinely	y maintained ROW	1					
HYDROLOGY							
Wetland Hydrology Indicators:		Secondary	Indicators (minim	num of two required)			
Primary Indicators (minimum of one is required; check all t	that apply)	Surface	Soil Cracks (B6)				
Surface Water (A1) True Aqu	uatic Plants (B14)		, ,	ave Surface (B8)			
	n Sulfide Odor (C1)		e Patterns (B10)	( )			
	Rhizospheres on Living	<del></del>	rim Lines (B16)				
Water Marks (B1) Roots (C		<del></del>	son Water Table	(C2)			
	e of Reduced Iron (C4)		Burrows (C8)	()			
Drift Deposits (B3) Recent In	ron Reduction in Tilled	Saturati	on Visible on Aeri	al Imagery (C9)			
Algal Mat or Crust (B4) Soils (C6	6)	Stunted	or Stressed Plan	ts (D1)			
Iron Deposits (B5) Thin Muc	ck Surface (C7)	Geomor	phic Position (D2	)			
Inundation Visible on Aerial Other (Ex	xplain in Remarks)	Shallow	Aquitard (D3)				
Imagery (B7)		Microtop	oographic Relief (	D4)			
Water-Stained Leaves (B9)		FAC-Ne	eutral Test (D5)				
Aquatic Fauna (B13)		<u> </u>					
Field Observations:							
Surface water present? Yes No X	Depth (inches):		Wetland				
Water table present? Yes No X			hydrology				
Saturation present? Yes No X	Depth (inches):		present?	<u>N</u>			
(includes capillary fringe)							
Describe recorded data (stream gauge, monitoring well, as	erial photos previous i	inspections) if ava	ailahle:				
bescribe recorded data (stream gauge, monitoring well, at	eriai priotos, previous i	mapections), ii ave	mable.				
Remarks:							

	Jse scientific n					Sampling Point: U	<u>lpl-mdt-5/15/2018</u>
Tree Stratum  1 2 3 4	Plot Size (	30 ft.	) Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 24 60 0 0
5 6 7 8	Plot Size (			= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC:	0 (A) 2 (B) 0.00% (A/B)
1 2 3 3 4 5 6 6 7 8 8 9				= Total Cover		Prevalence Index Workshee  Total % Cover of:  OBL species 0 x 1 =  FACW species 0 x 2 =  FAC species 0 x 3 =  FACU species 120 x 4 =  UPL species 0 x 5 =  Column totals 120 (A)  Prevalence Index = B/A =	0 0 0 480
Herb Stratum  1 Triticum aesti 2 Trifolium repe 3 4 5 6 7 8		5 ft.	) Absolute % Cover 90 30	Dominant Species Y Y	Indicator Status FACU FACU	Hydrophytic Vegetation Ind  Rapid test for hydrophytic  Dominance test is >50%  Prevalence index is ≤3.0*  Morphological adaptation supporting data in Remar separate sheet)  Problematic hydrophytic v (explain)  *Indicators of hydric soil and wetland present, unless disturbed or problem	e vegetation  s* (provide rks or on a vegetation* hydrology must be
3 1 2 2 3 4						Definitions of Vegetation St  Tree - Woody plants 3 in. (7.6 cm) or breast height (DBH), regardless of he  Sapling/shrub - Woody plants less t greater than 3.28 ft (1 m) tall.	r more in diameter at eight.
Woody Vine Stratum 1	Plot Size (	30 ft.	120 Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	Herb - All herbaceous (non-woody) p size, and woody plants less than 3.28 Woody vines - All woody vines greatheight.	8 ft tall.
3 4 5			0	= Total Cover		Hydrophytic vegetation present? N	

Sampling Point: Upl-mdt-5/15/2018-01

Depth	Matrix			lox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 4/2	100					silty clay loam	
				l Matrix,	CS=Cov	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Matr	ix					
Hydric Soil	Indicators:						Indicators for Pro	oblematic Hydric Soils:
Black H Hydroge Stratifie 2 cm M Deplete Thick D Sandy M (LRR N Sandy F Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR d Below Dark Suark Surface (A12) Mucky Mineral (Samula, MLRA 147, 148 Gleyed Matrix (Samula, CSamula, CSamula, CS6) d Matrix (S6)	urface (A 2) 31) <b>3)</b> 4)	Thin Da  (MLRA Loamy Deplete A11) Redox   Deplete Redox   Iron-Ma Umbric Piedmo Red Pa	Surface nt Flood rent Mat	ice (S9)  Matrix (F (F3)  face (F6 Surface (F6 Surface (F13) (F13) (F13) (F13) (F13) (F13) (F2	6) (F7) ) s (F12) ( MLRA 13 bils (F19) 21) (MLR	Piedmont Floo (MLRA 136, 1 Very Shallow Other (Explain	Dark Surface (TF12) n in Remarks)
Restrictive I Type: Depth (inch	_ayer (if observe	d):					Hydric soil present	? <u>N</u>

Project/Site: Holloway-Knox 138 kV Transmission Line Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): floodplain Subregion (LRR or MLRA): LRR N Lat.: Soil Map Unit Name: LoF - Lowell-Westmoreland silt loams Are climatic/hydrologic conditions of the site typical for this Are vegetation , soil , or hydrology Are vegetation , soil , or hydrology SUMMARY OF FINDINGS	State: Of Section, T Local relief (conca : 40.0091 s, 35 to 70 percent slo	ownship, Range: ave, convex, none) Long.: -80 pes NWI Cla Yes X No isturbed? Are lematic? pres	T5N R3W S29 : concave .8648 assification: PEM (If no, ex e "normal circumst	5/10/2018 W-mdt-5/10/2018-02 Slope (%): 1 Datum: NAD 83 I1A splain in remarks)
Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?  Yes No Yes	Is the sample	ed area within a w	vetland? Ye	<u>s</u>
Remarks: PEM wetland within McMahon Creek floodplain	within existing RO\	W.		
HYDROLOGY				
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all to Surface Water (A1)	uatic Plants (B14) In Sulfide Odor (C1) I Rhizospheres on Living (33) e of Reduced Iron (C4) ron Reduction in Tilled (6) ck Surface (C7) explain in Remarks)	Surface Sparsely X Drainag Moss Tr Dry-Sea Crayfish Saturati Stunted X Geomor Shallow X Microtop	e Soil Cracks (B6) y Vegetated Conca e Patterns (B10) rim Lines (B16) ason Water Table (in Burrows (C8) ion Visible on Aeria or Stressed Plants rphic Position (D2) y Aquitard (D3) pographic Relief (D eutral Test (D5)	C2) al Imagery (C9) s (D1)
Surface water present? Yes No X Water table present? Yes No X Saturation present? Yes No X (includes capillary fringe)	Depth (inches): Depth (inches):		Wetland hydrology present?	<u>Y</u>
Describe recorded data (stream gauge, monitoring well, as	erial photos, previous i	inspections), if ava	ailable:	
Remarks:  Receives flooding from adjacent perennial strea	am.			

EGETATION - U	se scientilic n	ames or plants	3 			Sampling Point:	W-mdt-5/	10/2018
	_					50/20 Thresholds		
	Plot Size (		Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum	20% 0 1 27	50% 0 3 68
3						Woody Vine Stratum	0	0
4 5						Dominance Test Workshe	et	
3						Number of Dominant Species that are OBL,		
8						FACW, or FAC:	2	(A)
n						Total Number of Dominant Species Across all Strata:	3	(B)
'			0 :	= Total Cover		Percent of Dominant		(□,
Capling/Chrub			Absolute	Dominant	Indicator	Species that are OBL,	66 679/	(A/D)
Sapling/Shrub Stratum	Plot Size (	15 ft. )	% Cover	Species	Status	FACW, or FAC:	00.07 /0	(A/B)
Aesculus glabi	ra		5	<u>Y</u>	FACU	Prevalence Index Worksh	eet	
						Total % Cover of: OBL species 0 x 1	= 0	
						FACW species 135 x 2	270	)
5 6						FAC species 0 x 3 FACU species 5 x 4		_
						UPL species 0 x 5	i = 0	<b>–</b>
						Column totals 140 (A) Prevalence Index = B/A =	290 2.07	(B)
				T 1 10				_
			5 :	= Total Cover		Hydrophytic Vegetation In	ndicators:	
Herb Stratum	Plot Size (	5 ft. )	Absolute	Dominant	Indicator	Rapid test for hydrophy		ion
Phalaris arund	`	•	% Cover 95	Species Y	Status FACW	X Dominance test is >50% X Prevalence index is ≤3.		
2 Impatiens cape			40	Y	FACW	Morphological adaptation	ons* (provi	
						supporting data in Rem separate sheet)	alks or on	а
						Problematic hydrophytic	c vegetatio	n*
7						(explain) *Indicators of hydric soil and wetla	ınd hydrology	must be
3						present, unless disturbed or proble		
						Definitions of Vegetation	Strata:	
						Tree - Woody plants 3 in. (7.6 cm)		iameter a
3						breast height (DBH), regardless of	-	
<u> </u>						Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	s than 3 in. ப	)BH and
			135	= Total Cover		Herb - All herbaceous (non-woody		ardless of
Woody Vine	Plot Size (	30 ft. )	Absolute	Dominant	Indicator	size, and woody plants less than 3	.28 ft tall.	
Stratum 1	,	,	% Cover	Species	Status	Woody vines - All woody vines grant height.	eater than 3.2	28 ft in
2								
1						Ludronhutio		
5						Hydrophytic vegetation		
			0 :	= Total Cover		present? Y	_	
emarks: (Include ph	noto numbers he	ere or on a separ	rate sheet)					
•		•	•					

Sampling Point: W-mdt-5/10/2018-02

							-
Profile Door	intion: (Docorit	a to the	danth paodod to	dagument	the indicator	ar confirm the absonce	of indicators \
Depth	Matrix	e to the		x Features		or confirm the absence of	of Indicators.)
(Inches)	Color (moist)	%	Color (moist)		ype* Loc**	Texture	Remarks
0-14	10YR 3/2	100	Goldi (moldi)		1	silt loam	
0-14	10111 0/2	100				Silt loain	
*Type: C=C	oncentration, D=	Depletion	n, RM=Reduced M	Matrix, CS	=Covered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Matr	ix				
Hydric Soil	Indicators:					Indicators for I	Problematic Hydric Soils:
			Dark Surf	\ /			
Histisol	` '		•		urface (S8)		(A10) (MLRA 147)
Histic Epipedon (A2)  Black Histic (A3)  — (MLRA 147, 148)  Thin Dark Surface (S					(90)		ie Redox (A16) <b>(MLRA 147, 148)</b> loodplain Soils (F19)
	en Sulfide (A4)		(MLRA 1		(39)	(MLRA 136	. ,
	d Layers (A5)			leyed Matı	rix (F2)		w Dark Surface (TF12)
	uck (A10) <b>(LRR</b>	N)		Matrix (F3	, ,		ain in Remarks)
	d Below Dark Su			`	,	<u> </u>	<i>,</i>
	ark Surface (A12			Dark Surf	. ,		
Sandy N	Mucky Mineral (S	31)	Redox De	epressions	s (F8)		
(LRR N	, MLRA 147, 148	3)				(LRR N, MLRA 136)	
Sandy 0	Gleyed Matrix (S	4)	Umbric S	urface (F1	13) <b>(MLRA 1</b> 3	36, 122)	
Sandy F	Redox (S5)		Piedmont	: Floodplai	in Soils (F19)	(MLRA 148)	
Stripped	d Matrix (S6)		Red Pare	nt Materia	al (F21) <b>(MLF</b>	RA 127, 147)	
*Indicators	of hydrophytic ve	getation	and wetland hydr	ology mus	st be present	unless disturbed or prob	blematic
					· ·	·	
Restrictive L	_ayer (if observe	d):					
Type:						Hydric soil prese	nt? <u>N</u>
Depth (inch	es):						
Remarks:					I		
Lots of s	sediment depo	sits fro	m stream floodi	ıng.			

Project/Site: Holloway-Knox 138 kV Transmis Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jac Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N Soil Map Unit Name: Itm- Itmann very channery low Are climatic/hydrologic conditions of the site typic Are vegetation , soil , or hyd Are vegetation , soil , or hyd SUMMARY OF FINDINGS	State:   Section	Ohio  , Township, Range: ncave, convex, none) Long.: -80. NWI Cla Yes X No d disturbed? Are oblematic?	: <u>convex</u> Slope (%): <u>3</u> .86485 Datum: <u>NAD 83</u> assification: <u>None (Upland)</u>
Hydrophytic vegetation present?  Hydric soil present?  Wetland hydrology present?  No  No	Is the samp	pled area within a w	vetland? No
Remarks:  Upland point for PEM wetland NH-58 in	routinely maintained RO¹	W	
HYDROLOGY			
Wetland Hydrology Indicators:			Indicators (minimum of two required)
Primary Indicators (minimum of one is required; of	check all that apply)	Surface	Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely	y Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage	e Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Liv	vina Moss Tr	rim Lines (B16)
Water Marks (B1)	Roots (C3)		ason Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4		Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tille		on Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted	or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomor	rphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow	Aquitard (D3)
Imagery (B7)	•	Microtop	pographic Relief (D4)
Water-Stained Leaves (B9)			eutral Test (D5)
Aquatic Fauna (B13)		<del></del> _	
Field Observations:			
	No X Depth (inches):		Wetland
· ——	No X Depth (inches):		hydrology
	No X Depth (inches):		present? N_
(includes capillary fringe)			
Describe recorded data (stream gauge, monitorin	as well pariel photos previou	is inequations) if ava	silabla
Describe recorded data (stream gauge, monitorin	ig weii, aeriai priotos, previou	is inspections), ii ava	illable:
Remarks:			

EGETATION - Use scientific names of		Sampling Point: Upl-mdt-5/10/20 50/20 Thresholds
Tree Stratum Plot Size ( 30 ft.	) Absolute Dominant Indicator Species Status	20%   50%
Sapling/Shrub Plot Size( 15 ft.		Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: 0 (A) Total Number of Dominant Species Across all Strata: 2 (B) Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)
	/ % Cover Species Status	Prevalence Index Worksheet           Total % Cover of:         0         x 1 = 0         0         0         x 2 = 0         0         0         x 2 = 0         0         0         x 2 = 0         0         0         0         x 3 = 0         0<
Herb Stratum Plot Size ( 5 ft.  Securigera varia Cirsium arvense Poa pratensis	0	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic 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. (7.6 cm) or more in diameter breast height (DBH), regardless of height.  Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Woody Vine Plot Size ( 30 ft.	110 = Total Cover  Absolute Dominant Indicator % Cover Species Status	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.
3 4 5	0 = Total Cover	Hydrophytic vegetation present? N

Sampling Point: Upl-mdt-5/10/2018-02

Depth	Matrix						Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 4/2	100					silt loam	
				l Matrix,	CS=Cov	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Matr	ix					
Hydric Soil	Indicators:						Indicators for F	Problematic Hydric Soils:
Histisol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Thin Dark Surface (F3)  Loamy Gleyed Matrix (F3)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  (LRR N, MLRA 147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  *Indicators of hydrophytic vegetation and wetland hydrology must be				ice (S9)  Matrix (F (F3)  face (F6 Surface (F6 Surface (F13) (F13) (F13) (F13) (F13) (F13) (F2	6) (F7) ) s (F12) ( MLRA 13 ills (F19) (1) (MLR	Piedmont FI (MLRA 136, Very Shallow Other (Explain LRR N, MLRA 136) 6, 122) (MLRA 148) A 127, 147)	w Dark Surface (TF12) ain in Remarks)	
Restrictive I Type: Depth (inch	_ayer (if observe	d):					Hydric soil preser	nt? <u>N</u>

Project/Site: Holloway-Knox 138 kV Transmission Lin	co City/County: 1	Belmont	Report Name: WetlandNH-59 Sampling Date: 5/10/2018
Applicant/Owner: FirstEnergy		Ohio	Sampling Date. <u>5/10/2016</u> Sampling Point: W-mdt-5/10/2018-01
Investigator(s): M. Thomayer, B.Robertson; Jacobs		Township, Range:	
Landform (hillslope, terrace, etc.): terrace		cave, convex, none	
Subregion (LRR or MLRA): LRR N Lat		Long.: -80	· · · · ·
Soil Map Unit Name: RhB - Richland silt loam, 3 to 8 perc			lassification: PEM1A
Are climatic/hydrologic conditions of the site typical for thi	•	Yes X No	
Are vegetation, soil, or hydrology	significantly		e "normal circumstances" Yes
Are vegetation , soil , or hydrology	naturally prob		esent?
CHARLES OF ENDINGS		(11.1	needed, explain any answers in remarks
SUMMARY OF FINDINGS	<u> </u>		<del></del>
Hydrophytic vegetation present? Yes			
Hydric soil present? Yes	Is the sample	led area within a v	wetland? Yes_
Wetland hydrology present? <u>Yes</u>			
Remarks:			
PEM wetland within old detention basin within e	existing ROW.		
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	X Surface	e Soil Cracks (B6)
Surface Water (A1)True Aq	quatic Plants (B14)	X Sparsel	ly Vegetated Concave Surface (B8)
High Water Table (A2) Hydroge	en Sulfide Odor (C1)	X Drainaç	ge Patterns (B10)
	d Rhizospheres on Livir	<del></del>	rim Lines (B16)
Water Marks (B1) Roots (C			ason Water Table (C2)
` '	ce of Reduced Iron (C4)		h Burrows (C8)
· · · · · /	Iron Reduction in Tilled		tion Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C	<b>;6</b> )		d or Stressed Plants (D1)
Iron Deposits (B5) Thin Mu	uck Surface (C7)	Geomo	orphic Position (D2)
<del></del>	Explain in Remarks)		v Aquitard (D3)
Imagery (B7)	,		ppographic Relief (D4)
Water-Stained Leaves (B9)			eutral Test (D5)
Aquatic Fauna (B13)			` '
Field Observations:			
l	X Depth (inches):		Wetland
	X Depth (inches):		hydrology
Saturation present? Yes X No	Depth (inches):	8	present? Y
(includes capillary fringe)			·
Describe recorded data (atroom gouge, monitoring well of	acticl photos, provious	= i=anastiana) if av	-:labla.
Describe recorded data (stream gauge, monitoring well, a	aeriai pnotos, previous	3 Inspections), ii ava	allable:
Remarks:			
Saturated throughout			

	nes of plants				Sampling Point: W-mdt-5/10/2018-0
Tree Stratum Plot Size ( 1	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	20%   50%
Sapling/Shrub Stratum Plot Size (	15 ft. )	Absolute % Cover	= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet  Number of Dominant  Species that are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across all Strata: 3 (B)  Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
1		40	Y Y	OBL	Prevalence Index Worksheet           Total % Cover of:         0BL species         60         x 1 =         60           FACW species         65         x 2 =         130           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         0         x 5 =         0           Column totals         125         (A)         190         (B)           Prevalence Index = B/A =         1.52         1.52
Herb Stratum Plot Size (  1 Phalaris arundinacea 2 carex vulpinoidea 3 Persicaria maculosa 4 5 6 6 7 8 9	5 ft. )	Absolute % Cover 50 20 15	Dominant Species Y Y N	Indicator Status FACW OBL FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
11 12 13 14					Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( Stratum 1 2	30 ft. )	85 = Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	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.
3 4 5		0 =	Total Cover		Hydrophytic vegetation present?  Y

Sampling Point: W-mdt-5/10/2018-01

	epth Matrix Redox Features		ures		Texture	Remarks		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14	10YR 4/1	90	10YR 4/6	10	С	М	clay	
								+
*T 0_0		D I - 4:	DM-D	Madaire	00-0		041010	
• •				watrix,	CS=C0\	erea or	Coated Sand Grains	
	PL=Pore Lining, Indicators:	เท=เทลแ	IX					Problematic Hydric Soils:
Black H Hydroge Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Su ark Surface (A12 Mucky Mineral (S , MLRA 147, 148 Gleyed Matrix (S4 Redox (S5) d Matrix (S6)	rface ( <i>f</i> 2) 1) 1) <b>3)</b> 4)	(MLRA Thin Da (MLRA Loamy ( X Deplete Redox I Deplete Redox I Iron-Ma Umbric Piedmoi Red Pai	ue Beloo 147, 14 rk Surfa 147, 14 Gleyed d Matrio Dark Su Dark Su Depress nganes Surface nt Flood rent Ma	w Surface 8) ace (S9) 8) Matrix (F (F3) rface (F6 Surface ( ions (F8) e Masse e (F13) (N dplain So terial (F2	2) (F7) ) s (F12) ( <b>/ILRA 13</b> ils (F19) 1) <b>(MLR</b>	Coast Prai Piedmont (MLRA 13 Very Shall Other (Exp	ow Dark Surface (TF12) olain in Remarks)
	_ayer (if observe		Tana wellana nye	ology	-	prooding	Hydric soil prese	

		<b>.</b>		Upland NH-59
Project/Site: Holloway-Knox 138 kV Trans		Belmont	_Sampling Date:	
Applicant/Owner: FirstEnergy	State			: Upl-mdt-5/10/2018-01
Investigator(s): M. Thomayer, B.Robertson;		on, Township, Range:		Clone (0/): E
Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N	Lat.: 40.008374	oncave, convex, none Long.: -8		Slope (%): <u>5</u> Datum: NAD 83
Soil Map Unit Name: RhB- Richland silt loam,			Classification: No	
Are climatic/hydrologic conditions of the site ty				explain in remarks)
Are vegetation, soil, or h			e "normal circum	stances" Yes
Are vegetation, soil, or h	nydrologynaturally p		esent?	
		(If	needed, explain	any answers in remarks)
SUMMARY OF FINDINGS				
Hydrophytic vegetation present?  Yes	le the ee		etlemelO N	ule.
Hydric soil present? No	is the sar	npled area within a	wetiand?	No
Wetland hydrology present? No				
Remarks:				
Unland point for DEM watered NULEO	in varitinals, maintained D	O\A/		
Upland point for PEM wetland NH-59	in routinely maintained Ro	OW		
HYDROLOGY	-			
Wetland Hydrology Indicators:		0		
,	di abaak all that apply)		· ·	num of two required)
Primary Indicators (minimum of one is required			e Soil Cracks (B6)	
Surface Water (A1)	True Aquatic Plants (B14)		ely Vegetated Con	cave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		ge Patterns (B10)	
Saturation (A3)	Oxidized Rhizospheres on L	_ivingMoss	Γrim Lines (B16)	
Water Marks (B1)	Roots (C3)	Dry-Se	eason Water Table	(C2)
Sediment Deposits (B2)	Presence of Reduced Iron (	· · · · · · · · · · · · · · · · · · ·	sh Burrows (C8)	
Drift Deposits (B3)	Recent Iron Reduction in Til		tion Visible on Aer	<b>3</b> , ( )
Algal Mat or Crust (B4)	Soils (C6)		Stunted or Stressed Plants (D1)	
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomo	eomorphic Position (D2)	
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallov	w Aquitard (D3)	
Imagery (B7)		Microto	opographic Relief (	(D4)
Water-Stained Leaves (B9)		FAC-N	leutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:	_			
Surface water present? Yes	No X Depth (inches	):	Wetland	
Water table present? Yes	No X Depth (inches		hydrology	
Saturation present? Yes	No X Depth (inches		present?	N
(includes capillary fringe)		,	•	
	<del></del>			
Describe recorded data (stream gauge, monito	oring well, aerial photos, previo	ous inspections), if av	/ailable:	
Remarks:				

		ants			Sampling Point: Upl-mdt-5/10/2018 50/20 Thresholds
Tree Stratum Plot Size ( 1 2 3 4	30 ft.	) Absolute % Cover	Dominant Species	Indicator Status	20%   50%     50%     50%     50%     50%     50%     50%     50%   10
Sapling/Shrub Stratum Plot Size (			= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  50.00% (A/B)
1		15	Y	FACU	Prevalence Index Worksheet           Total % Cover of:         0         x 1 =         0           OBL species         0         x 2 =         180           FACW species         0         x 3 =         0           FACU species         35         x 4 =         140           UPL species         0         x 5 =         0           Column totals         125         (A)         320         (B)           Prevalence Index = B/A =         2.56
Herb Stratum Plot Size (  1 Phalaris arundinacea 2 Solidago canadensis 3 4 5 6 6 7 8 9 9	5 ft.	15 Absolute % Cover 90 20	= Total Cover  Dominant Species Y N	Indicator Status FACW FACU	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation Dominance test is >50%  X Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
3 1 2 2 3 4 5					Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( Stratum 1	30 ft.	110 Absolute % Cover	Total Cover  Dominant Species	Indicator Status	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.
3 4 5			= Total Cover		Hydrophytic vegetation present?  Y

Sampling Point: Upl-mdt-5/10/2018-01

Depth	Matrix			lox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 3/3	100					silt loam	
				l Matrix,	CS=Cov	vered or	Coated Sand Grains	
**Location:	PL=Pore Lining,	M=Matr	ix					
Hydric Soil	Indicators:						Indicators for F	Problematic Hydric Soils:
Histisol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Thin Dark Surface (F3)  Loamy Gleyed Matrix (F3)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  (LRR N, MLRA 147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  *Indicators of hydrophytic vegetation and wetland hydrology must be				ce (S9)  Matrix (F (F3)  face (F6 Surface (F6 Surface (F13) (F13) (F13) (F13) (F13) (F13) (F13)	6) (F7) ) s (F12) ( MLRA 13 bils (F19) 21) (MLR	Piedmont FI (MLRA 136, Very Shallov Other (Explain LRR N, MLRA 136) 6, 122) (MLRA 148) A 127, 147)	w Dark Surface (TF12) ain in Remarks)	
Restrictive I Type: Depth (inch	_ayer (if observe	d):					Hydric soil preser	nt? <u>N</u>

			Report Name:	Wetland NH-60
Project/Site: Holloway-Knox 138 kV Transmission Line	e City/County: Be		Sampling Date:	
Applicant/Owner: FirstEnergy	State: Oh			W-bcr-5/09/2018-04
Investigator(s): M. Thomayer, B.Robertson; Jacobs		ownship, Range: ्		0/ (0/) 45
Landform (hillslope, terrace, etc.): riverine	Local relief (concav	•		Slope (%): <u>15</u>
Subregion (LRR or MLRA): <u>LRR N</u> Lat.: Soil Map Unit Name: <u>LpF - Lowell-Westmoreland silt loams</u>		Long.: <u>-80.</u> ercent slo NWI Cla	8484 assification: <u>PE</u> M	Datum: <u>NAD 83</u> M1C
Are climatic/hydrologic conditions of the site typical for this		Yes X No		xplain in remarks)
Are vegetation, soil, or hydrology _	significantly dis	sturbed? Are	"normal circums	stances" Yes
Are vegetation , soil , or hydrology	naturally proble	ematic? pres	sent?	
<del></del>		(If n	eeded, explain a	any answers in remarks
SUMMARY OF FINDINGS				
Hydrophytic vegetation present? Yes			a .v	
Hydric soil present? Yes	Is the sampled	d area within a w	etland? Ye	<u>es</u>
Wetland hydrology present? Yes				
Remarks:				
DEM wetlend within existing T line POW, along	stroom channol			
PEM wetland within existing T-line ROW, along	Stream channel.			
HYDROLOGY				
Wetland Hydrology Indicators:		Sacandary		of two required)
Primary Indicators (minimum of one is required; check all t	that apply)			num of two required)
			Soil Cracks (B6)	Of (DO)
	uatic Plants (B14)		_	cave Surface (B8)
	n Sulfide Odor (C1)	<del></del>	e Patterns (B10)	
	Rhizospheres on Living		im Lines (B16)	
Water Marks (B1)Roots (C			son Water Table	(C2)
	e of Reduced Iron (C4)		Burrows (C8)	(00)
	ron Reduction in Tilled		on Visible on Aeri	
Algal Mat or Crust (B4) Soils (C6	•		or Stressed Plant	
	ck Surface (C7)		phic Position (D2)	)
	xplain in Remarks)		Aquitard (D3)	
Imagery (B7)			oographic Relief (I	D4)
Water-Stained Leaves (B9)		X FAC-Ne	utral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes NoX			Wetland	
Water table present? Yes X No	Depth (inches):	10	hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	<u>Y</u>
(includes capillary fringe)				_
Describe recorded data (stream gauge, monitoring well, as	arial photos, provious ir	nanactions) if ava	ilabla	
Describe recorded data (stream gauge, monitoring well, as	andi priotos, previous in	iispeciions), ii ava	liabie.	
Remarks:				

			Sampling Point:	W-bcr-5/09/2018
Absolute	Dominant	Indicator	50/20 Thresholds	20% 50%
% Cover	Species	Status	Tree Stratum	0 0
				0 0
				28 70 0 0
			Number of Dominant	et
			Species that are OBL,	2 (A)
			· ·	2 (A)
			Species Across all Strata:	(B)
0 :	= Total Cover		Percent of Dominant	
Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	100.00% (A/B)
				eet
				= 15
			FAC species 0 x 3	= 0
			· · · · · · · · · · · · · · · · · · ·	
			Prevalence Index = B/A =	1.88
0 :	= Total Cover			
			1 ' ' '	
	•			
30	<u> </u>	FACW	Morphological adaptation	ons* (provide
20	N	FACW		arks or on a
				*
				vegetation
10	N	FACW	` ' '	nd hydrology must be
			Definitions of Vegetation	Strata:
			Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	s than 3 in. DBH and
	= Total Cover		•	,
Absolute % Cover	Dominant Species	Indicator Status		
			height.	
			Hydrophytic	
0	= Total Cover		_	-
ite sheet)			1	
	0 Absolute % Cover 40 30 20 15 10 10 Absolute % Cover	% Cover Species  O = Total Cover  Absolute % Cover Species  O = Total Cover  Absolute % Cover Species  Y 30 Y 20 N 15 N 15 N 10 N 10 N 10 N  Total Cover  Absolute % Cover Species  Y Species  Total Cover  Absolute % Cover Species  Total Cover  Absolute % Cover Species	% Cover Species Status    O	Absolute Species Status Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum Woody Vine Stratum Woody Vine Stratum Woody Vine Stratum Species that are OBL, FACW, or FAC:    O

Sampling Point: W-bcr-5/09/2018-04

Depth	Matrix		Red	lox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-14	N 5/	80	7.5YR 5/8	20	С	М	mucky clay loam	
*Type: C=C	oncentration. D=	Depletion	on. RM=Reduced	Matrix.	CS=Cov	ered or	Coated Sand Grains	
	PL=Pore Lining,	•		,				
	Indicators:						Indicators for	or Problematic Hydric Soils:
.,			Dark Su	ırface (S	S7)			
Histisol	(A1)		Polyvalı	ue Belòv	៷ Śurfac∈	e (S8)		ck (A10) ( <b>MLRA 147)</b>
Histic E	pipedon (A2)		(MLRA	147, 14	8)		Coast Pr	airie Redox (A16) (MLRA 147, 148
Black H	listic (A3)		Thin Da	rk Surfa	ace (S9)		Piedmon	t Floodplain Soils (F19)
Hydroge	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 1	
	d Layers (A5)		X Loamy	Gleyed I	Matrix (F	2)		allow Dark Surface (TF12)
2 cm M	uck (A10) (LRR I	N)	Deplete	d Matrix	(F3)		Other (E	xplain in Remarks)
Deplete	d Below Dark Su	ırface (A	A11) Redox [	Dark Su	rface (F6	6)		
Thick D	ark Surface (A12	2)	Deplete	d Dark :	Surface (	(F7)		
Sandy I	Mucky Mineral (S	51)			ions (F8)			
(LRR N	, MLRA 147, 148	3)	Iron-Ma	nganes	e Masses	s (F12) (	LRR N, MLRA 136)	
Sandy (	Gleyed Matrix (S4	4)	Umbric	Surface	(F13) (N	/ILRA 13	6, 122)	
Sandy F	Redox (S5)		Piedmo	nt Flood	lplain So	ils (F19)	(MLRA 148)	
Stripped	d Matrix (S6)		Red Par	rent Ma	terial (F2	1) <b>(MLR</b>	A 127, 147)	
*Indicators	of hydrophytic ve	getation	n and wetland hvo	drology	must be	present.	unless disturbed or p	roblematic
		<u> </u>				,,		
Restrictive I	_ayer (if observe	d):						
Type:					_		Hydric soil pres	sent? Y
Depth (inch	es):				-			
Remarks:								

D : 1/0"		0:1 10 1	<b>D</b>	Report Name: U	
Project/Site: Holloway-Knox 138 kV T	ransmission Line		Belmont	Sampling Date: <u>5/</u>	
Applicant/Owner: FirstEnergy		State:			ol-bcr-5/09/2018-04
Investigator(s): M. Thomayer, B.Roberts				nge: T5N R3W S22	Ol (0/.). E
	am riparian	_Local relief (con			Slope (%): 5
Subregion (LRR or MLRA): LRR N Soil Map Unit Name: LpF - Lowell-Westme	Lat.:	39.992774		-80.8477	Datum: NAD 83
Are climatic/hydrologic conditions of the s	ite typical for this tir	me of the year?	Yes X	No (If no, exp	lain in remarks)
	, or hydrology		/ disturbed?	Are "normal circumsta	nces" Yes_
	, or hydrology	naturally pro		present?	
<del></del>	•			(If needed, explain any	answers in remarks
SUMMARY OF FINDINGS					
Hydrophytic vegetation present? N	lo				
Hydric soil present?		Is the sam	pled area withi	n a wetland? No	
Wetland hydrology present?	10				
Remarks:					
Remarks.					
Upland point for PEM wetland NH	1-60 in routinely r	naintained RO	W along non-	wetland part of strea	ımhank
Opiana point for 1 Livi wodana 1411	-00 iii ioddiioiy i	Hairitairiou 130	W along hen	Welland part of on ou	iiiibaiik.
HYDROLOGY					
			0	1 I . I' ( / /	( (
Wetland Hydrology Indicators:	1 - 1 - 1 1 1 Al	· L. A		dary Indicators (minimu	m of two requirea)
Primary Indicators (minimum of one is rec	•	,		rface Soil Cracks (B6)	
Surface Water (A1)		ic Plants (B14)	Sp	arsely Vegetated Concav	e Surface (B8)
High Water Table (A2)	Hydrogen S	Sulfide Odor (C1)	Dr	ainage Patterns (B10)	
Saturation (A3)	Oxidized RI	hizospheres on Liv	vingMo	oss Trim Lines (B16)	
Water Marks (B1)	Roots (C3)		Dr	y-Season Water Table (C	2)
Sediment Deposits (B2)		of Reduced Iron (C		ayfish Burrows (C8)	
Drift Deposits (B3)		Reduction in Tille		turation Visible on Aerial	
Algal Mat or Crust (B4)	Soils (C6)		Stu	unted or Stressed Plants	(D1)
Iron Deposits (B5)	Thin Muck S	Surface (C7)	Ge	eomorphic Position (D2)	
Inundation Visible on Aerial	Other (Expl	ain in Remarks)	Sh	allow Aquitard (D3)	
Imagery (B7)	<del></del>		Mi	crotopographic Relief (D4	)
Water-Stained Leaves (B9)				C-Neutral Test (D5)	,
Aquatic Fauna (B13)					
Field Observations:				1	
Surface water present? Yes	No X	Depth (inches):		Wetland	
Water table present? Yes	No X	Depth (inches):		hydrology	
Saturation present? Yes	No X	Depth (inches):		present?	N
(includes capillary fringe)		_			
			· · · ·		
Describe recorded data (stream gauge, m	ionitoring well, aeria	al photos, previou	us inspections),	if available:	
Remarks:					
rtoman.e.					

/EGETATION - Use scientific names of plants	3			Sampling Point: upl-bcr-5/09/2018-
Tree Stratum Plot Size ( 30 ft. )	Absolute	Dominant	Indicator	<b>50/20 Thresholds</b> 20% 50%
Tree Stratum Plot Size ( 30 it. )	% Cover	Species	Status	Tree Stratum 0 0
1				Sapling/Shrub Stratum 0 0 Herb Stratum 18 45
3				Woody Vine Stratum 0 0
4				Dominance Test Worksheet
6				Number of Dominant
7				Species that are OBL, FACW, or FAC: 0 (A)
9				Total Number of Dominant
10				Species Across all Strata: 2 (B)
	0 :	= Total Cover		Percent of Dominant
Sapling/Shrub	Absolute	Dominant	Indicator	Species that are OBL, FACW, or FAC: 0.00% (A/B)
Stratum Plot Size ( 15 ft. )	% Cover	Species	Status	- 0.00% (12)
1				Prevalence Index Worksheet
2				Total % Cover of:
3				OBL species 0 x 1 = 0 FACW species 0 x 2 = 0
5				FAC species 0 x 3 = 0
6				FACU species 70 x 4 = 280
7				UPL species $20$ x 5 = $100$ Column totals $90$ (A) $380$ (B)
9				Prevalence Index = $B/A = \frac{360}{4.22}$
10				
	0	= Total Cover		Hydrophytic Vegetation Indicators:
Herb Stratum Plot Size ( 5 ft. )	Absolute	Dominant	Indicator	Rapid test for hydrophytic vegetation
,	% Cover	Species	Status	Dominance test is >50%
1 Poa pratensis	<u>40</u> 20	<u>Y</u> Y	FACU	Prevalence index is ≤3.0*  Morphological adaptations* (provide
2 Solidago canadensis 3 Lamium purpureum	15	Y	FACU UPL	supporting data in Remarks or on a
4 Dipsacus fullonum	10	N	FACU	separate sheet)
5 Brassica rapa	5	N	UPL	Problematic hydrophytic vegetation*
6				(explain)
8				*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
9				
10 11				Definitions of Vegetation Strata:
12				Tree - Woody plants 3 in. (7.6 cm) or more in diameter at
13				breast height (DBH), regardless of height.
14 15				Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
15	90	= Total Cover		
				<b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Plot Size ( 30 ft. )	Absolute	Dominant	Indicator	
Stratum 1	% Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in height.
2				noight.
3				
4				Hydrophytic
5	0	= Total Cover		vegetation present? N
		- Total Gover		present:
Remarks: (Include photo numbers here or on a separ	ate sheet)			

Sampling Point: upl-bcr-5/09/2018-04

Depth	Matrix		Red	dox Feat			or confirm the absence Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		Remarks
0-12	10YR 3/4	100					silt loam	
*Type: C=C	oncentration D=I	Denletic	n RM=Reduced	Matrix	CS=Cov	ered or (	Coated Sand Grains	1
	PL=Pore Lining, I			i watin,	00 00.	70100 01 1	Soutou Guna Gramo	
	Indicators:						Indicators for	Problematic Hydric Soils:
Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) *Indicators of hydrophytic vegetation and we			(MLRA Thin Da (MLRA Loamy Deplete A11) Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	147, 14 ark Surfa 147, 14 Gleyed I ad Matrix Dark Su ad Dark S Depress anganese Surface ant Flood rent Mat	Matrix (Fa) Matrix	(F7) (F7) ) s (F12) (I MLRA 13 ils (F19) (1) (MLRA	Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl  LRR N, MLRA 136) 6, 122) (MLRA 148) A 127, 147)	ow Dark Surface (TF12) lain in Remarks)
Restrictive I Type: Depth (inch Remarks:	_ayer (if observed	d):			-		Hydric soil prese	nt? <u>N</u>

		•	Wetland NH-61
Project/Site: Holloway-Knox 138 kV Transmission Lin			
Applicant/Owner: FirstEnergy	State: Ohio		: W-bcr-5/09/2018-01
Investigator(s): M. Thomayer, B.Robertson; Jacobs		vnship, Range: T5N R3W S22	01 (0/ ), 40
Landform (hillslope, terrace, etc.): riverine	Local relief (concave		Slope (%): 10
Subregion (LRR or MLRA): LRR N Lat Soil Map Unit Name: LpF - Lowell-Westmoreland silt loar		Long.: <u>-80.8372</u> cent slo NWI Classification: <u>R3</u> l	Datum: NAD 83 UBH (PEM)
Are climatic/hydrologic conditions of the site typical for the			explain in remarks)
Are vegetation, soil, or hydrology	significantly distu		stances" Yes_
Are vegetation, soil, or hydrology		natic? present?	
<del></del>		(If needed, explain a	any answers in remarks
SUMMARY OF FINDINGS	<u> </u>		
Hydrophytic vegetation present? Yes	Is the complete		•
Hydric soil present? Yes	IS the sampled a	area within a wetland?	<u>es</u>
Wetland hydrology present? Yes			
Remarks:			
DEM wotland within existing T line POW			
PEM wetland within existing T-line ROW.			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indicators (minin	num of two required)
Primary Indicators (minimum of one is required; check al	ll that annly)	•	
,		Surface Soil Cracks (B6)	
	quatic Plants (B14)	Sparsely Vegetated Cond	cave Surface (Do)
	gen Sulfide Odor (C1)	X Drainage Patterns (B10)	
	ed Rhizospheres on Living	Moss Trim Lines (B16)	
Water Marks (B1)Roots (		Dry-Season Water Table	(C2)
· · · · · ·	ice of Reduced Iron (C4)	Crayfish Burrows (C8)	(00)
<u> </u>	t Iron Reduction in Tilled	Saturation Visible on Aeri	
Algal Mat or Crust (B4)  Soils (C	,	Stunted or Stressed Plan	
	uck Surface (C7)	Geomorphic Position (D2	.)
	Explain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		Microtopographic Relief (	D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes X No	Depth (inches):	1 Wetland	
Water table present? Yes X No	· · · /	10 <b>hydrology</b>	
Saturation present? Yes X No	Depth (inches):	0 present?	<u>Y</u>
(includes capillary fringe)			
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous ins	nections), if available:	
20001100 10001404 4444 (01104111 34439,	30101 p110100, p. 011032	poonerio,, ii arai.s.s.s.	
Remarks:			
Nemarks.			
Caturated throughout water in nit at 10"			
Saturated throughout, water in pit at 10"			

EGETATION - U	se scientilic n	ames or plants	· 			Sampling Point:	W-bcr-5/09	9/2018-
Tree Stratum	Plot Size (	30 ft. )	Absolute	Dominant	Indicator	50/20 Thresholds		0%
1100 0	1 10. 0 (	,	% Cover	Species	Status	Tree Stratum		0
						Sapling/Shrub Stratum Herb Stratum		0 63
						Woody Vine Stratum		0
						Dominance Test Workshe Number of Dominant	et	
						Species that are OBL,		
						FACW, or FAC:	2	_(A)
						Total Number of Dominant Species Across all Strata:	2	_(B)
			0	= Total Cover		Percent of Dominant Species that are OBL,		
Sapling/Shrub Stratum	Plot Size (	15 ft. )	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	100.00%	_(A/B)
						Prevalence Index Worksh	eet	
						Total % Cover of: OBL species 25 x 1	= 25	
						FACW species 100 x 2	= 200	_
					FAC species 0 x 3 FACU species 0 x 4		-	
						UPL species 0 x 5	= 0	<del>-</del>
						Column totals 125 (A) Prevalence Index = B/A =	225 1.80	_(B)
						Frevalence index – b/A –	1.60	-
	0	= Total Cover		Hydrophytic Vegetation Ir	ndicators:			
Herb Stratum	Plot Size (	5 ft. )	Absolute	Dominant	Indicator	Rapid test for hydrophy	tic vegetatio	on
	1 101 0120 (	<b>0</b> II. ,	% Cover	Species Y	Status	X Dominance test is >50° X Prevalence index is ≤3.		
Poa palustris Impatiens cape	ensis		30	<u> </u>	FACW FACW	Morphological adaptation	.u." ons* (provid	е
Carex vulpinoi	dea		20	N	OBL	supporting data in Rem		
Juncus effusus Epilobium colo			<u>20</u> 15	N	FACW FACW	separate sheet) Problematic hydrophytic	c vegetation	*
Eupatorium pe			5	N	FACW	(explain)	o vegetation	
Persicaria sagi	ittata		5	N	OBL	*Indicators of hydric soil and wetla present, unless disturbed or proble		nust be
						Definitions of Vegetation	Strata:	
						Tree - Woody plants 3 in. (7.6 cm) breast height (DBH), regardless of		meter a
			105			Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	s than 3 in. DB	H and
				= Total Cover		Herb - All herbaceous (non-woody size, and woody plants less than 3	, .	dless of
Woody Vine Stratum	Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Woody vines - All woody vines gr height.		3 ft in
						Herden wheeter		
			0 = Total Cover			Hydrophytic vegetation		
						present? Y	_	
marks: (Include ph	noto numbers he	ere or on a separa	ate sheet)			.		

Sampling Point: W-bcr-5/09/2018-01

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-18	10YR 5/1		10YR 4/6	25	С	М	sily clay loam	
*Type: C=C	oncentration D=	Denleti	n RM=Reduced	Matrix	CS=Cov	ered or	Coated Sand Grains	
	PL=Pore Lining,		•	iviatii,	00-000	refea of	Coaled Garid Grains	
	Indicators:	W WIGH	17				Indicators for	r Problematic Hydric Soils:
Black H Hydroge Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Su ark Surface (A12 Mucky Mineral (S , MLRA 147, 148 Gleyed Matrix (S4 Redox (S5) d Matrix (S6)	rface (A 1) 1) 1) <b>()</b>	(MLRA Thin Da (MLRA Loamy ( X Deplete Redox I Deplete Redox I Iron-Ma Umbric Piedmoi Red Pai	147, 14 rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flood rent Ma	ace (S9) 8) Matrix (F (F3) rface (F6 Surface ( ions (F8) e Masses (F13) (N dplain So terial (F2	2) (F7) ) s (F12) ( <b>/ILRA 13</b> ils (F19) 1) <b>(MLR</b>	Coast Pra Piedmont (MLRA 13 Very Shal Other (Ex	low Dark Surface (TF12) plain in Remarks)
Restrictive I Type: Depth (inch	_ayer (if observed	d):			-		Hydric soil pres	ent? <u>Y</u>
Remarks:								

			Report Name:		
Project/Site: Holloway-Knox 138 kV Transmission Line	<u>e                                    </u>	Belmont	Sampling Date:		
Applicant/Owner: FirstEnergy		Ohio		upl-bcr-5/09/2018-01	
Investigator(s): M. Thomayer, B.Robertson; Jacobs		Township, Range: ्		2: (0/) 0	
Landform (hillslope, terrace, etc.): hillslope		ave, convex, none)		Slope (%): 8	
Subregion (LRR or MLRA): LRR N Lat. Soil Map Unit Name: LpF- Lowell-Westmoreland silt loams		Long.: -80. percent slor NWI Cla		Datum: NAD 83 e (Upland)	
Are climatic/hydrologic conditions of the site typical for this		Yes X No		plain in remarks)	
Are vegetation, soil, or hydrology	significantly di	disturbed? Are	"normal circums	tances" Yes	
Are vegetation, soil, or hydrology	naturally probl	olematic? pres	sent?		
<del></del>		(If n	ieeded, explain a	ny answers in remarks	
SUMMARY OF FINDINGS					
Hydrophytic vegetation present? No			IO N		
Hydric soil present? No	Is the sample	ed area within a w	vetland? No	0	
Wetland hydrology present? No	,				
Remarks:	-				
11.1. To the fee DEM conflored NH Of its moutined	to the factor and DOM	,			
Upland point for PEM wetland NH-61 in routinel	y maintained ROvv	1			
HYDROLOGY					
Wetland Hydrology Indicators:				um of two required)	
Primary Indicators (minimum of one is required; check all	,		Soil Cracks (B6)		
	uatic Plants (B14)	Sparsely	y Vegetated Conc	ave Surface (B8)	
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	Drainage	e Patterns (B10)		
Saturation (A3) Oxidized	Rhizospheres on Living	ng Moss Tr	rim Lines (B16)		
Water Marks (B1)Roots (C			son Water Table (	(C2)	
Sediment Deposits (B2) Presence	e of Reduced Iron (C4)		Burrows (C8)		
· · · · · /	ron Reduction in Tilled		on Visible on Aeria		
Algal Mat or Crust (B4) Soils (C6	3)	Stunted	Stunted or Stressed Plants (D1)		
Iron Deposits (B5) Thin Muc	ck Surface (C7)	Geomor	rphic Position (D2)		
Inundation Visible on Aerial Other (E	xplain in Remarks)	Shallow	Aquitard (D3)		
Imagery (B7)		Microtor	oographic Relief (D	04)	
Water-Stained Leaves (B9)			eutral Test (D5)	,	
Aquatic Fauna (B13)		<u></u>			
Field Observations:					
Surface water present? Yes No X	CDepth (inches):		Wetland		
Water table present? Yes No X			hydrology		
Saturation present? Yes No X			present?	N	
(includes capillary fringe)			process		
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	inspections), if ava	ilable:		
Remarks:					

/EGETATION - Use scientific names of plants				Sampling Point:	upl-bcr-5/09/2018-
	A ! a ! t a	Derrinant	III to	50/20 Thresholds	200/
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 17 43 0 0
4				Dominance Test Workshe	et
6 7 8 9				Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant	0 (A)
10	0 :	= Total Cover		Species Across all Strata: Percent of Dominant	1(B)
Sapling/Shrub Plot Size ( 15 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:	0.00% (A/B)
1 2 3 4 5 6 7 8 9 9				Prevalence Index Worksh           Total % Cover of:         0         x 1           OBL species         0         x 2           FACW species         0         x 3           FACU species         85         x 4           UPL species         0         x 5           Column totals         85         (A)           Prevalence Index = B/A =         A         A	= 0 = 0 = 0 = 340 = 0
0	0 :	= Total Cover			
Herb Stratum Plot Size ( 5 ft. )  1 Solidago canadensis 2 Poa pratensis 3 Dipsacus fullonum 4 5 6 7 8 9	Absolute % Cover 60 15 10	Dominant Species Y N	Indicator Status FACU FACU FACU	Hydrophytic Vegetation Ir  Rapid test for hydrophy Dominance test is >50% Prevalence index is ≤3. Morphological adaptatic supporting data in Rem separate sheet) Problematic hydrophytic (explain) *Indicators of hydric soil and wetla present, unless disturbed or proble	tic vegetation % 0* ons* (provide arks or on a c vegetation* and hydrology must be ematic
110				Definitions of Vegetation	Strata:
12 13 14				Tree - Woody plants 3 in. (7.6 cm) breast height (DBH), regardless of Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	height.
15	85 =	= Total Cover		Herb - All herbaceous (non-wood)	A plants regardless of
Woody Vine Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	size, and woody plants less than 3  Woody vines - All woody vines gr height.	5.28 ft tall.
3					
4 5	0 :	= Total Cover		Hydrophytic vegetation present? N	-
Remarks: (Include photo numbers here or on a separa	ate sheet)			<u>. L</u>	

Sampling Point: upl-bcr-5/09/2018-01

Profile Desc	ription: (Describ	e to the	depth needed to	docum	ent the i	ndicator	or confirm the absence o	of indicators.)
Depth (Inches)	Matrix Color (moist)	%		ox Feat %		Loc**	Texture	Remarks
0-8	10YR 3/4	100					silt loam	
*T	anachtration D-	Danlatia	n DM-Dadwaad	Matrix	CC=Ca		Contad Cond Crains	
				waux,	CS-C01	vereu or	Coaled Sand Grains	
		IVI—IVIALI					Indicators for I	Problematic Hydric Soile:
*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains  **Location: PL=Pore Lining, M=Matrix  Hydric Soil Indicators:    Dark Surface (S7)								ie Redox (A16) (MLRA 147, 148) loodplain Soils (F19) , 147) w Dark Surface (TF12) ain in Remarks)
	ayer (if observe ocky es): 8	d):			- -		Hydric soil presei	nt? <u>N</u>
Remarks:								

Project/Site: Holloway-Knox 138 kV Transmission Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): riverine Subregion (LRR or MLRA): LRR N Soil Map Unit Name: LpF - Lowell-Westmoreland silt to Are climatic/hydrologic conditions of the site typical for Are vegetation , soil , or hydrologic Are vegetation , soil , or hydrologic summary or hydrologic sum	State: Ohio Section, Towns Local relief (concave, concave, concave, concave, benched, 30 to 70 percer This time of the year? Yes Significantly disturb	Sampling Point: w-bcr-5/09/2018-02
Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present?  Yes Yes Yes	Is the sampled are	ea within a wetland? Yes
Remarks: PEM wetland within existing T-line ROW, alc	ong stream channel.	
HYDROLOGY		
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check Surface Water (A1) True X High Water Table (A2) Hydr X Saturation (A3) Oxid Water Marks (B1) Root Sediment Deposits (B2) Presi Drift Deposits (B3) Rece Algal Mat or Crust (B4) Soils Iron Deposits (B5) Thin	a all that apply) Aquatic Plants (B14) Aquatic Plants (B14) Aquatic Plants (B14) Adjusted Rhizospheres on Living Adjusted Reduced Iron (C4) Adjusted Iron Reduction in Tilled Adjusted Reduced Iron (C4) Adjusted Iron Reduction in Tilled Adjusted Reduced Iron (C4) Adjusted Iron Reduced Iron (C4) Adjusted Iron Reduced Iron (C4) Adjusted Iron Iron Iron Iron Iron Iron Iron Iron	Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)  X Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)  X Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)  X FAC-Neutral Test (D5)
Surface water present?  Water table present?  Saturation present?  (includes capillary fringe)  Yes  X  No  Yes  X  No	X Depth (inches): Depth (inches): Depth (inches): 0	present? Y
Describe recorded data (stream gauge, monitoring well	ll, aerial photos, previous inspe	ctions), if available:
<u></u>		
Remarks:		

/EGETATION - Use scientific names of plants		Sampling Point: w-bcr-5/09/2018-02
Tree Stratum Plot Size ( 30 ft. )  1 2 3 4		50/20 Thresholds   20%   50%
5 6 7 8 9 10  Sapling/Shrub Stratum Plot Size ( 15 ft. )		Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: 2 (A) Total Number of Dominant Species Across all Strata: 2 (B) Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
1	0 = Total Cover	Prevalence Index Worksheet   Total % Cover of:   OBL species   51
Herb Stratum Plot Size ( 5 ft. )  1	Absolute	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  FAC  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14		Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Stratum Plot Size ( 30 ft. )	Absolute Dominant Inc	dicator dicatus Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft all.  Woody vines - All woody vines greater than 3.28 ft in height.
3 4 5	0 = Total Cover	Hydrophytic vegetation present? Y
Remarks: (Include photo numbers here or on a separa	ite sheet)	•

Sampling Point: w-bcr-5/09/2018-02

Depth	Matrix	e to the		lox Feat		iulcator	or confirm the absence	·
(Inches)	Color (moist)	%	Color (moist)	iox reai %	ures Type*	Loc**	Texture	Remarks
0-18	10YR 5/1	75	10YR 4/6	25	С	M	sily clay loam	
0 10	10111 0/1		10111 1/10		<u> </u>		ony olay loan	
<i>3</i> 1	·	•	•	Matrix,	CS=Cov	ered or (	Coated Sand Grains	
	PL=Pore Lining,	M=Matr	ix					
Histisol Histic E Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Sulark Surface (A12) Mucky Mineral (SI J, MLRA 147, 148 Gleyed Matrix (S4) d Matrix (S6)	urface ( <i>F</i> 2) 31) 3 <b>)</b> 4)	(MLRA Thin Da (MLRA Loamy X Deplete Redox I Deplete Redox I Iron-Ma Umbric Piedmo Red Pa	ue Belov 147, 14 rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Depress nganes Surface nt Flood rent Ma	w Surface 8) ace (S9) 8) Matrix (F (F3) rface (F6 Surface ( ions (F8) e Masses (F13) (N lplain So terial (F2	2) (F7) (S (F12) (I (ILRA 13) (IIS (F19) (1) (MLR)	2 cm Muck Coast Prain Piedmont F (MLRA 136) Very Shallo Other (Exp	ow Dark Surface (TF12) lain in Remarks)
Restrictive I Type: Depth (inch	Layer (if observe	d):			- -		Hydric soil prese	nt? <u>Y</u>
Remarks:								

					Upland NH-62
Project/Site: Holloway-Knox 138 kV Trar	nsmission Line	City/County:	Belmont	Sampling Date	
Applicant/Owner: FirstEnergy		State:	Ohio		:: upl-bcr-5/09/2018-02
Investigator(s): M. Thomayer, B.Robertson				ange: T5N R3W S22	
Landform (hillslope, terrace, etc.): hillslop		Local relief (cor			Slope (%): 15
Subregion (LRR or MLRA): LRR N Soil Map Unit Name: LoE- Lowell-Westmore	Lat.: land silt loams, 2	39.98407525 5 to 35 percent s		: <u>-80.83510249</u> WI Classification: Up	Datum: NAD 83
Are climatic/hydrologic conditions of the site		•	Yes X		explain in remarks)
Are vegetation, soil, o	r hydrology	significantly	/ disturbed?	Are "normal circum	stances" Yes
<u> </u>	r hydrology	naturally pr		present?	
·	, o, <u> </u>			•	any answers in remarks
SUMMARY OF FINDINGS					-
Hydrophytic vegetation present? No	_				
Hydric soil present? No	_	Is the sam	pled area with	in a wetland?	<u>Vo</u>
Wetland hydrology present? No	_				
Remarks:					
Unland point for DEM wattend NULC	O im was stimals on	anintainad DO			
Upland point for PEM wetland NH-6	2 in routinely n	naintained RO	VVV		
HYDDOLOGY					
HYDROLOGY					
Wetland Hydrology Indicators:		1 I. A		ndary Indicators (minir	' '
Primary Indicators (minimum of one is requir				urface Soil Cracks (B6)	
Surface Water (A1)		c Plants (B14)		parsely Vegetated Con	
High Water Table (A2)	Hydrogen S	ulfide Odor (C1)	D	rainage Patterns (B10)	
Saturation (A3)	Oxidized Rh	izospheres on Liv	vingM	oss Trim Lines (B16)	
Water Marks (B1)	Roots (C3)		D	ry-Season Water Table	e (C2)
Sediment Deposits (B2)	Presence of	Reduced Iron (C		rayfish Burrows (C8)	
Drift Deposits (B3)		Reduction in Tille		aturation Visible on Ae	
Algal Mat or Crust (B4)	Soils (C6)		S	tunted or Stressed Plar	nts (D1)
Iron Deposits (B5)	Thin Muck S	Surface (C7)	G	eomorphic Position (D2	2)
Inundation Visible on Aerial	Other (Expla	ain in Remarks)	S	hallow Aquitard (D3)	
Imagery (B7)			M	icrotopographic Relief	(D4)
Water-Stained Leaves (B9)			F	AC-Neutral Test (D5)	
Aquatic Fauna (B13)					
Field Observations:				<u> </u>	
Surface water present? Yes	No X	Depth (inches):		Wetland	
Water table present? Yes	No X	Depth (inches):		hydrology	
Saturation present? Yes	No X	Depth (inches):		present?	N
(includes capillary fringe)		_			
Describe recorded data (stream gauge, mon	itoring well acris	I photos provice	ie inepections)	if available:	
Describe recorded data (stream gauge, mon	itoring well, aeria	ii priotos, previot	us irispections),	ii avaliable.	
Domarka					
Remarks:					

EGETATION - (	Jse scientilic n	ames oi pia	nts			Sampling Point:	upl-bcr-5/09/2	2018-
						50/20 Thresholds		_
Tree Stratum	Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Trop Stratum	20% 50% 0 0	6
1			/0 COVE	Species	Status	Tree Stratum Sapling/Shrub Stratum	0 0 6 15	
2						Herb Stratum	17 43	
3				-		Woody Vine Stratum	0 0	
4								
5 6						Dominance Test Worksho Number of Dominant	et	
7						Species that are OBL,		
8						FACW, or FAC:	0 (A	A)
					-	Total Number of Dominant		
0				<del></del>		Species Across all Strata:	4(E	B)
				Total Cover		Percent of Dominant		
Sapling/Shrub			Absolute	Dominant	Indicator	Species that are OBL, FACW, or FAC:	0.00% (A	A/B)
Stratum	Plot Size (	15 ft. )	% Cover	Species	Status	TAGW, OF TAG.	0.0070 (7	7/0)
1 Crataegus cri	us-aalli		15	Y	FACU	Prevalence Index Worksh	eet	
2 Rubus allegh			10	Y	FACU	Total % Cover of:	icci	
3 Rosa multifloi			5	<u>.</u> N	FACU	OBL species 0 x 1	I = 0	
4						FACW species 0 x 2		
5						FAC species 0 x 3		
6					FACU species 100 x 4			
8						Column totals 115 (A)		B)
9						Prevalence Index = B/A =	4.13	-,
0								
	30=	Total Cover		Hydronbysic Vocatetion I	adiaatawa.			
			Absolute	Dominant	Indicator	Hydrophytic Vegetation II  Rapid test for hydrophy		
Herb Stratum	Plot Size (	5 ft. )	% Cover	Species	Status	Dominance test is >50°		
1 Poa pratensis	3		30	Y	FACU	Prevalence index is ≤3		
2 Solidago cana			30	Y	FACU	Morphological adaptati		
3 Daucus carot			15	N	UPL	supporting data in Rem	arks or on a	
4 Achillea mille	folium		10	N	FACU	separate sheet) Problematic hydrophyti	c vegetation*	
6						(explain)	o vegetation	
7						*Indicators of hydric soil and wetla	and hydrology mus	t be
8						present, unless disturbed or probl	ematic	
9						Definitions of Vegetation	Strata:	
1								
2						Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless o		ter at
3							-	and
4 5						Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	is alan sill. DDN 8	ai IU
-			85 =	Total Cover		, ,	v) plante "e"	00 of
14/				5	,	Herb - All herbaceous (non-wood size, and woody plants less than 3		ss Of
Woody Vine	Plot Size (	30 ft. )	Absolute	Dominant	Indicator			
Stratum	`	•	% Cover	Species	Status	Woody vines - All woody vines go	reater than 3.28 ft i	in
2						height.		
2								
4						Hydrophytic		
5						vegetation		
			0 =	Total Cover		present? N	_	
temarks: (Include p	hoto numbers be	ere or on a se	narate sheet)					
omants. (molude p	ANDEO HUMBERS HE	no oi oii a sel	Jaiaic Jileeij					

Sampling Point: upl-bcr-5/09/2018-02

Depth	Matrix	%		dox Fea %		Loc**	Texture	Remarks	
(Inches) 0-8	Color (moist) 10YR 3/4	100	Color (moist)	70	Type*	LOC	silt loam		
0-0	10110 3/4	100					Siit ioaiii		
				d Matrix	, CS=Cov	vered or	Coated Sand Grains		
	PL=Pore Lining,	w=watr	IX				lu dia ataua f	an Backlamatia Ukabia Caila.	
Tyaric Soil	Indicators:		DI- 0-		07\		indicators	or Problematic Hydric Soils:	
Hietical	(Δ1)		Dark Si			o (CO)	2 cm Mı	ick (A10) ( <b>MLRA 147)</b>	
	Histisol (A1) Polyvalue Below Surfa Histic Epipedon (A2) (MLRA 147, 148)					e (30)		rairie Redox (A16) <b>(MLRA 147, 14</b>	
	listic (A3)				ace (S9)			nt Floodplain Soils (F19)	
	en Sulfide (A4)		(MLRA		, ,			136, 147)	
	ed Layers (A5)				Matrix (F	2)		allow Dark Surface (TF12)	
	uck (A10) (LŔR I	N)	Deplete			,		xplain in Remarks) `	
 Deplete	ed Below Dark Su	rface (A	(11) Redox	Dark Sເ	ırface (F6	3)			
	ark Surface (A12	•			Surface (	. ,			
•	Mucky Mineral (S	•			sions (F8				
	I, MLRA 147, 148	-					LRR N, MLRA 136)		
	Gleyed Matrix (S	1)			e (F13) <b>(N</b>		-		
	Redox (S5)						(MLRA 148)		
Strippe	d Matrix (S6)		Red Pa	rent ivia	iteriai (F2	(IVILK	A 127, 147)		
Indicators	of hydrophytic ve	aetation	and wetland by	drology	must be	present	unless disturbed or p	aroblematic	
IIIUICALOIS	oi riyaropriyiic ve	getation	i and welland my	urology	must be	present,	uniess disturbed or p	olobiematic	
Restrictive	Layer (if observe	۹)٠							
	ocky	-).					Hydric soil pre	sent? N	
Depth (inch					_		,,		
Remarks:									

7 : 1/2" - 1		5.1	Report Name: Wetland NH-63					
Project/Site: Holloway-Knox 138 kV Transmissio		Belmont	Sampling Date: 5/9/2018					
Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs	State:	Ohio n, Township, Range:	Sampling Point: <u>w-bcr-5/09/2018-03</u>					
Landform (hillslope, terrace, etc.): riverine		n, Township, Range: ncave, convex, none)						
Subregion (LRR or MLRA): LRR N	Lat.: 39.9814	Long.: -80						
Soil Map Unit Name: WmE - Westmoreland silt loam			lassification: None (PEM)					
Are climatic/hydrologic conditions of the site typical for	or this time of the year?	Yes X No						
Are vegetation, soil, or hydrolo			e "normal circumstances" Yes					
Are vegetation, soil, or hydrolo	ogynaturally pro		esent?					
		1 TI)	needed, explain any answers in remarks					
SUMMARY OF FINDINGS								
Hydrophytic vegetation present? Yes	lo the com							
Hydric soil present? Yes	is the Sain	pled area within a w	wetland? Yes					
Wetland hydrology present? Yes								
Remarks:	•							
DEM watland within existing Tiling POW is	lang atroom channel							
PEM wetland within existing T-line ROW, a	long stream channel.							
HYDROLOGY								
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; chec	rk all that annly)		e Soil Cracks (B6)					
•	,		ly Vegetated Concave Surface (B8)					
	ue Aquatic Plants (B14) drogen Sulfide Odor (C1)		ge Patterns (B10)					
		<del></del>						
	idized Rhizospheres on Liv	<u>-</u>	rim Lines (B16)					
	ots (C3) esence of Reduced Iron (C		ason Water Table (C2) h Burrows (C8)					
	esence of Reduced fron (C ecent Iron Reduction in Tille		ion Visible on Aerial Imagery (C9)					
	ils (C6)		d or Stressed Plants (D1)					
<del></del>	in Muck Surface (C7)		orphic Position (D2)					
<del></del>	her (Explain in Remarks)		v Aquitard (D3)					
	IEI (Explain in Nomaino)		pographic Relief (D4)					
Imagery (B7) Water-Stained Leaves (B9)			eutral Test (D5)					
Aquatic Fauna (B13)		<u> </u>	autai Test (D3)					
Field Observations:	V D-nth (inches)		Watland					
Surface water present? Yes No	X Depth (inches):		Wetland hydrology					
Water table present? Yes X No Saturation present? Yes X No	Depth (inches): Depth (inches):		, ,,					
Saturation present? Yes X No (includes capillary fringe)	Deptil (Illohes).		present? Y					
(Includes capillary Intrige)								
Describe recorded data (stream gauge, monitoring w	√ell, aerial photos, previoι	us inspections), if ava	ailable:					
Remarks:								
ivernans.								

/EGETATION - Use scientific names of plants				Sampling Point: w-bcr-5/09/2018-03
Tree Stratum Plot Size ( 30 ft. )  1	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         33         83           Woody Vine Stratum         0         0
5	0 =  Absolute % Cover	Total Cover  Dominant Species	Indicator Status	Dominance Test Worksheet  Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  100.00% (A/B)
1 2 3 4 5 6 7 8 9 10	0 =	Total Cover		Prevalence Index Worksheet           Total % Cover of:         OBL species         85         x 1 =         85           FACW species         75         x 2 =         150           FAC species         5         x 3 =         15           FACU species         0         x 4 =         0           UPL species         0         x 5 =         0           Column totals         165         (A)         250         (B)           Prevalence Index = B/A =         1.52         (B)
Herb Stratum Plot Size ( 5 ft. )  1    Leersia oryzoides 2    Impatiens capensis 3    Onoclea sensibilis 4    Carex vulpinoidea 5    Typha angustifolia 6    Eupatorium perfoliatum 7    Rumex crispus 8	Absolute % Cover 50 40 30 20 15 5	Dominant Species Y Y N N N N	Indicator Status OBL FACW FACW OBL OBL FACW FAC	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14	165 =	Total Cover		Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( 30 ft. ) 1 2	Absolute % Cover	Dominant Species	Indicator Status	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.
3 4 5	0 =	Total Cover		Hydrophytic vegetation present? Y
Remarks: (Include photo numbers here or on a separa	te sheet)			<u> </u>

Sampling Point: w-bcr-5/09/2018-03

Profile Desc	cription: (Describ	e to the	e depth needed to	docum	ent the in	ndicator	or confirm the absence	of indicators.)
Depth	Matrix		· ·	ox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-4	10YR 5/1	85	10YR 4/6	15	С	М	sily clay loam	
4-8	N 4/	70	10YR 4/6	30	С	М	sily clay loam	
							•	
- ·		•	•	Matrix,	CS=Cov	ered or	Coated Sand Grains	•
**Location:	PL=Pore Lining,	M=Matr	ix					
**Location: PL=Pore Lining, M=Matrix  Hydric Soil Indicators:  Histisol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  (LRR N, MLRA 147, 148)  Stripped Matrix (S4)  Stripped Matrix (S6)  Findicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic  Indicators for Problematic Hydric So  2 cm Muck (A10) (MLRA 147)  (Coast Prairie Redox (A16) (MLRA 147)  (MLRA 147, 148)  (MLRA 147, 148)  (MLRA 147, 148)  (MLRA 136, 147)  Very Shallow Dark Surface (TF12)  Other (Explain in Remarks)  Other (Explain in Remarks)  Thick Dark Surface (A12)  Depleted Dark Surface (F7)  Redox Depressions (F8)  (LRR N, MLRA 147, 148)  Umbric Surface (F13) (MLRA 136, 122)  Fiedmont Floodplain Soils (F19) (MLRA 148)  Red Parent Material (F21) (MLRA 127, 147)  *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic					(A10) (MLRA 147) rie Redox (A16) (MLRA 147, 148) Floodplain Soils (F19) 6, 147) ow Dark Surface (TF12) lain in Remarks)			
	Layer (if observe lock es): 8	d):			<b>-</b>		Hydric soil prese	nt? <u>Y</u>
Remarks:								

Are vegetation , soil , o	Sample   S	State: Ohio Section, Township, Rai ief (concave, convex, r B779 Long.: slopes NV	nge: T5N R3W S15 none): convex -80.83239076 VI Classification: Upla No (If no, ex) Are "normal circums present?	5/9/2018 upl-bcr-5/09/2018-03 Slope (%): 15 Datum: NAD 83 and cplain in remarks)
Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present? No	_ Is th	e sampled area withi	n a wetland? N	0
Remarks:  Upland point for PEM wetland NH-6	3 in routinely maintaine	ed ROW		
HYDROLOGY				
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is requised.)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	red; check all that apply) True Aquatic Plants (BHydrogen Sulfide Odo Oxidized Rhizospheres Roots (C3) Presence of Reduced Recent Iron Reduction Soils (C6) Thin Muck Surface (C) Other (Explain in Rem	Su	dary Indicators (minim rface Soil Cracks (B6) arsely Vegetated Concainage Patterns (B10) oss Trim Lines (B16) y-Season Water Table (ayfish Burrows (C8) turation Visible on Aeria unted or Stressed Plant comorphic Position (D2) allow Aquitard (D3) crotopographic Relief (I.C-Neutral Test (D5)	ave Surface (B8) (C2) al Imagery (C9) s (D1)
Field Observations:  Surface water present? Yes Water table present? Yes Saturation present? Yes (includes capillary fringe)  Describe recorded data (stream gauge, more	No X Depth (in No X Depth (in No X Depth (in No x Depth (in nitoring well, aerial photos, page 2)	nches):	Wetland hydrology present?  if available:	N_
Remarks:				

EGETATION - C	Jse scientific n	ames or plants	<b>3</b>			Sampling Point:	upl-bcr-5	5/09/2018-
			A	Developed	I1! 4 - u	50/20 Thresholds		
Tree Stratum	Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum	20% 0	50% 0
1			/0 OOVCI	Ореспоз	Olalus	Sapling/Shrub Stratum	8	20
2						Herb Stratum	16	40
3		_				Woody Vine Stratum	0	0
4 5						Dominance Test Workshe	oot .	
6						Number of Dominant	,61	
7						Species that are OBL,		
8						FACW, or FAC:	0	(A)
Λ						Total Number of Dominant Species Across all Strata:	4	(B)
·			0	= Total Cover		Percent of Dominant	<u> </u>	(5)
						Species that are OBL,		
Sapling/Shrub	Plot Size (	15 ft. )	Absolute	Dominant	Indicator	FACW, or FAC:	0.00%	(A/B)
Stratum	`	1011. )	% Cover	Species	Status			
1 Rubus alleghe			20	<u>Y</u>	FACU	Prevalence Index Worksh	eet	
2 <u>Rosa multiflor</u> 3	ra		20	Y	FACU	Total % Cover of:  OBL species 0 x 1	0	
3 4						OBL species 0 x 1 FACW species 0 x 2		
5						FAC species 10 x 3	30	)
6						FACU species 95 x 4		
8						UPL species 15 x 5 Column totals 120 (A)		5 (B)
^						Prevalence Index = B/A =	4.04	<u>5</u> (D)
			40	= Total Cover		Undrankutia Vanatatian Ir	!	
			Absolute	Dominant	Indicator	Hydrophytic Vegetation Ir  Rapid test for hydrophy		
Herb Stratum	Plot Size (	5 ft. )	% Cover	Species	Status	Dominance test is >50°		ation
1 Poa pratensis			30	. Y	FACU	Prevalence index is ≤3.	.0*	
2 Achillea millet			25	<u>Y</u>	FACU	Morphological adaptation		
3 Lamium purpu 4 Viola sororia	ureum		<u>15</u> 10	N N	UPL FAC	supporting data in Rem separate sheet)	iarks or or	n a
5					TAO	Problematic hydrophyti	c vegetati	on*
6						(explain)	-	
7						*Indicators of hydric soil and wetla		y must be
8 9						present, unless disturbed or proble	ematic	
						Definitions of Vegetation	Strata:	
1						Tree - Woody plants 3 in. (7.6 cm	) or more in	diameter at
						breast height (DBH), regardless of		
						Sapling/shrub - Woody plants les	ss than 3 in.	DBH and
5						greater than 3.28 ft (1 m) tall.		
			80	= Total Cover		Herb - All herbaceous (non-wood)	y) plants, reç	gardless of
Woody Vine			Absolute	Dominant	Indicator	size, and woody plants less than 3	3.28 ft tall.	
Stratum	Plot Size (	30 ft. )	% Cover	Species	Status	Woody vines - All woody vines gr	reater than 3	3.28 ft in
1						height.		
2 3								
4						Hydrophytic		
5						vegetation		
			0	= Total Cover		present? N		
emarks: (Include p	hoto numbers he	ere or on a separa	ate sheet)					

Sampling Point: upl-bcr-5/09/2018-03

Depth	Matrix			dox Feat	tures		Texture	Remarks		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	**			
0-8	10YR 3/4	100					silt loam			
					1					
					1					
					1					
					1					
*T 0-0	l Yanaantratian D-	Danlatia	DM-Daduas	l Matrix	00-00	rarad ar	Coated Sand Grains			
	פרו oncentration, ש- PL=Pore Lining,			ı Maurix,	, 05=00	vered or	Coaled Sand Grains			
	I Indicators:	IVI-IVIALI	IX .				Indicators fo	or Droblemetic Hydric Seiler		
riyuric 30ii	i iliulcators.		Dork S	ırfana (G	27)		illulcators it	or Problematic Hydric Soils:		
Histisol	(Δ1)			urface (S	ອາ) w Surfac	o (S9)	2 cm Mu	ck (A10) ( <b>MLRA 147)</b>		
	Epipedon (A2)		•	ue belo 147, 14		e (30)		airie Redox (A16) <b>(MLRA 147, 148</b>		
	listic (A3)				ace (S9)			t Floodplain Soils (F19)		
	en Sulfide (A4)			147, 14	. ,					
	ed Layers (A5)				Matrix (F	(MLRA 136, 147) F2) Very Shallow Dark Surface (TF12)				
	uck (A10) (LRR	N)		ed Matrix		<b>-</b> )		xplain in Remarks)		
	ed Below Dark Su				rface (F6	3)		,		
	ark Surface (A12		· -		Surface	•				
	Mucky Mineral (S	-			ions (F8	. ,				
•	I, MLRA 147, 14	•					LRR N, MLRA 136)			
	Gleyed Matrix (S	-				VILRA 13				
	Redox (S5)	-,					(MLRA 148)			
	d Matrix (S6)						A 127, 147)			
	, ,				,	, ,	,			
*Indicators	of hydrophytic ve	getation	and wetland hy	drology	must be	present,	unless disturbed or p	roblematic		
Restrictive	Layer (if observe	d):								
	ocky	,					Hydric soil pre	sent? N		
Depth (inch	es): 8				_			<del></del>		
Remarks:										

5 1 1/2%	27. /2 1	<b>-</b>	Report Name: Wetland NH-64				
Project/Site: Holloway-Knox 138 kV Transmission Lin		Belmont	Sampling Date: 5/8/2018				
Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs		Ohio Township, Range:	Sampling Point: <u>w-mdt-5/08/2018-01</u>				
Landform (hillslope, terrace, etc.): terrace		cave, convex, none					
Subregion (LRR or MLRA): LRR N Lat.		Long.: -80					
Soil Map Unit Name: RcE - Richland moderately stony loa			lassification: None (PEM)				
Are climatic/hydrologic conditions of the site typical for thi	s time of the year?	Yes X No					
Are vegetation, soil, or hydrology	significantly of		e "normal circumstances" Yes				
Are vegetation , soil , or hydrology	naturally prob		esent?				
		(If	needed, explain any answers in remarks				
SUMMARY OF FINDINGS	Т						
Hydrophytic vegetation present? Yes	la the same	lad area within a v	wattand2 Voo				
Hydric soil present? Yes	is the sampi	led area within a v	wetland? Yes				
Wetland hydrology present? Yes							
Remarks:	1						
DEAL well-red buffer everynd ambamanal atmana	to an estimate and an alman	'					
PEM wetland buffer around ephemeral stream	in routinely maintai	inea ROVV					
LIVEROLOGY							
HYDROLOGY		0	to the force of the transport of the property of the transport of the tran				
Wetland Hydrology Indicators:	(4) (4 l. A		Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; check all	,		e Soil Cracks (B6)				
	quatic Plants (B14)		ly Vegetated Concave Surface (B8)				
	en Sulfide Odor (C1)		ge Patterns (B10)				
X Saturation (A3) Oxidized	d Rhizospheres on Livir	ngMoss T	rim Lines (B16)				
Water Marks (B1) Roots (C	23)	Dry-Sea	ason Water Table (C2)				
	ce of Reduced Iron (C4)		h Burrows (C8)				
	Iron Reduction in Tilled		ion Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)Soils (Ci	•		d or Stressed Plants (D1)				
	ıck Surface (C7)		orphic Position (D2)				
Inundation Visible on AerialOther (E	Explain in Remarks)		v Aquitard (D3)				
Imagery (B7)			pographic Relief (D4)				
Water-Stained Leaves (B9)		X FAC-Ne	eutral Test (D5)				
Aquatic Fauna (B13)							
Field Observations:							
Surface water present? Yes No	X Depth (inches):		Wetland				
Water table present? Yes X No	Depth (inches):	10	hydrology				
Saturation present? Yes X No	Depth (inches):	0	present? Y				
(includes capillary fringe)							
Describe recorded data (atraom gougo monitoring well a	provious	:	_0_0_				
Describe recorded data (stream gauge, monitoring well, a	eriai pnotos, previous	inspections), ii ava	allable:				
Remarks:							
Saturated throughout, water in pit at 10"							

EGETATION - Use scientific names of plants					w-mdt-5/08/2018-0
	Absoluto	Dominant	Indicator	50/20 Thresholds	200/ 500/
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 27 68 0 0
4 5				Dominance Test Workshe	et
6				Number of Dominant Species that are OBL,	
8				FACW, or FAC:	(A)
9 0				Total Number of Dominant Species Across all Strata:	(B)
	0	= Total Cover		Percent of Dominant	
Sapling/Shrub Stratum Plot Size ( 15 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:	100.00% (A/B)
1				Prevalence Index Worksh           Total % Cover of:         0BL species         50         x 1           FACW species         85         x 2           FAC species         0         x 3           FACU species         0         x 4           UPL species         0         x 5           Column totals         135         (A)           Prevalence Index = B/A =         A	= 50 = 170 = 0 = 0
·	0	= Total Cover		Illudranhutia Varatatian II	diagtana
Herb Stratum Plot Size ( 5 ft. )  1	Absolute % Cover 50 20 10 15 15 25	Dominant Species Y N N N	Indicator Status FACW OBL FACW OBL OBL FACW	Hydrophytic Vegetation Ir  Rapid test for hydrophy X Dominance test is >50% X Prevalence index is ≤3.  Morphological adaptatic supporting data in Rem separate sheet) Problematic hydrophytic (explain) *Indicators of hydric soil and wetla present, unless disturbed or proble	tic vegetation  6 0* ons* (provide arks or on a c vegetation*
0				Definitions of Vegetation	Strata:
1 2 3				Tree - Woody plants 3 in. (7.6 cm) breast height (DBH), regardless of	height.
4 5				Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	S Than 3 III. Ddn anu
	135	= Total Cover		Herb - All herbaceous (non-woody	,
Woody Vine Plot Size ( 30 ft. )  1 2	Absolute % Cover	Dominant Species	Indicator Status	size, and woody plants less than 3  Woody vines - All woody vines gr height.	
3					
4 5	0	= Total Cover		Hydrophytic vegetation present? Y	_
emarks: (Include photo numbers here or on a separa	ate sheet)				
	,				

Depth	Matrix		Red	lox Feat	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-14	10YR 4/1	100					silty clay	
							•	
Type: C=C	oncentration, D=	Depletion	n, RM=Reduced	Matrix,	CS=Cov	vered or	Coated Sand Grain	is .
*Location:	PL=Pore Lining,	M=Matr	ix					
lvdric Soil	Indicators:						Indicators	for Problematic Hydric Soils:
Black H Hydrogo Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Surark Surface (A12 Mucky Mineral (S , MLRA 147, 148 Gleyed Matrix (S6 d Matrix (S6)	urface (A 2) 61) <b>3)</b> 4)	(MLRA Thin Da (MLRA Loamy Deplete Redox I Pron-Ma Umbric Piedmo Red Pa	147, 14 Irk Surfa 147, 14 Gleyed I d Matrix Dark Surd d Dark S Depress nganese Surface nt Flood rent Mat	ice (S9)  Natrix (F (F3)  fface (F6 Surface (ions (F8 e Masse (F13) (N plain So erial (F2	(F7) (F7) ) s (F12) ( MLRA 13 ils (F19) t1) (MLR	Coast Piedm (MLR/ Very S X Other	
Restrictive I Гуре: Depth (inch	_ayer (if observe	d):					Hydric soil p	resent? Y
Remarks:						•		
	e saturated and ed from stream			nat way	and m	ottles h	ave yet to form.	Some soil appears to be

Project/Site: Holloway-Knox 138 kV Transmission Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N Soil Map Unit Name: LpF - Lowell-Westmoreland silt Are climatic/hydrologic conditions of the site typical of	State: Section Local relief (con Lat.: 39.97849 Ioams, benched, 30 to 70	, Township, Range: cave, convex, none Long.: -80	Sampling Date: 5/ Sampling Point: up S15 T5N R3W ): convex 0.828537 lassification: None	Slope (%): 0   Datum: NAD 83
Are vegetation, soil, or hydrold, or hydrold		oblematic? pre	e "normal circumsta esent? needed, explain any	nces" <u>Yes</u>
Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present? No No	Is the samp	oled area within a \	wetland? No	_
Remarks:  Upland point for PEM wetland NH-64 in rou	utinely maintained RO	W		_
HYDROLOGY				
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	ck all that apply) ue Aquatic Plants (B14) rdrogen Sulfide Odor (C1) rdidized Rhizospheres on Liviots (C3) esence of Reduced Iron (Cacent Iron Reduction in Tille rils (C6) in Muck Surface (C7) her (Explain in Remarks)	Surface Sparse Drainag Moss T Dry-Se 4) Crayfis d Saturat Stunted Geomo Shallov Microto	Indicators (minimure Soil Cracks (B6) ly Vegetated Concave Patterns (B10) Trim Lines (B16) ason Water Table (Ch Burrows (C8) tion Visible on Aerial or Stressed Plants (Ca) by Aquitard (D3) pographic Relief (D4) eutral Test (D5)	e Surface (B8)  2) Imagery (C9) (D1)
Field Observations:  Surface water present? Yes No Water table present? Yes No Saturation present? Yes No (includes capillary fringe)  Describe recorded data (stream gauge, monitoring v	X Depth (inches): X Depth (inches): X Depth (inches): vell, aerial photos, previous		Wetland hydrology present?  ailable:	N
Remarks:				

			Sampling Point: upi-mat-5/08/2018-0
Tree Stratum Plot Size ( 30 ft. )  1 2 3 4		ominant Indicator pecies Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         21         53           Woody Vine Stratum         0         0
5 6 7 8 9			Dominance Test Worksheet  Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata:  1 (B)
Sapling/Shrub Plot Size ( 15 ft. )	Absolute Do	al Cover ominant Indicator pecies Status	Percent of Dominant Species that are OBL, FACW, or FAC:
1 2 3 4 5 6 7 8 9 10			Prevalence Index Worksheet           Total % Cover of:         0         x 1 = 0         0         0         x 2 = 0         0         0         x 2 = 0         0         0         x 3 = 0         0         0         x 3 = 0         0         0         x 4 = 420         0         0         0         x 5 = 0         0
Herb Stratum Plot Size ( 5 ft. )  1	Absolute Do	ominant Indicator pecies Status Y FACU N FACU	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  Dominance test is >50%  Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14			Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Stratum Plot Size ( 30 ft. )	Absolute Do	ominant Indicator pecies Status	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.
3 4 5	0 = Tot	al Cover	Hydrophytic vegetation present? N
Remarks: (Include photo numbers here or on a sepa	rate sheet)		

Profile Desc	cription: (Descri	be to the	depth needed to	o docum	nent the i	indicator	or confirm the abse	ence of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Red Color (moist)	dox Feat %	tures Type*	Loc**	Texture	Remarks
0-8	10YR ¾	100	Odioi (moist)	70	Турс	Loc	silt loam	
± <b>T</b> 0 0					00.0	<u> </u>		
	oncentration, D= PL=Pore Lining,			ı Matrix,	, CS=Co	verea or	Coated Sand Grair	ns .
	Indicators:						Indicators	s for Problematic Hydric Soils:
Black H Hydrogo Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	ipipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR d Below Dark S eark Surface (A1) Mucky Mineral (S I, MLRA 147, 14 Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface ( <i>F</i> 2) 51) <b>8)</b> 4)	Polyval  (MLRA Thin Da  (MLRA Loamy Deplete Redox Iron-Ma Umbric Red Pa	Dark Surface (S7) Polyvalue Below Surface (S8) (MLRA 147, 148) Thin Dark Surface (S9) (MLRA 147, 148) Loamy Gleyed Matrix (F2) Depleted Matrix (F3) Redox Dark Surface (F6) Depleted Dark Surface (F7) Redox Depressions (F8) Iron-Manganese Masses (F12) (L Umbric Surface (F13) (MLRA 136 Piedmont Floodplain Soils (F19) (I Red Parent Material (F21) (MLRA)				
Restrictive I Type: Depth (inch	Layer (if observe	ed):			<b>-</b>		Hydric soil p	present? N
Remarks:								

Project/Site: Holloway-Knox 138 kV Tra Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N Soil Map Unit Name: RCE - Richland moder Are climatic/hydrologic conditions of the site Are vegetation , soil , o Are vegetation , soil , o	; Jacobs Lat.: ately stony loam typical for this t	State: Section Local relief (co 39.9775 n, 25 to 40 percer ime of the year?	n, Township, F ncave, convex Long nt slopes N Yes X y disturbed?	Sampling Date Sampling Point Sange: S15 T5N R3W , none): concave .: -80.8259 NWI Classification: No No (If no, e Are "normal circumstances" pre	Slope (%): 3 Datum: NAD 83 ne (PEM) explain in remarks) Yes
Hydrophytic vegetation present? Hydric soil present? Wetland hydrology present? Yes Yes	-	Is the sam	pled area wit	hin a wetland? Y	<u>'es</u>
Remarks: PEM wetland on hillside in routinely	√ maintained F	ROW. Originat	es from see	<b>)</b> .	
HYDROLOGY					
Wetland Hydrology Indicators:				ondary Indicators (minir	
Primary Indicators (minimum of one is requi	red; check all th	at apply)		Surface Soil Cracks (B6)	
Surface Water (A1)	True Aquat	ic Plants (B14)	\$	Sparsely Vegetated Cond	cave Surface (B8)
High Water Table (A2)	Hydrogen S	Sulfide Odor (C1)	<u>X</u> [	Orainage Patterns (B10)	
X Saturation (A3)	Oxidized R	hizospheres on Liv	ingN	Moss Trim Lines (B16)	
Water Marks (B1)	Roots (C3)			Ory-Season Water Table	(C2)
Sediment Deposits (B2)	Presence of	of Reduced Iron (C	4)(	Crayfish Burrows (C8)	
Drift Deposits (B3)		n Reduction in Tille		Saturation Visible on Aeri	3 , , ,
Algal Mat or Crust (B4)	Soils (C6)			Stunted or Stressed Plan	
Iron Deposits (B5)		Surface (C7)		Seomorphic Position (D2	2)
Inundation Visible on Aerial	Other (Exp	lain in Remarks)		Shallow Aquitard (D3)	
Imagery (B7)				/licrotopographic Relief (	D4)
Water-Stained Leaves (B9)			<u>X</u> F	AC-Neutral Test (D5)	
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes	NoX	_Depth (inches)		Wetland	
Water table present? Yes	NoX	_ Depth (inches)		hydrology	V
Saturation present? Yes X (includes capillary fringe)	No	Depth (inches)	:0	present?	<u> </u>
(molddes capillary infige)					
Describe recorded data (stream gauge, mor	nitoring well, aer	ial photos, previo	ous inspections	s), if available:	
Remarks:					
Saturated throughout					

				Sampling Point: w-mat-5/08/2018-02
Tree Stratum Plot Size ( 30 ft. )  1 2 3 4	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         23         58           Woody Vine Stratum         0         0
5 6 7 8 9				Dominance Test Worksheet  Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  1 (B)
Sapling/Shrub Plot Size( 15 ft. )	O = Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	Percent of Dominant Species that are OBL, FACW, or FAC:
1		Tabl Court		Prevalence Index Worksheet           Total % Cover of:         OBL species         35         x 1 = 35           FACW species         80         x 2 = 160           FAC species         0         x 3 = 0           FACU species         0         x 4 = 0           UPL species         0         x 5 = 0           Column totals         115         (A)         195           Prevalence Index = B/A =         1.70
Herb Stratum Plot Size ( 5 ft. )  1    Juncus effusus 2    carex vulpinoidea 3    onoclea sensibilis 4    Typha angustifolia 5    Epilobium parviflorum 6    Persicaria maculosa 7	0 Absolute % Cover 5 20 60 5 10	Total Cover  Dominant Species N N Y N N N N N N	Indicator Status FACW OBL FACW OBL OBL FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14				Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( 30 ft. )  1 2	Absolute % Cover	Total Cover  Dominant Species	Indicator Status	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.
3 4 5	0 :	= Total Cover		Hydrophytic vegetation present? Y
Remarks: (Include photo numbers here or on a separ	rate sheet)			

Depth	Matrix		I Red	lox Feat	tures		Texture	Remarks			
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks			
0-12	10YR 4/1	98	10YR 4/3	2	RM	М	silty clay				
							•				
*Type: C=C	oncentration, D=	Depleti	on, RM=Reduced	Matrix,	CS=Cov	ered or	Coated Sand Grains				
**Location: I	PL=Pore Lining,	M=Matı	ix								
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils:			
			Dark Su								
Histisol	\ /		•		w Śurfac	e (S8)		(A10) (MLRA 147)			
	pipedon (A2)			147, 14	8) ace (S9)			ie Redox (A16) (MLRA 147, 148)			
	istic (A3) en Sulfide (A4)			147, 14	. ,		Piedmont Floodplain Soils (F19)				
	d Layers (A5)				Matrix (F.	2)	<b>(MLRA 136, 147)</b> Very Shallow Dark Surface (TF12)				
	uck (A10) <b>(LRR I</b>	۷)	X Deplete	,	`	۷)	Other (Explain in Remarks)				
	d Below Dark Su				rface (F6	3)	Other (EXP	an in remarks)			
	ark Surface (A12	`	<i>'</i>		Surface (	,					
Sandy N	Mucky Mineral (S	, 1)	Redox I	Depress	ions (F8	)					
,	, MLŔA 147, 148	,					LRR N, MLRA 136)				
Sandy 0	Gleyed Matrix (S₄	<b>1</b> )	Umbric	Surface	e (F13) <b>(N</b>	/ILRA 13	6, 122)				
Sandy F	Redox (S5)						(MLRA 148)				
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) <b>(MLR</b>	A 127, 147)				
*Indicators o	of hydrophytic ve	getatior	n and wetland hyd	drology r	must be p	oresent,	unless disturbed or prob	lematic			
Restrictive L	_ayer (if observe	d):									
Type:	, ,	,					Hydric soil prese	nt? Y			
Depth (inche	es):				_						
Remarks:											

		Report Name: Upland NH-65
Project/Site: Holloway-Knox 138 kV Transmission L	ine City/County: Belmo	
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: upl-mdt-5/08/2018-02
Investigator(s): M. Thomayer, B.Robertson; Jacobs	Section, Town	nship, Range: S15 T5N R3W
Landform (hillslope, terrace, etc.): hillside	Local relief (concave, o	
	at.: 39.97752	Long.: -80.82579 Datum: NAD 83
Soil Map Unit Name: RcE - Richland moderately stony I	oam, 25 to 40 percent slopes	NWI Classification: None
Are climatic/hydrologic conditions of the site typical for	this time of the year? Yes	X No (If no, explain in remarks)
Are vegetation, soil, or hydrology	significantly disturb	bed? Are "normal Yes
Are vegetation, soil, or hydrology	naturally problema	
		(If needed, explain any answers in remarks)
SUMMARY OF FINDINGS		
Hydrophytic vegetation present? No		
Hydrophytic vegetation present? No No No	Is the sampled ar	rea within a wetland? No
Wetland hydrology present?	io ino campica ai	
votiana nyarology present:		
Remarks:		
Unlaw displayed for DEM weekland NUL CE in variety	and the second second	
Upland point for PEM wetland NH-65 in routir	nely maintained ROW	
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check a	all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True /	Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
<del></del>	ogen Sulfide Odor (C1)	Drainage Patterns (B10)
	zed Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots		Dry-Season Water Table (C2)
	ence of Reduced Iron (C4)	Crayfish Burrows (C8)
	nt Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils	(C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5) Thin M	Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Other	(Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		_
Field Observations:		
Surface water present? Yes No	X Depth (inches):	Wetland
Water table present? Yes No	X Depth (inches):	hydrology
Saturation present? Yes No	X Depth (inches):	present? N
(includes capillary fringe)		<u> </u>
Describe recorded data (stream gauge, monitoring well	, aerial photos, previous insp	ections), if available:
Remarks:		
incinario.		

				Sampling Point: upi-mat-5/08/2018-02
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         21         53           Woody Vine Stratum         0         0    Dominance Test Worksheet
6 7 8 9 10		= Total Cover		Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata:  Percent of Dominant
Sapling/Shrub Plot Size( 15 ft. ) Stratum	Absolute % Cover	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:
1		= Total Cover		Prevalence Index Worksheet           Total % Cover of:         0         x 1 = 0         0         0         x 2 = 0         0         x 2 = 0         0         x 3 = 0         0         x 3 = 0         0         x 4 = 420         0         x 4 = 0         0         x 4 = 0         0
Herb Stratum Plot Size ( 5 ft. )  1 Poa pratensis 2 Rosa multiflora 3 Solidago sp 4 Dipsacus fullonum 5 6 7 8 9	Absolute % Cover 30 15 50 10	Dominant Species Y N Y	Indicator Status FACU FACU FACU FACU	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14				Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/shrub - Woody plants less than 3 in. DBH and
Woody Vine Plot Size ( 30 ft. ) 1	105 = Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	greater than 3.28 ft (1 m) 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.
3 4 5		= Total Cover		Hydrophytic vegetation present? <u>N</u>
Remarks: (Include photo numbers here or on a separa s	ate sheet)			

Profile Desc	cription: (Descril	oe to the	depth needed to	o docur	nent the	indicator	or confir	m the absence	of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Red Color (moist)	ox Feat %	tures Type*	Loc**	7	Texture	Remarks
0-8	10YR 5/3	100	Color (molor)	70	T T	1	gravel in pit		
							silt loa		g
• •	oncentration, D= PL=Pore Lining,		on, RM=Reduced ix	d Matrix	k, CS=Co	vered or	Coated	Sand Grains	
Hydric Soil	Indicators:						ı	ndicators for	Problematic Hydric Soils:
Black H Hydrogo Stratifie 2 cm Mi Deplete Thick D Sandy N (LRR N Sandy G Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR d Below Dark St ark Surface (A12 Mucky Mineral (S , MLRA 147, 14 Gleyed Matrix (S Redox (S5) d Matrix (S6)	Dark Surface (S7) Polyvalue Below Surface (MLRA 147, 148) Thin Dark Surface (S9) (MLRA 147, 148) Loamy Gleyed Matrix (F RR N) Redox Dark Surface (F (A12) Depleted Dark Surface (A15) Redox Depressions (F8 (A16) Redox Depressions (F8 (A17) Redox Depressions (F8 (A18) Umbric Surface (F13) ( Piedmont Floodplain So			52) 6) (F7) 6) s (F12) ( MLRA 13 oils (F19) 21) (MLR	(S8) 2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16) (MLRA 147, 148			
	Layer (if observe lock es): 8+	d):			-		Нус	dric soil prese	nt? <u>N</u>
Remarks:									

		•	Wetland NH-66
Project/Site: Holloway-Knox 138 kV Transmission Lin		mont Sampling Date:	
Applicant/Owner: FirstEnergy  Thomself Behavior Behavior Income	State: Ohio		: w-mdt-5/08/2018-03
Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): terrace		wnship, Range: S15 T5N R3W convex. none): concave	Slope (%): 3
• • • • • • • • • • • • • • • • • • • •	Local relief (concave 39.9758		Slope (%): 3 Datum: NAD 83
Subregion (LRR or MLRA): LRR N Lat. Soil Map Unit Name: RcE - Richland moderately stony loa		Long.: -80.8234 es NWI Classification: R3	
Are climatic/hydrologic conditions of the site typical for thi	s time of the year? Ye		explain in remarks)
Are vegetation, soil, or hydrology	significantly dist		stances" <u>Yes</u>
Are vegetation, soil, or hydrology	naturally problen		
		(If needed, explain a	any answers in remarks
SUMMARY OF FINDINGS	Г		
Hydrophytic vegetation present? Yes	le the sampled	eres within a watland?	'aa
Hydric soil present? Yes	is the sampled	area within a wetland?	<u>es</u>
Wetland hydrology present? Yes			
Remarks:			
DEM wotland in valley biggeted with etroome in	tinaly maintained	DOM	
PEM wetland in valley bisected with streams in	routinely maintained	ROW.	
LIVEROLOGY			
HYDROLOGY		O constantinatore (minim	. f. (
Wetland Hydrology Indicators:	0 4 · · · · · 1, A	Secondary Indicators (minin	
Primary Indicators (minimum of one is required; check all	,	Surface Soil Cracks (B6)	
	uatic Plants (B14)	Sparsely Vegetated Cond	cave Surface (B8)
	en Sulfide Odor (C1)	X Drainage Patterns (B10)	
X Saturation (A3) Oxidized	d Rhizospheres on Living	Moss Trim Lines (B16)	
Water Marks (B1) Roots (C	3)	Dry-Season Water Table	(C2)
	e of Reduced Iron (C4)	Crayfish Burrows (C8)	
	Iron Reduction in Tilled	Saturation Visible on Aeri	
Algal Mat or Crust (B4) Soils (C	•	Stunted or Stressed Plan	
	ck Surface (C7)	Geomorphic Position (D2	<u>'</u> .)
Inundation Visible on AerialOther (E	Explain in Remarks)	Shallow Aquitard (D3)	
Imagery (B7)		X Microtopographic Relief (	D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)	
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes X No	Depth (inches):	1 Wetland	
	X Depth (inches):	hydrology	
Saturation present? Yes X No	Depth (inches):	0 present?	Υ
(includes capillary fringe)	<u> </u>		
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous ins	spections), if available:	
Remarks:			
Saturated throughout, pockets of inundation. Re	eceives flooding from	streams	
J , ,	Ü		

				Sampling Point: w-mat-5/08/2018-03
Tree Stratum Plot Size ( 30 ft. )  1 2 3 4	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         36         90           Woody Vine Stratum         0         0
5 6 7 8 9				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)
Sapling/Shrub Plot Size( 15 ft. ) Stratum	O = Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	Percent of Dominant Species that are OBL, FACW, or FAC:
1 2 3 4 5 6 7 8 9		= Total Cover		Prevalence Index Worksheet           Total % Cover of:         0BL species         35         x 1 = 35           PACW species         145         x 2 = 290           PAC species         0         x 3 = 0           PACU species         0         x 4 = 0           UPL species         0         x 5 = 0           Column totals         180         (A)         325           Prevalence Index = B/A =         1.81
Herb Stratum Plot Size ( 5 ft. )  1     Juncus effusus 2     carex vulpinoidea 3     onoclea sensibilis 4     Typha angustifolia 5     Epilobium parviflorum 6     Persicaria maculosa 7     Scirpus cyperinus 8     Lysimachia nummularia	Absolute % Cover 20 5 30 20 10 10 15 70	Dominant Species N N Y N N N N	Indicator Status FACW OBL FACW OBL OBL FACW FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14				Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( 30 ft. )  1 2	Absolute % Cover	Total Cover  Dominant Species	Indicator Status	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.
3 4 5	0 =	= Total Cover		Hydrophytic vegetation present? Y
Remarks: (Include photo numbers here or on a separ	ate sheet)			

	· · · · · · · · · · · · · · · · · · ·	e to the				ndicator	or confirm the absence	of indicators.)			
Depth (Inches)	Matrix Color (moist)	%	Color (moist)	lox Feat %	ures Type*	Loc**	Texture	Remarks			
0-12	10YR 3/1	100	Color (moist)	70	Туре	LUC	silty clay				
0-12	10111 3/1	100					Silty Clay				
	•	•	•	l Matrix,	CS=Cov	ered or	Coated Sand Grains				
	PL=Pore Lining,	M=Matr	ix								
Hydric Soil	Indicators:		DI. C.		\ <b>7</b> \		Indicators for	Problematic Hydric Soils:			
Histisol	(A1)			ırface (S	v Surfac	(82)	2 om Muck	(A10) ( <b>MLRA 147)</b>			
	pipedon (A2)		-	147, 14		e (30)		rie Redox (A16) <b>(MLRA 147, 148)</b>			
	istic (A3)				ce (S9)						
	en Sulfide (A4)		(MLRA	147, 14	B) ` ´	(MLRA 136, 147)					
Stratifie	d Layers (À5)		Loamy	Gleyed I	, Matrix (F						
2 cm M	uck (A10) (LRR			d Matrix	(F3)	X Other (Explain in Remarks)					
Deplete	d Below Dark Sເ	ırface (A			face (F6		<u>—</u>				
Thick D	ark Surface (A12	2)	Deplete	d Dark S	Surface (	(F7)					
Sandy N	Mucky Mineral (S	31)			ions (F8						
	, MLRA 147, 148						LRR N, MLRA 136)				
	Sleyed Matrix (S	4)				(MLRA 136, 122)					
	Redox (S5)					pils (F19) ( <b>MLRA 148</b> )					
Stripped	d Matrix (S6)		Red Pa	rent Mat	erial (F2	1) <b>(MLR</b>	A 127, 147)				
*Indicators	of hydrophytic ve	getation	and wetland hy	drology i	must be	present,	unless disturbed or pro	blematic			
Restrictive I	_ayer (if observe	d):									
Туре:	, (	,					Hydric soil prese	ent? Y			
Depth (inch	es):				•						
Remarks:											
Most of	soil appears to	be re	cently deposite	ed by st	tream a	ind mea	andering channels fr	om uplands.			

D : 1/0"	. 0:1 10	D	Report Name. Op			
Project/Site: Holloway-Knox 138 kV Transmission L		Belmont	Sampling Date: 5/8			
Applicant/Owner: FirstEnergy		Ohio	Sampling Point: up	l-mdt-5/08/2018-03		
Investigator(s): M. Thomayer, B.Robertson; Jacobs			ge: S15 T5N R3W	01 (01) 0.4		
Landform (hillslope, terrace, etc.): terrace	Local relief (cond			Slope (%): <u>0-1</u>		
, <u> </u>	at.: 39.975501		-80.823036	Datum: NAD 83		
Soil Map Unit Name: RcE - Richland moderately stony le	barn, 25 to 40 percent s	siopes ivvi	I Classification: None			
Are climatic/hydrologic conditions of the site typical for t	•	Yes X	·` ` '	ain in remarks)		
Are vegetation, soil, or hydrology			Are "normal circumstar	ices" Yes		
Are vegetation, soil, or hydrology	naturally pro	blematic?	present?			
			(If needed, explain any	answers in remarks)		
SUMMARY OF FINDINGS	<u> </u>					
Hydrophytic vegetation present? No_						
Hydric soil present? No	Is the samp	led area within	a wetland? No	_		
Wetland hydrology present? No				<del>_</del>		
Remarks:						
Tromand.						
Upland point for PEM wetland NH-66 in routing	nely maintained RO	W				
Opiana point for 1 EW Wotana 1411 00 in 10ati	iory maintained rec	• •				
HYDROLOGY						
		Casand		f t		
Wetland Hydrology Indicators:			ary Indicators (minimum	i of two required)		
Primary Indicators (minimum of one is required; check a	ali that apply)	Sur	face Soil Cracks (B6)			
Surface Water (A1) True A	Aquatic Plants (B14)	Spa	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2) Hydro	gen Sulfide Odor (C1)	Dra	ainage Patterns (B10)			
Saturation (A3)	ed Rhizospheres on Livi	ng Mos	ss Trim Lines (B16)			
Water Marks (B1) Roots			-Season Water Table (C2	2)		
	nce of Reduced Iron (C4		yfish Burrows (C8)	,		
	nt Iron Reduction in Tilled	<i></i>	Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Soils (	(C6)	Stu	Stunted or Stressed Plants (D1)			
Iron Deposits (B5) Thin N	Muck Surface (C7)		Geomorphic Position (D2)			
<del></del>	(Explain in Remarks)		Shallow Aquitard (D3)			
Imagery (B7)	(Explain in Romano)		rotopographic Relief (D4)			
Water-Stained Leaves (B9)			C-Neutral Test (D5)			
Aguatic Fauna (B13)			2-Neutral Test (D3)			
Aqualic Fauria (B13)						
Field Observations:						
Surface water present? Yes No	X Depth (inches):		Wetland			
Water table present? Yes No	X Depth (inches):		hydrology			
Saturation present? Yes No	X Depth (inches):		present?	N		
(includes capillary fringe)						
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous	s inspections), if	available:			
Pomarke:						
Remarks:						

				Sampling Point: upi-mat-5/08/2018-0
	, Absolute	Dominant	Indicator	50/20 Thresholds
Tree Stratum Plot Size ( 30 ft.	) % Cover	Species	Status	20% 50% Tree Stratum 0 0
1	70 OOVC1	Орсоюз	Otatus	Sapling/Shrub Stratum 0 0
2				Herb Stratum 21 53
3				Woody Vine Stratum 0 0
5				Dominance Test Worksheet
6				Number of Dominant Species that are OBL,
8				FACW, or FAC: 0 (A)
9				Total Number of Dominant
10				Species Across all Strata: 2 (B)
	0	<ul><li>Total Cover</li></ul>		Percent of Dominant
				Species that are OBL,
Sapling/Shrub Plot Size ( 15 ft.	) Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC: <u>0.00%</u> (A/B)
1				Prevalence Index Worksheet
2				Total % Cover of:
3				OBL species 0 x 1 = 0
4 5				FACW species 0 x 2 = 0 FAC species 0 x 3 = 0
6				FACU species 105 x 4 = 420
7		<u> </u>		UPL species $0 \times 5 = 0$
8				Column totals 105 (A) 420 (B)
9				Prevalence Index = $B/A = 4.00$
10	0	= Total Cover		
	Abaaluta	Daminant	lu di satan	Hydrophytic Vegetation Indicators:
Herb Stratum Plot Size ( 5 ft.	) Absolute % Cover	Dominant Species	Indicator Status	Rapid test for hydrophytic vegetation Dominance test is >50%
1 Poa pratensis	30	Y	FACU	Prevalence index is ≤3.0*
2 Rosa multiflora	15	N	FACU	Morphological adaptations* (provide
3 Solidago canadensis	50	Y	FACU	supporting data in Remarks or on a
4 Dipsacus fullonum	10	N	FACU	separate sheet)
56				Problematic hydrophytic vegetation*
7				(explain) *Indicators of hydric soil and wetland hydrology must be
8				present, unless disturbed or problematic
9				· · ·
10 11				Definitions of Vegetation Strata:
12				<b>Tree</b> - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
13 14				Sapling/shrub - Woody plants less than 3 in. DBH and
15	105	= Total Cover		greater than 3.28 ft (1 m) tall.
		- TOTAL COVER		Herb - All herbaceous (non-woody) plants, regardless of
Woody Vine Plot Size ( 30 ft.	Absolute	Dominant	Indicator	size, and woody plants less than 3.28 ft tall.
Stratum	% Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in
1				height.
3				
4				Hydrophytic
5				vegetation
	0	= Total Cover		present? N
Remarks: (Include photo numbers here or on a	separate sheet)			<u> </u>
, ,	, ,			
S				

Sampling Point: upl-mdt-5/08/2018-03 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Red	Redox Features			Texture Remarks					
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks				
0-12	10YR 3/2	100					Silty clay loam					
							•					
*Type: C=C	oncentration, D=	Depletio	n, RM=Reduced	Matrix,	CS=Cov	ered or	Coated Sand Grains					
**Location:	PL=Pore Lining,	M=Matri	ix									
Hydric Soil	Indicators:						Indicators for F	Problematic Hydric Soils:				
-			Dark Su	ırface (S	67)			•				
Histisol (A1)				`	v Surfac	e (S8)	2 cm Muck	(A10) ( <b>MLRA 147)</b>				
Histic Epipedon (A2) (MLRA 147, 148)					Coast Prairie Redox (A16) (MLRA 147, 148)							
Black Histic (A3) Thin Dark Sui					-							
				(MLRA 147, 148) (MLRA 136, 147)								
	d Layers (À5)		`	Loamy Gleyed Matrix (F2)  Very Shallow Dark Surface (TF12)								
	uck (A10) <b>`(LŔR</b> l	N)		Depleted Matrix (F3)  Other (Explain in Remarks)								
Deplete	d Below Dark Su	urface (A			rface (F6	6)		ŕ				
	ark Surface (A12		·	Depleted Dark Surface (F7)								
	Mucky Mineral (S			Redox Depressions (F8)								
(LRR N	, MLRA 147, 14	8)	Iron-Ma	nganese	e Masses	Masses (F12) ( <b>LRR N, MLRA 136</b> )						
Sandy (	Gleyed Matrix (S	4)				(MLRA 136, 122)						
	Redox (S5)			Piedmont Floodplain Soils (F19) (MLRA 148)								
Stripped	d Matrix (S6)		Red Pa	Red Parent Material (F21) (MLRA 127, 147)								
*Indicators	of hydrophytic ve	getation	and wetland hyd	lrology r	nust be p	oresent,	unless disturbed or probl	ematic				
						ī						
	_ayer (if observe	d):										
Type:					-		Hydric soil presei	nt? <u>N</u>				
Depth (inch	es):				-							
Remarks:												
l												

D. 1. 1/0%	015-10	<b>5</b>	•	Wetland NH-67
Project/Site: Holloway-Knox 138 kV Transmission Lin		Belmont	Sampling Date:	
Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs		Ohio Township, Range:		w-mdt-5/08/2018-04
Landform (hillslope, terrace, etc.): terrace		cave, convex, none)		Slope (%): 3
Subregion (LRR or MLRA): LRR N Lat		Long.: -80		Slope (76). 3
Soil Map Unit Name: LpF - Lowell-Westmoreland silt loam		percent slo NWI CI	assification: Nor	
Are climatic/hydrologic conditions of the site typical for thi	s time of the year?	Yes X No		xplain in remarks)
Are vegetation, soil, or hydrology	significantly		normal circums	stances" Yes
Are vegetation , soil , or hydrology	naturally prol		sent?	
SUMMARY OF FINDINGS		(11.1)	needed, expiain a	any answers in remarks
	Г			
Hydrophytic vegetation present? Yes	le the same	lad area within a w	rotland2 V	00
Hydric soil present? Yes	is the samp	led area within a w	/etiano?	<u>es</u>
Wetland hydrology present? Yes				
Remarks:				
DEM wettered in velley ourrounding stroom in re	· · · · · · · · · · · · · · · · · · ·	L DOW		
PEM wetland in valley surrounding stream in ro	utinely maintained	ROW.		
LIVER OL OOV				
HYDROLOGY				
Wetland Hydrology Indicators:				num of two required)
Primary Indicators (minimum of one is required; check all			Soil Cracks (B6)	
	uatic Plants (B14)		y Vegetated Cond	ave Surface (B8)
High Water Table (A2)Hydroge	en Sulfide Odor (C1)	X Drainag	e Patterns (B10)	
X Saturation (A3) Oxidized	d Rhizospheres on Livir	ng Moss Ti	rim Lines (B16)	
Water Marks (B1)Roots (0			ason Water Table	(C2)
	ce of Reduced Iron (C4)		n Burrows (C8)	
	Iron Reduction in Tilled		on Visible on Aeri	
Algal Mat or Crust (B4) Soils (C	•		or Stressed Plant	
Iron Deposits (B5) Thin Mu	ick Surface (C7)	Geomoi	rphic Position (D2	)
Inundation Visible on AerialOther (E	Explain in Remarks)	Shallow	Aquitard (D3)	
Imagery (B7)		X Microto	pographic Relief (l	D4)
Water-Stained Leaves (B9)		X FAC-Ne	eutral Test (D5)	
Aquatic Fauna (B13)		<u>—</u>		
Field Observations:				
Surface water present? Yes X No	Depth (inches):	1	Wetland	
	X Depth (inches):	_	hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	Y
(includes capillary fringe)	<del></del>			
Describe recorded data (stream gauge, monitoring well, a	erial photos previous	s inspections) if ava	ailahle.	
Describe recorded data (stream gadge, monitoring won, a	lellai pilotos, pievious	s mspeciions, ii ava	มแสมเธ.	
Remarks:				
Saturated throughout, pockets of inundation. R	eceives flooding fro	om stream		

				Sampling Point: w-mat-5/08/2018-04
Tree Stratum Plot Size ( 30 ft. )  1 2 3 4	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         5         13           Herb Stratum         30         75           Woody Vine Stratum         0         0
5 6 7 8 9				Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata:  3 (B)
Sapling/Shrub Plot Size( 15 ft. ) Stratum	O : Absolute % Cover	= Total Cover  Dominant Species	Indicator Status	Percent of Dominant Species that are OBL, FACW, or FAC:
1	25	Y	OBL	Prevalence Index Worksheet           Total % Cover of:         0BL species         85         x 1 = 85           PACW species         90         x 2 = 180           PAC species         0         x 3 = 0           PACU species         0         x 4 = 0           UPL species         0         x 5 = 0           Column totals         175         (A)         265           Prevalence Index = B/A = 1.51         1.51
Herb Stratum Plot Size ( 5 ft. )  1	25  Absolute % Cover 5 5 45 70 10 5	Total Cover  Dominant Species N N Y Y N N N N N N N N N N N N N N N	Indicator Status OBL FACW OBL FACW OBL FACW FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  X Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation*  (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14				Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Plot Size ( 30 ft. )  1 2	Absolute % Cover	Total Cover  Dominant Species	Indicator Status	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.
3 4 5	0	= Total Cover	<u> </u>	Hydrophytic vegetation present? Y
Remarks: (Include photo numbers here or on a separ	rate sheet)			

Depth Matrix Redox Features					ures		Toyturo	Domorko
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12	N 4/	100	,				Sandy clay	
							•	
*Type: C=C	oncentration, D=	Depletio	n, RM=Reduced	Matrix,	CS=Cov	vered or	Coated Sand Grains	L
	PL=Pore Lining,	•		·				
Hvdric Soil	Indicators:						Indicators for I	Problematic Hydric Soils:
•			Dark Sເ					·
Histisol	(A1)		Polyvalı	ue Belov	v Surfac	e (S8)		(A10) ( <b>MLRA 147)</b>
Histic E	pipedon (A2)		(MLRA	147, 14	8)		Coast Prair	ie Redox (A16) (MLRA 147, 148)
Black H	listic (A3)		Thin Da	rk Surfa	ce (S9)		Piedmont F	loodplain Soils (F19)
	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 136	, 147)
	d Layers (À5)		X Loamy			2)		w Dark Surface (TF12)
	uck (A10) (LRR	N)	Deplete	-	•	,		ain in Remarks) `
	ed Below Dark Su				rface (F6	3)		,
	ark Surface (A12	•	· —		Surface (	,		
	Mucky Mineral (S	•			ions (F8	` '		
-	, MLRA 147, 148	•					LRR N, MLRA 136)	
	Gleyed Matrix (S					MLRA 13		
	Redox (S5)	+)					(MLRA 148)	
	` ,							
Stripped	d Matrix (S6)		Red Pa	rent iviai	teriai (F2	(IVILK	A 127, 147)	
*Indicators of	of hydrophytic ve	getation	and wetland hy	drology	must be	present.	unless disturbed or prob	blematic
	,,	9	<b>,</b>			<b>,</b>		
							Ukadala aallaasaa	-10 V
Restrictive L	Layer (if observe	d):					Hydric soil presei	
Restrictive L	, ,	d):			-		riyano son presei	IL?
Restrictive L	, ,	d):			<b>-</b> -		riyano son presen	IL! <u>T</u>
Restrictive L Type: Depth (inche	, ,	d):			-		Tryding doll prodei	ILFT
Restrictive L	, ,	d):			-		Tryuno dell'predel	itr <u>1</u>
Restrictive L Type: Depth (inche	, ,	d):			<del>-</del> -		Tryuno den preder	ILF
Restrictive L Type: Depth (inche	, ,	d):			<del>-</del> -		Tryuno den preder	πε <u>τ</u>
Restrictive L Type: Depth (inche	, ,	d):			-		Tryuno den preder	ur <u>1</u>

Project/Site: Holloway-Knox 138 kV Transmission L Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): hillside Subregion (LRR or MLRA): LRR N La Soil Map Unit Name: LpF - Lowell-Westmoreland silt loa Are climatic/hydrologic conditions of the site typical for t Are vegetation , soil , or hydrology Are vegetation , soil , or hydrology SUMMARY OF FINDINGS	State: Ohio Section, Towns Local relief (concave, of at.: 39.97285 ams, benched, 30 to 70 perce this time of the year? Yes significantly disturb	Sampling Point: upl-mdt-5/08/2018-04
Hydrophytic vegetation present? Hydroc soil present? Wetland hydrology present? No No	Is the sampled ar	ea within a wetland? No
Remarks:  Upland point for PEM wetland NH-67 in routin	ely maintained ROW	
HYDROLOGY		
High Water Table (A2)	Aquatic Plants (B14) Igen Sulfide Odor (C1) Iged Rhizospheres on Living (C3) Ince of Reduced Iron (C4) Int Iron Reduction in Tilled	Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Sparsely Vegetated Concave Surface (B8)  Drainage Patterns (B10)  Moss Trim Lines (B16)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)
Surface water present? Yes No Water table present? Yes No Saturation present? Yes No (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well,	X Depth (inches): X Depth (inches): X Depth (inches):  , aerial photos, previous inspec	Wetland hydrology present? N ections), if available:
Remarks:		

			Sampling Point: upl-mdt-5/08/2018
Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         30         75           Woody Vine Stratum         0         0
0 = Absolute % Cover	= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet  Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  0 (A) (B)
			Prevalence Index Worksheet           Total % Cover of:         0         x 1 = 0         0         0         x 2 = 0         0         0         x 2 = 0         0         0         x 3 = 0         0         0         x 3 = 0         0         0         x 4 = 600         0
Absolute % Cover 20 15 40 50 25	Dominant Species N N Y N N N N N N N N N N N N N N N N	Indicator Status FACU FACU FACU FACU FACU	Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetationDominance test is >50%Prevalence index is ≤3.0*Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)Problematic 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. (7.6 cm) 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 (1 m) tall.
Absolute % Cover	Total Cover  Dominant Species	Indicator Status	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.
0 =	= Total Cover		Hydrophytic vegetation present? N
	0 = Absolute % Cover 20	% Cover Species  0 = Total Cover  Absolute % Cover Species  0 = Total Cover  Absolute % Cover Species  N 15 N Y 50 Y Y 25 N  150 = Total Cover  Absolute % Cover Species  Absolute % Cover Species  N N Species  N N Species  N N Species  N N Species  Dominant Species  N N Species  N N Species  Dominant Species  Species  Dominant Species	% Cover Species Status    O

Depth	Matrix		1	lox Feat			or confirm the absence o	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-10	10YR 4/3	90	10YR 5/6	10	С	М	Silty clay loam	
*Type: C=C	Concentration D=	Depletion	n RM=Reduced	Matrix	CS=Cov	ered or	Coated Sand Grains	
	PL=Pore Lining,			matrix,	00 00.	70,00	ocatou cana cramo	
	I Indicators:						Indicators for P	Problematic Hydric Soils:
Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	Epipedon (A2) Histic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) (LRR I ed Below Dark Sulface (A12) Mucky Mineral (SI I, MLRA 147, 148 Redox (S5) d Matrix (S6)	urface ( <i>F</i> 2) 11) 3 <b>)</b> 4)	(MLRA Thin Da (MLRA Loamy Deplete Redox I Pledox I Iron-Ma Umbric Piedmo Red Pa	ue Belov 147, 14 rk Surfa 147, 14 Gleyed d Matrix Dark Su d Dark Su Depress nganes Surface nt Flood rent Ma	w Surface 8) ace (S9) 8) Matrix (F ( (F3) rface (F6 Surface ( ions (F8) e Masse e (F13) (N dplain So terial (F2	2) (F7) ) s (F12) ( <b>MLRA 13</b> ils (F19) (1) <b>(MLR</b>	Coast Prairie Piedmont FI (MLRA 136, Very Shallow Other (Expla	v Dark Surface (TF12) ain in Remarks)
Restrictive   Type: Depth (inch	Layer (if observed	d):			- -		Hydric soil presen	nt? <u>N</u>
Remarks:								

D. I. 1909	0111/0	S. J 4		Wetland NH-68
Project/Site: Holloway-Knox 138 kV Transmission Line		<u>Belmont</u>	_Sampling Date:	
Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs		Dhio Township, Range:		w-mdt-5/08/2018-05
Landform (hillslope, terrace, etc.): hillside	Local relief (conca			Slope (%): 2
Subregion (LRR or MLRA): LRR N Lat.	-	ave, convex, none Long.: -80		Slope (%): 2
Soil Map Unit Name: LeC - Lowell silt loam, moderately w			Classification: Nor	
Are climatic/hydrologic conditions of the site typical for this	s time of the year?	Yes X No		explain in remarks)
Are vegetation, soilX_, or hydrology	significantly di		e "normal circums	stances" Yes
Are vegetation , soil , or hydrology	naturally prob		esent?	
		(If	needed, explain a	any answers in remarks
SUMMARY OF FINDINGS	Г			
Hydrophytic vegetation present? Yes	le the sample	ad area within a	watland? V	00
Hydric soil present? Yes	15 tile salliple	ed area within a v	wetianu:	<u>es</u>
Wetland hydrology present? Yes				
Remarks:				
DEM wattend on hillside in routingly maintained	DOM			
PEM wetland on hillside in routinely maintained	ROW.			
HYDROLOGY				
		Cocondon	· ! diastoro (minin	of two required)
Wetland Hydrology Indicators:	that apply			num of two required)
Primary Indicators (minimum of one is required; check all			e Soil Cracks (B6)	C ( (D0)
	uatic Plants (B14)		ely Vegetated Conc	cave Surface (B8)
<del></del>	en Sulfide Odor (C1)		ge Patterns (B10)	
	d Rhizospheres on Living	<del></del>	Γrim Lines (B16)	
Water Marks (B1)Roots (C	-		eason Water Table	(C2)
	ce of Reduced Iron (C4)		sh Burrows (C8)	,
	Iron Reduction in Tilled		tion Visible on Aeri	
Algal Mat or Crust (B4) Soils (Co	·		d or Stressed Plan	
<del></del>	ick Surface (C7)		orphic Position (D2	
Inundation Visible on AerialOther (E	Explain in Remarks)		w Aquitard (D3)	
Imagery (B7)			opographic Relief (	D4)
Water-Stained Leaves (B9)		X FAC-N	leutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes X No	Depth (inches):	1	Wetland	
Water table present? Yes X No	Depth (inches):	10	hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	Υ
(includes capillary fringe)	· · · _		•	
Describe recorded data (atroom gourse monitoring well a	erial photos, provious	inapportions) if av	railabla:	
Describe recorded data (stream gauge, monitoring well, a	eriai priotos, previous	inspections), ii av	'allable:	
Remarks:				
Saturated throughout, pockets of inundation. Re	eceives hydrology f	rom hillside see	ер	
-	-			

				Sampling Point: w-mdt-5/08/2018 50/20 Thresholds
Tree Stratum Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         21         53           Woody Vine Stratum         0         0
Sapling/Shrub Plot Size( 15 ft. )	0 = Absolute % Cover	= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  100.00% (A/B
				Prevalence Index Worksheet           Total % Cover of:         OBL species         70         x 1 =         70           FACW species         25         x 2 =         50           FAC species         0         x 3 =         0           FACU species         10         x 4 =         40           UPL species         0         x 5 =         0           Column totals         105         (A)         160         (B)           Prevalence Index = B/A =         1.52         (B)
Herb Stratum Plot Size ( 5 ft. )  Typha angustifolia Acorus americanus Impatiens capensis Verbena hastata Dipsacus fullonum	0 = Absolute % Cover 40 30 20 5 10	Total Cover  Dominant Species Y Y N N N	Indicator Status OBL OBL FACW FACW	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  Dominance test is >50%  X Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic 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. (7.6 cm) or more in diameter a breast height (DBH), regardless of height.  Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Woody Vine Plot Size ( 30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	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.
5	0 =	= Total Cover		Hydrophytic vegetation present? Y

Profile Desc	cription: (Describ	e to the	e depth needed to	docum	ent the in	ndicator	or confirm the absence	of indicators.)
Depth	Matrix		1	ox Feat			Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-6	10YR 4/1	95	10YR ¾	5	С	М	Silty clay	
6-14	10YR 5/1	90	10YR 4/6	10	С	М	clay	
							,	
<b>3</b> .	•	•	•	Matrix,	CS=Cov	ered or	Coated Sand Grains	
	PL=Pore Lining,	M=Matr	IX					
Histisol Histic E Black H Hydroge Stratifie 2 cm M Deplete Thick D Sandy N (LRR N Sandy F Stripped	pipedon (A2) listic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR d Below Dark St ark Surface (A12 Mucky Mineral (S , MLRA 147, 144 Gleyed Matrix (S Redox (S5) d Matrix (S6)	urface ( <i>F</i> 2) 31) <b>3)</b> 4)	(MLRA Thin Da (MLRA Loamy ( X Deplete Redox D Deplete Redox D Iron-Ma Umbric Piedmoi	ue Belov 147, 14 rk Surfa 147, 14 Gleyed I d Matrix Dark Surd Dark Surface Surface nt Flood rent Mat	v Surface 8) Ice (S9) 8) Matrix (F 1 (F3) Iface (F6 Surface ( ions (F8) e Masses 1 (F13) (N Iplain So terial (F2	(F7) (F7) ) s (F12) ( MLRA 13 ils (F19) 1) (MLR	2 cm Muck Coast Prain Piedmont F (MLRA 136) Very Shallo Other (Exp	ow Dark Surface (TF12) lain in Remarks)
Restrictive I Type: Depth (inch	_ayer (if observe	d):			- -		Hydric soil prese	nt? <u>Y</u>
Remarks:								

Project/Site: Holloway-Knox 138 kV Transmission Line Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jacobs Landform (hillslope, terrace, etc.): hillside Subregion (LRR or MLRA): LRR N Lat.: Soil Map Unit Name: LeC - Lowell silt loam, moderately we Are climatic/hydrologic conditions of the site typical for this Are vegetation , soil , or hydrology Are vegetation , soil , or hydrology SUMMARY OF FINDINGS	State: Ohio Section, Towns Local relief (concave, of 39.96854 et, 8 to 15 percent slopes	Sampling Point: ship, Range: S9 T5N R3W convex, none): convex Long.: -80.81408	5/8/2018 upl-mdt-5/08/2018-05  Slope (%): 1 Datum: NAD 83 e  xplain in remarks)
Hydrophytic vegetation present?  Hydric soil present?  Wetland hydrology present?  No  No	Is the sampled are	ea within a wetland? N	0
Upland point for PEM wetland NH-68 in routinel  HYDROLOGY  Wetland Hydrology Indicators:	y maintained ROW	Secondary Indicators (minim	um of two required)
High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	uatic Plants (B14) n Sulfide Odor (C1) l Rhizospheres on Living 3) e of Reduced Iron (C4) ron Reduction in Tilled	Surface Soil Cracks (B6) Sparsely Vegetated Conce Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (Crayfish Burrows (C8) Saturation Visible on Aeric Stunted or Stressed Plant Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D5)	(C2) al Imagery (C9) s (D1)
Field Observations: Surface water present? Yes No X Water table present? Yes No X Saturation present? Yes No X (includes capillary fringe)  Describe recorded data (stream gauge, monitoring well, and	Depth (inches): Depth (inches):	Wetland hydrology present? ections), if available:	N_
Remarks:			

				Sampling Point: upl-mdt-5/08/2018
Tree Stratum Plot Size ( 30 ft. )  1	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         1         3           Herb Stratum         19         48           Woody Vine Stratum         0         0
5	O :	= Total Cover  Dominant Species	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across all Strata:  Percent of Dominant Species that are OBL, FACW, or FAC:  0 (A) (B)
1	5	Y	FACU	Prevalence Index Worksheet           Total % Cover of:         0         x 1 =         0           OBL species         0         x 2 =         0           FACW species         0         x 3 =         0           FAC species         100         x 4 =         400           UPL species         0         x 5 =         0           Column totals         100         (A)         400         (B)           Prevalence Index = B/A =         4.00         (B)
Herb Stratum Plot Size ( 5 ft. )  1   Poa pratensis 2   Dipsacus fullonum 3   Schizachyrium scoparium 4	5 Absolute % Cover 20 25 50	Total Cover  Dominant Species Y Y Y	Indicator Status FACU FACU FACU	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14 15				Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.
Woody Vine Stratum Plot Size ( 30 ft. )	95 : Absolute % Cover	Total Cover  Dominant  Species	Indicator Status	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.
3 4 5	0	= Total Cover		Hydrophytic vegetation present? N

Sampling Point: upl-mdt-5/08/2018-05

Depth	Matrix		Red	lox Feat	tures		or confirm the absence o Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks
0-10	10YR 4/6	85	10R 4/8	15	С	М	Silt loam	
*Tvno: C=C	oncontration D-	Doplotic	n DM=Daduaad	Motrix	CS=Ca	orod or	Coated Sand Grains	
	PL=Pore Lining,			iviatrix,	CS-C0	rered or v	Coaled Sand Grains	
	Indicators:	ivi-iviati	IA .				Indicators for D	roblematic Hydric Soils:
Histisol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Sandy Mucky Mineral (S1)  (LRR N, MLRA 147, 148)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  *Indicators of hydrophytic vegetation and wetland hydrology must b						2) (F7) ) s (F12) ( MLRA 13 ils (F19) (1) (MLR	Coast Prairie Piedmont Fle (MLRA 136, Very Shallow Other (Explain LRR N, MLRA 136) 16, 122) (MLRA 148) A 127, 147)	v Dark Surface (TF12) nin in Remarks)
Restrictive L Type: Depth (inch	_ayer (if observed	d):			- -		Hydric soil presen	t? <u>N</u>

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

			Report Name: Wetland NH-69
Project/Site: Holloway-Knox 138 kV Transmission Lin		Belmont	Sampling Date: 5/8/2018
Applicant/Owner: FirstEnergy		Ohio	Sampling Point: w-mdt-5/08/2018-06
Investigator(s): M. Thomayer, B.Robertson; Jacobs		, Township, Range:	
Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N Lat.		cave, convex, none	· · · · ·
Subregion (LRR or MLRA): LRR N Lat. Soil Map Unit Name: LpF - Lowell-Westmoreland silt loam		Long.: <u>-80</u> percent slo <mark> NWI C</mark>	
Are climatic/hydrologic conditions of the site typical for thi		Yes X No	
Are vegetation, soil, or hydrology	significantly		re "normal circumstances" Yes
Are vegetation , soil , or hydrology	naturally pro	oblematic? pre	esent?
		(If	needed, explain any answers in remark
SUMMARY OF FINDINGS	<del></del>		
Hydrophytic vegetation present?  Yes  Yes	la tha aama	· · · · · · · · · · · · · · · · · · ·	
Hydric soil present? Yes	is the samp	oled area within a v	wetland? Yes
Wetland hydrology present? Yes			
Remarks:			
DEM wetland in valley adjacent to streem in re-	tinaly maintained	DOM	
PEM wetland in valley adjacent to stream in rou	itinely maintained	ROW.	
HADDOLOGA			
HYDROLOGY Wetland Hydrology Indicators		Casandan	The Production of the production of
Wetland Hydrology Indicators:	414 annly)		/ Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	,		e Soil Cracks (B6)
	uatic Plants (B14)		ely Vegetated Concave Surface (B8)
	en Sulfide Odor (C1)		ge Patterns (B10)
	d Rhizospheres on Livi	···9	Trim Lines (B16)
Water Marks (B1)Roots (C			eason Water Table (C2)
	ce of Reduced Iron (C4		sh Burrows (C8)
	Iron Reduction in Tilled		tion Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C	•		d or Stressed Plants (D1)
	ick Surface (C7)		orphic Position (D2)
Inundation Visible on AerialOther (E	Explain in Remarks)		w Aquitard (D3)
Imagery (B7)			opographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	leutral Test (D5)
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes X No	Depth (inches):	1	Wetland
	X Depth (inches):		hydrology
Saturation present? Yes X No	Depth (inches):	0	present? Y
(includes capillary fringe)			<u> </u>
Describe recorded data (stream gauge, monitoring well, a	varial photos previous	c inepections) if av	voilable:
Describe recorded data (stream gauge, monitoring weil, a	eriai priotos, previous	S inspections j, ii av	allable.
Remarks:			
Saturated throughout, pockets of inundation. Re	eceives flooding fr	rom stream	

:GETATION - Use scient	inc names of	piarito			Sampling Point:	w-mdt-5/08/201
Tree Stratum Plot Si	ze ( 30 ft.	Absolute	Dominant	Indicator	50/20 Thresholds	20% 50%
	`	/ % Cover	Species	Status	Tree Stratum Sapling/Shrub Stratum	0 0 0 0
			- ——		Herb Stratum	23 58
					Woody Vine Stratum	0 0
					Dominance Test Workshe	et
					Number of Dominant Species that are OBL,	
					FACW, or FAC:	2 (A)
					Total Number of Dominant	
		0	= Total Cover		Species Across all Strata: Percent of Dominant	(B)
			-		Species that are OBL,	
Sapling/Shrub Stratum Plot Si	ze ( 15 ft.	) Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:	(A/E
			<u> </u>		Prevalence Index Worksh	eet
					Total % Cover of: OBL species 70 x 1	= 70
					FACW species 45 x 2	= 90
					FAC species 0 x 3	
			- ——		FACU species 0 x 4 UPL species 0 x 5	
					Column totals 115 (A)	
					Prevalence Index = $B/A = 1$	1.39
		0	= Total Cover			
			_ Total Cover		Hydrophytic Vegetation In	dicators:
Herb Stratum Plot Si	ze ( 5 ft.	Absolute	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
	(	/ % Cover	Species	Status	X Dominance test is >50%	
Carex vulpinoidea Juncus effusus		<u>5</u> 5	N	OBL FACW	X Prevalence index is ≤3. Morphological adaptation	
Typha angustifolia		45	Y	OBL	supporting data in Rem	
Lysimachia nummularia Scirpus cyperinus		40	Y	FACW	separate sheet)	
		20	N	OBL	Problematic hydrophytic	c vegetation*
					(explain)  *Indicators of hydric soil and wetla	nd hydrology must b
					present, unless disturbed or proble	
					Definitions of Vegetation	Strata:
					Tree - Woody plants 3 in. (7.6 cm) breast height (DBH), regardless of	
					Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	s than 3 in. DBH and
		115	= Total Cover		Herb - All herbaceous (non-woody	
Woody Vine Plot Si	ze ( 30 ft.	Absolute	Dominant	Indicator	size, and woody plants less than 3	.28 ft tall.
Stratum		/ % Cover	Species	Status	<b>Woody vines</b> - All woody vines graheight.	eater than 3.28 ft in
					Hydrophytic	
		0	= Total Cover		vegetation present? Y	_
marks: (Include photo numb	ers here or on a	separate sheet)				
		. ,				

Sampling Point: w-mdt-5/08/2018-06

Depth	Matrix		Red	ures		Т	exture	Remarks	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	11	exture	Kelliaiks
0-12	N 4/	100					Sandy o	clay	
							•	•	
									+
									+
• •	Concentration, D=	•		l Matrix,	CS=Cov	vered or	Coated Sa	and Grains	
**Location:	PL=Pore Lining,	M=Matr	ix						
Hydric Soil	I Indicators:						Ir	dicators for	Problematic Hydric Soils:
				ırface (S	,				
Histisol			,		v Surfac	e (S8)	_		(A10) ( <b>MLRA 147)</b>
	Epipedon (A2)			147, 14					rie Redox (A16) (MLRA 147, 148
	Histic (A3)			ırk Surfa	. ,				Floodplain Soils (F19)
	en Sulfide (A4)			147, 14		-0)	_	(MLRA 136	
	ed Layers (A5)		X Loamy	,	,	·2)	_		ow Dark Surface (TF12)
	luck (A10) <b>(LRR</b>	•		d Matrix	` '	2.	_	Other (Exp	lain in Remarks)
	ed Below Dark Su	•	· —		rface (F6	,			
	ark Surface (A12	,			Surface	` '			
-	Mucky Mineral (S	•			ions (F8				
	I, MLRA 147, 148	,					LRR N, M	LRA 136)	
	Gleyed Matrix (S	4)				MLRA 13			
	Redox (S5)				•	. ,	(MLRA 14	,	
Strippe	d Matrix (S6)		Red Pa	rent Mat	erial (F2	21) <b>(MLR</b>	A 127, 14	7)	
LI 1									
Indicators	of hydrophytic ve	getation	and wetland hy	drology i	must be	present,	unless dis	sturbed or pro	blematic
						1			
Restrictive	Layer (if observe	q).							
Туре:	Layor (ii obcorvo	۵).					Hvdi	ric soil prese	nt? Y
Depth (inch	ies):				-		,	no con proce	<del></del>
					•				
Remarks:						II.			

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

Project/Site: Holloway-Knox 138 kV Transmi Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, B.Robertson; Jac Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): LRR N Soil Map Unit Name: LpF - Lowell-Westmoreland Are climatic/hydrologic conditions of the site typic Are vegetation , soil , or hyd Are vegetation , soil , or hyd SUMMARY OF FINDINGS	State: Sobs Section Local relief (con Lat.: 39.96563 I silt loams, benched, 30 to 70 cal for this time of the year? Irology significantly	Yes X No Are oblematic?	c):		
Hydrophytic vegetation present? Hydrosoil present? Wetland hydrology present? No	Is the samp	pled area within a v	wetland? No		
Remarks:  Upland point for PEM wetland NH-69 in  HYDROLOGY	n routinely maintained RC	DW			
		0	I. di / i - i		
Wetland Hydrology Indicators:	-1111-4141-3	-	Indicators (minimum of two required)		
Primary Indicators (minimum of one is required;			e Soil Cracks (B6)		
Surface Water (A1)	True Aquatic Plants (B14)	Sparsel	y Vegetated Concave Surface (B8)		
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainag	ge Patterns (B10)		
Saturation (A3)	Oxidized Rhizospheres on Liv	ing Moss T	Trim Lines (B16)		
Water Marks (B1)	Roots (C3)		ason Water Table (C2)		
Sediment Deposits (B2)	Presence of Reduced Iron (C4	4) Crayfish	n Burrows (C8)		
Drift Deposits (B3)	Recent Iron Reduction in Tilled	d Saturati	ion Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Soils (C6)	Stunted	or Stressed Plants (D1)		
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomo	rphic Position (D2)		
Inundation Visible on Aerial	Other (Explain in Remarks)		Aquitard (D3)		
Imagery (B7)			pographic Relief (D4)		
Water-Stained Leaves (B9)			eutral Test (D5)		
Aquatic Fauna (B13)			surui rest (Bo)		
/ Additio Facilia (DTO)					
Field Observations:					
Surface water present? Yes N	No X Depth (inches):		Wetland		
	No X Depth (inches):		hydrology		
	No X Depth (inches):		present? N_		
(includes capillary fringe)					
Describe recorded data (stream gauge, monitori	ng well, aerial photos, previo	us inspections), if av	/ailable:		
Pamarke:					
Remarks:					

					5ampling Foint: upi-mat-5/08/2018-06
Tree Stratum Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds           20%         50%           Tree Stratum         0         0           Sapling/Shrub Stratum         0         0           Herb Stratum         21         53           Woody Vine Stratum         0         0
Sapling/Shrub Plot Size (	15 ft. )	Absolute	= Total Cover	Indicator	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant Species that are OBL, FACW, or FAC:  0 (A) (B)
Stratum  1 2 3 4 5 6 7 8 9 10	,	% Cover	Species	Status	Prevalence Index Worksheet           Total % Cover of:         0 x 1 = 0           OBL species 0 x 2 = 0         0 x 2 = 0           FACW species 0 x 3 = 0         0 x 4 = 420           FACU species 105 x 4 = 420         0 x 5 = 0           UPL species 0 x 5 = 0         0 x 5 = 0           Column totals 105 (A)         420 (B)           Prevalence Index = B/A = 4.00         4.00
Herb Stratum Plot Size (  1	5 ft. )	0 = Absolute % Cover 30 15 50	Total Cover  Dominant Species Y N Y N	Indicator Status FACU FACU FACU FACU	Hydrophytic Vegetation Indicators:  Rapid test for hydrophytic vegetation  Dominance test is >50%  Prevalence index is ≤3.0*  Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)  Problematic hydrophytic vegetation* (explain)  *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14 15			= Total Cover		Definitions of Vegetation Strata:  Tree - Woody plants 3 in. (7.6 cm) 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 (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size,
Woody Vine Stratum Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	and woody plants less than 3.28 ft tall.  Woody vines - All woody vines greater than 3.28 ft in height.
5			= Total Cover		Hydrophytic vegetation present? N
Remarks: (Include photo numbers he	ere or on a separa	ite sneet)			

Sampling Point: upl-mdt-5/08/2018-06

Depth	Matrix		Red	dox Fea	tures		Textur	re	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	TOXIG	C	rtomants
0-10	10YR 3/2	100					silty clay loam	ım	
Type: C=C	oncentration, D=	Depleti	on. RM=Reduce	d Matrix	c. CS=Cc	vered or	Coated Sand	Grains	
• .	PL=Pore Lining,				,				
vdric Soil	Indicators:						Indica	ators for Probl	ematic Hydric Soils:
Histisol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  2 cm Muck (A10) (LRR N)  Dark Surface (S  Polyvalue Belov  (MLRA 147, 14  (MLRA 147, 14  Loamy Gleyed  Depleted Matrix				<b>!8</b> ) ace (S9) <b>!8)</b> Matrix (F	Coast Prairie Redox (A16) (MLF  Piedmont Floodplain Soils (F19)  (MLRA 136, 147)				
Thick D	ed Below Dark Su ark Surface (A12 Mucky Mineral (S I, <b>MLRA 147, 14</b>	2) 51)	Deplete Redox	ed Dark Depres:	ırface (F6 Surface sions (F8 se Masse	(F7) )	 LRR N, MLRA	A 136)	
Sandy (	Gleyed Matrix (S	4)	Umbrio	Surface	e (F13) <b>(I</b>	MLRA 13	6, 122)		
	Redox (S5) d Matrix (S6)	•					(MLRA 148) A 127, 147)		
Indicators	of hydrophytic ve	getation	ı and wetland hy	drology	must be	present,	unless disturb	oed or problema	atic
Restrictive I ype: Depth (inch	Layer (if observe	d):			- -		Hydric s	oil present? _	N_
Remarks:									

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Holloway-Knox	138 kV Trans	mission Line	e City/County:	Harrison	Sampling Date	: 6/26/2018		
Applicant/Owner: FirstEnergy	,		State:	Ohio		t: w-bcr-6/26/2018-01		
Investigator(s): B. Robertson, 7		obs	Section	n, Township, Ra	nge: T9N R5W S10			
Landform (hillslope, terrace, etc.	): depress	ional	Local relief (co	ncave, convex,		Slope (%): 10		
Subregion (LRR or MLRA): LR		Lat.			-81.017	Datum: NAD 83		
Soil Map Unit Name: MrF - Morri	stown channe	ery silt loam,	25 to 70 percent slo	opes, N	WI Classification: No	one (PEM)		
Are climatic/hydrologic conditions	s of the site ty	pical for this		Yes X		explain in remarks)		
Are vegetation, soil		hydrology		y disturbed?	Are "normal circum	stances" Yes		
Are vegetation, soil	, or	hydrology	naturally pr	oblematic?	present?			
					(If needed, explain	any answers in remarks)		
SUMMARY OF FINDINGS								
Hydrophytic vegetation present?			In the com-		· · · · · · · · · · · · · · · · · · ·			
Hydric soil present?	Yes		is the sam	pled area withi	in a wetland?	<u>/es</u>		
Wetland hydrology present?	Yes							
Remarks:								
PEM wetland in depression	nnal area al	ona acces	s road adiacent t	n maintained	ROW			
I Livi welland in depression	niai aica ai	ong acces	3 Toad adjacent t	.o mamamed	INOVV.			
HYDROLOGY								
Wetland Hydrology Indicator					ndary Indicators (minir			
Primary Indicators (minimum of o	one is required	d; check all t	hat apply)	Sı	urface Soil Cracks (B6)	)		
X Surface Water (A1)		True Aqı	uatic Plants (B14)	S	parsely Vegetated Con	cave Surface (B8)		
X High Water Table (A2)		Hydroge	n Sulfide Odor (C1)	Di	rainage Patterns (B10)	nage Patterns (B10)		
X Saturation (A3)	-	Oxidized	l Rhizospheres on Liv	vina M	oss Trim Lines (B16)			
Water Marks (B1)		Roots (C	•		y-Season Water Table (C2)			
Sediment Deposits (B2)	-		e of Reduced Iron (C		ayfish Burrows (C8)			
Drift Deposits (B3)	-		ron Reduction in Tille		Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Soils (C			unted or Stressed Plar	<b>o</b> , , ,		
Iron Deposits (B5)	-		ck Surface (C7)		omorphic Position (D2)			
· · · · /	-		explain in Remarks)		nallow Aquitard (D3)	=/		
Inundation Visible on Aerial	-		Apiaiii iii Neiliaiks)			(D.4)		
Imagery (B7)					icrotopographic Relief	(D4)		
Water-Stained Leaves (B9)					AC-Neutral Test (D5)			
Aquatic Fauna (B13)								
Field Observations:								
	'es X	No	Depth (inches):		Wetland			
•	'es <u>X</u>	No	Depth (inches):	:0	hydrology			
	'es X	No	Depth (inches):	. 0	present?	<u>Y</u>		
(includes capillary fringe)								
Describe recorded data (stream	gauge monito	oring well, a	erial photos, previou	ıs inspections).	 if available:			
Docombo rocordou data (otrodin	gaago, mome	ornig won, at	snar priotos, provios	io inopositorio),	ii avallabio.			
Domarka								
Remarks:								
Catamata di Managaria								
Saturated throughout								

- GETATION - O	se scientific fi	allies of Piai	11.5				w-bcr-6/26/2018-0
			Abaduta 0/	Deminant	Indicator	50/20 Thresholds	500/
Tree Stratum	Plot Size (	30 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum	20% 50% 0 0
			00101	Орослов	Oldido	Sapling/Shrub Stratum	6 15
			<u> </u>			Herb Stratum	15 38
						Woody Vine Stratum	0 0
						Dominance Test Workshe	et
						Number of Dominant	
			_			Species that are OBL, FACW, or FAC:	5 (A)
						Total Number of Dominant	(/ ,/
						Species Across all Strata:	5 (B)
			0 =	Total Cover		Percent of Dominant Species that are OBL,	
apling/Shrub	DI. + 0' /	45.6	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	Plot Size (	15 ft. )	Cover	Species	Status	,	
Salix interior			30	Υ	FACW	Prevalence Index Worksho	eet
						Total % Cover of:	
						OBL species 30 x 1 FACW species 75 x 2	
						FAC species 75 x 2	
						FACU species 0 x 4	
						UPL species 0 x 5	
						Column totals 105 (A)	
						Prevalence Index = B/A =	1.71
			30 =	Total Cover			
						Hydrophytic Vegetation In	
lerb Stratum	Plot Size (	5 ft. )	Absolute % Cover	Dominant	Indicator Status	Rapid test for hydrophyl X Dominance test is >50%	
Poa palustris			25	Species Y	FACW	X Dominance test is >50% X Prevalence index is ≤3.	
Carex cristatell	a		15	<u> </u>	FACW	Morphological adaptation	
Carex vulpinoid			15	Y	OBL	supporting data in Rema	
Carex Frankii			15	Y	OBL	sheet)	
Juncus effusus			5	N	FACW	Doobless the budges by the	4 - 4: * / ! -
						Problematic hydrophytic	
						*Indicators of hydric soil and wetla present, unless disturbed or proble	
						Definitions of Vegetation	 Strata·
						Tree - Woody plants 3 in. (7.6 cm	
						breast height (DBH), regardless o	
						Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	s than 3 in. DBH and
			75 =	Total Cover		Herb - All herbaceous (non-woods	v) plants renardless of
Woody Vine			Absolute %	Dominant	Indicator	size, and woody plants less than 3	
Stratum	Plot Size (	30 ft. )	Cover	Species	Status	Woody vines - All woody vines gr	reater than 3.28 ft in
			_			height.	52.51 than 5.20 it iii
							<u> </u>
						Hydrophytic	
						vegetation	
			0 =	Total Cover		present? Y	_
narks: (Include ph	oto numbers her	e or on a sepa	rate sheet)				
arno. (moidde ph	C.O HAITIDGIO HEI	o or on a sepa	0.1001)				

Sampling Point: w-bcr-6/26/2018-01

	Γ	e to the	1			ndicator o	or confirm the absence	of indicators.)			
Depth (Inches)	Matrix Color (moist)	%	Red Color (moist)	lox Feat %		Loc**	Texture	Remarks			
0-10	` <u> </u>	75	10YR 5/8	25	Type* C	M	Clay Loam				
0-10	10YR 4/1	75	10113/0	23	<u> </u>	IVI	Clay Loam				
						-					
• •				Matrix,	CS=Cov	ered or (	Coated Sand Grains				
	PL=Pore Lining, I	VI=Matr	IX								
Hydric Soil	Indicators:		D l. 0.		221		Indicators for	Problematic Hydric Soils:			
11:-4:1	(44)		Dark Su		ร์7) ៷Surface	o (CO)	O M	I. (A40) (BBI D A 447)			
Histisol	pipedon (A2)		( <b>MLRA</b>			e (36)		k (A10) ( <b>MLRA 147)</b> irie Redox (A16) <b>(MLRA 147, 148)</b>			
	listic (A3)				ace (S9)			Floodplain Soils (F19)			
	en Sulfide (A4)		(MLRA		. ,		(MLRA 13				
	d Layers (A5)				Matrix (F.						
	uck (A10) <b>(LRR I</b>	1)	X Deplete			_,		plain in Remarks)			
	d Below Dark Su				rface (F6	3)		, a			
	ark Surface (A12				Surface (						
	Mucky Mineral (S	•			ions (F8						
•	, MLRA 147, 148	•					LRR N, MLRA 136)				
	Gleyed Matrix (S4					<b>VILRA 13</b>					
	Redox (S5)	,					(MLRA 148)				
	d Matrix (S6)						À 127, 147)				
	, ,				•	, .	•				
*Indicators	of hydrophytic ve	getation	and wetland hyd	lrology r	must be p	oresent, ı	unless disturbed or pro	blematic			
						1					
Postrictive I	_ayer (if observed	17.									
	o	4).					Hydric soil pres	ent? Y			
Depth (inch					_		11, un 10 00 ii proc	<u> </u>			
1 \	, <u> </u>				-						
Remarks:						-					

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

Project/Site: Holloway-Knox 138 kV Transmission Li Applicant/Owner: FirstEnergy Investigator(s): B. Robertson, T. Qualio Jacobs Landform (hillslope, terrace, etc.): slope Subregion (LRR or MLRA): LRR N La Soil Map Unit Name: MrF - Morristown channery silt loan Are climatic/hydrologic conditions of the site typical for the Are vegetation, soil, or hydrology Are vegetation, soil, or hydrology SUMMARY OF FINDINGS	State: Section Local relief (con 40.1756 n, 25 to 70 percent slo nis time of the year? significantly	Yes X N disturbed? A oblematic? p	e: T9N R5W S10 e): convex 31.01701 Classification: No lo (If no, e wre "normal circums resent?	6/26/2018	
Hydrophytic vegetation present?  Hydric soil present?  Wetland hydrology present?  No  No	Is the samp	oled area within a	wetland?	No	
Upland along access road adjacent to maintain HYDROLOGY	ined ROW.				
		0	and the Proceedings of the Control		
Wetland Hydrology Indicators:	II 41 - 4 1 - 1		-	num of two required)	
Primary Indicators (minimum of one is required; check a			ce Soil Cracks (B6)		
	Aquatic Plants (B14)	Spars	ely Vegetated Cond	cave Surface (B8)	
High Water Table (A2) Hydro	gen Sulfide Odor (C1)	Draina	age Patterns (B10)		
Saturation (A3) Oxidize	ed Rhizospheres on Livi	ing Moss	Trim Lines (B16)		
Water Marks (B1)Roots			Season Water Table (C2)		
Sediment Deposits (B2) Preser	nce of Reduced Iron (C4	4) Crayfi	ish Burrows (C8)		
Drift Deposits (B3) Recen	it Iron Reduction in Tilled		uration Visible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) Soils (	C6)	Stunte	ted or Stressed Plants (D1)		
Iron Deposits (B5) Thin M	luck Surface (C7)	Geom	norphic Position (D2	?)	
Inundation Visible on AerialOther	(Explain in Remarks)	Shallo	ow Aquitard (D3)		
Imagery (B7)		Microf	topographic Relief (	D4)	
Water-Stained Leaves (B9)		FAC-I	Neutral Test (D5)		
Aquatic Fauna (B13)					
Field Observations:		I			
Surface water present? Yes No	X Depth (inches):		Wetland		
Water table present? Yes No	X Depth (inches):		hydrology		
Saturation present? Yes No	X Depth (inches):		present?	N	
(includes capillary fringe)					
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous	s inspections), if av	/ailable:		
Remarks:					
romano.					

GETATION - 0	26 20161111110 11	allies of Piai	1115			Sampling Point:	upl-bcr-6/26/18-01
			Absolute %	Dominant	Indicator	50/20 Thresholds	20% 50%
Tree Stratum	Plot Size (	30 ft.	Cover	Species	Status	Tree Stratum	20% 50% 0 0
			••••	<b>0</b> p	0	Sapling/Shrub Stratum	2 5
						Herb Stratum	18 45
			_			Woody Vine Stratum	0 0
						Dominance Test Workshe	et
						Number of Dominant Species that are OBL,	
						FACW, or FAC:	1 (A)
			_			Total Number of Dominant	
				T. 1. 1. 0		Species Across all Strata:	4 (B)
			=	Total Cover		Percent of Dominant Species that are OBL,	
apling/Shrub	Plot Size (	15 ft.	Absolute %	Dominant	Indicator	FACW, or FAC:	25.00%(A/B)
Stratum	FIOL SIZE (	1511.	Cover	Species	Status		-
Salix interior			10	Y	FACW	Prevalence Index Workshop	et
						Total % Cover of:	
						OBL species 0 x 1	
						FACW species 10 x 2 FAC species 0 x 3	
						FACU species 60 x 4	
						UPL species 30 x 5	5 = 150
						Column totals 100 (A)	410 (B)
						Prevalence Index = B/A =	4.10
			10 =	Total Cover			
			A h l t 0/	D	La Parker	Hydrophytic Vegetation In	
lerb Stratum	Plot Size (	5 ft. )	Absolute % Cover	Dominant Species	Indicator Status	Rapid test for hydrophyl Dominance test is >50%	
Bromus inermis	2		30	Y	UPL	Prevalence index is ≤3.0	
Phleum pratens			20	<u>'</u>	FACU	Morphological adaptation	
Trifolium prater			20	Y	FACU	supporting data in Rema	
Melilotus officin	nalis		10	N	FACU	sheet)	
Erigeron annuu	IS		10	N	<u>FACU</u>		
						Problematic hydrophytic	
						*Indicators of hydric soil and wetla present, unless disturbed or proble	
			_			Definitions of Vegetation S	 Strata:
						Tree - Woody plants 3 in. (7.6 cm	) or more in diameter at
						breast height (DBH), regardless of	•
						Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	is than 3 in. DBH and
			90 =	Total Cover		Herb - All herbaceous (non-woody	,,,
Woody Vine	Plot Size (	30 ft.	Absolute %	Dominant	Indicator	size, and woody plants less than 3	
Stratum	,		Cover	Species	Status	Woody vines - All woody vines gr height.	eater than 3.28 ft in
						Hydrophytic	
						vegetation	
				Total Cover		present? N	_
narks: (Include ph	oto numbers her	e or on a sepa	rate sheet)				

Sampling Point: upl-bcr-6/26/18-01

Depth	Matrix		Red	lox Feat	ures		-	Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		exture	Remarks
0-6	10YR 5/3	100					Silt cla	y loam	
· ·	oncentration, D= PL=Pore Lining,	•	•	Matrix,	CS=Cov	ered or (	Coated Sa	and Grains	
							ı	ndicators for	Problematic Hydric Soils:
Histic E Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy I (LRR N Sandy I Stripped	Dark Surface (S7) Polyvalue Below Surface (S7) Polyvalue Below Surface (MLRA 147, 148) Polyvalue Below Surface (MLRA 147, 148) Polyvalue Below Surface (MLRA 147, 148) Polyvalue Below Surface (S9) Polyvalue Below Surface (S1) Polyvalue Below Surface (MLRA 147, 148) Phin Dark Surface (S2)  (MLRA 147, 148) Polyvalue Below Surface (S2)			v Śurfaco 8) ce (S9) 8) Matrix (F (F3) face (F6 Surface (ions (F8) e Masses (F13) (N plain So erial (F2	Coast Prairie Redox (A16) (MLRA 147 Piedmont Floodplain Soils (F19) (MLRA 136, 147) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) 6) (F7) 8) es (F12) (LRR N, MLRA 136) MLRA 136, 122) oils (F19) (MLRA 148) 21) (MLRA 127, 147)				
_	Layer (if observed ocky es): 6	d):					Нус	dric soil prese	nt? <u>N</u>
Remarks:									

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

Project/Site: Holloway-Knox 1	38 kV Transmission Line	G:t/C	Belmont County		Sampling Date: 05/04/2020
Applicant/Owner: FirstEnergy		City/C	ounty:	State: OH	Sampling Date: Sampling Point: W-MJA-050420-01E
Investigator(s): MJA, JFW		Castia	on, Township, Range: S		Sampling Point:
Landform (hillslope, terrace, et					Slane (9/ ): 1
Calamatica (LBB and BA) LE	C.): Toesiope	Local reli	er (concave, convex, no	ne): 1 ldt	Slope (%): _1
Subregion (LRR or MLRA): <u>LF</u>					
Soil Map Unit Name: LoC: Lov					
Are climatic / hydrologic condit	• • • • • • • • • • • • • • • • • • • •	-			
					present? Yes X No
Are Vegetation _, Soil _	_, or Hydrology _	_ naturally problema	atic? (If needed, o	explain any answe	ers in Remarks.)
SUMMARY OF FINDIN	GS – Attach site m	ap showing sam	pling point location	ons, transects	s, important features, etc.
Hydrophytic Vegetation Preso	ent? Yes X	No	Is the Sampled Area		
Hydric Soil Present?	Yes X	No	within a Wetland?	Yes^	No
Wetland Hydrology Present?	Yes X	No			
Remarks:	-				
LIVERGLOOV					
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum	of one is required; check	k all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)		True Aquatic Plants (	B14)	Sparsely Ve	getated Concave Surface (B8)
☐ High Water Table (A2)	_	Hydrogen Sulfide Odd	' '		atterns (B10)
Saturation (A3)			es on Living Roots (C3)		
Water Marks (B1)		Presence of Reduced	, ,		Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)	_	Thin Muck Surface (C	•		isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Ц	Other (Explain in Ren	narks)	=	Stressed Plants (D1)
Iron Deposits (B5)	mial Image may (DZ)			_	Position (D2)
Inundation Visible on Ae Water-Stained Leaves (E				Shallow Aqu	aphic Relief (D4)
Aquatic Fauna (B13)	59)			FAC-Neutra	
Field Observations:			<u> </u>	1 AC-Neulla	Trest (D3)
Surface Water Present?	Yes No _X	Donth (inches)			
Water Table Present?			5.00		
	Yes X No		<del></del>	lle de la esta Berna	nt? Yes <sup>X</sup> No
Saturation Present? (includes capillary fringe)	Yes X No	Depth (inches):	vvetiand i	nyarology Presei	nt? Yes X No
Describe Recorded Data (str	eam gauge, monitoring w	vell, aerial photos, pre	vious inspections), if ava	ailable:	
Remarks:					

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

3. \_\_\_\_\_\_

Tree Stratum (Plot size: 30')

Sapling Stratum (Plot size: 15')

Shrub Stratum (Plot size: \_\_\_\_\_\_15' \_\_\_\_)

– Use scientific	Absolute Dominant	Indicator	Sampling Point: W-MJA-050420-0  Dominance Test worksheet:
30' )	% Cover Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
			Total Number of Dominant Species Across All Strata: 1 (B)
			Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B
	0 = Total Cov	/er	Prevalence Index worksheet:
50% of total cover:	20% of total cover	. 0	Total % Cover of: Multiply by:
15'	20 % of total cover		OBL species x 1 = 100
			FACW species0 x 2 =0
			FAC species0 x 3 =0
			FACU species0 x 4 =0
			UPL species0 x 5 =0
		-	Column Totals:(A)(B)
			Prevalence Index = B/A = 1.00
	0 = Total Cov	/er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover	: 0	1 - Rapid Test for Hydrophytic Vegetation
15' )			X 2 - Dominance Test is >50%
,			3 - Prevalence Index is ≤3.0 <sup>1</sup>
		- ·	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
		-	data in Remarks or on a separate sheet)
			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			1
			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	0 = Total Cov	/er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover	: 0	The state of the s
5' )			Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
	100N	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
			Sapling – Woody plants, excluding woody vines,
			approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
		-	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
			<b>Herb</b> – All herbaceous (non-woody) plants, including
			herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
			Woody vine – All woody vines, regardless of height.
	100 = Total Cov		
50% of total cover:5	20% of total cover	:20	
)			
		-	
			1

6			ent, unless disturbed or problematic.
	0 = Total Cover	Definiti	ons of Five Vegetation Strata:
50% of total cover: 0	20% of total cover:	Tree - V	Woody plants, excluding woody vines,
Herb Stratum (Plot size:)		, <u>.'</u> '.	mately 20 ft (6 m) or more in height and 3 in.
1. Typha angustifolia	100N	<u>OBL</u> (7.6 cm	) or larger in diameter at breast height (DBH).
2		Sapling	<b>y</b> − Woody plants, excluding woody vines,
3			mately 20 ft (6 m) or more in height and less
4		than 3 ii	n. (7.6 cm) DBH.
5		Shrub -	- Woody plants, excluding woody vines,
6		annrovi	mately 3 to 20 ft (1 to 6 m) in height.
7			All herbaceous (non-woody) plants, including
8		herbace	eous vines, regardless of size, and woody
9		i piants. c	except woody vines, less than approximately 3 in height.
10			
11		Woody	vine – All woody vines, regardless of height.
	100 _ = Total Cover		
50% of total cover: 50	20% of total cover	20	
Woody Vine Stratum (Plot size:30' )	2070 of total bovor		
1			
2			
3			
4			
5			
<u>.                                    </u>	0 = Total Cover	Hydrop Vegeta	
		Present	
50% of total cover:0			
Remarks: (Include photo numbers here or on a separate sh	neet.)		
IC Array Carna of Engineers		ſ	Eastern Mountains and Piedmont – Version 2.0
JS Army Corps of Engineers		ľ	_astern wountains and Fleumont – Version 2.0

Sampling Point: W-MJA-050420-01E

SOIL

Profile Desc	ription: (Describe t	o the depti	n needed to docum	ent the i	ndicator	or confirn	n the absence	of indicators.)
Depth	Matrix		Redox	Features	S			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0 — 6	10YR 3/2	90	10YR 4/6	10	С	PL	Silt	Mucky
<u>6 — 14</u>	10YR 3/2	85	10YR 4/6	5	С	PL	Silt	With gravel
6 <b>—</b> 14	Gley 1 2.5/_	10	1					Shale deposits
14 — 18	Gley 1 2.5/_	100	/				Silty clay	Shale
_								
								<u> </u>
1Type: C=Cc	ncentration, D=Depl	etion RM-I	Reduced Matrix MS		Sand Gr		<sup>2</sup> Location: D	L=Pore Lining, M=Matrix.
Hydric Soil I		elion, Kivi-i	Teduced Matrix, Mo	-iviaskeu	i Sanu Gr	aii i 5.		ators for Problematic Hydric Soils <sup>3</sup> :
Histosol			☐ Dark Surface	(S7)				cm Muck (A10) <b>(MLRA 147)</b>
_	ipedon (A2)		Polyvalue Bel		ce (S8) <b>(N</b>	ILRA 147,		Coast Prairie Redox (A16)
Black His			Thin Dark Sur					(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleyed				<u>□</u> P	riedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mate	. ,			_	(MLRA 136, 147)
	ck (A10) <b>(LRR N)</b>		Redox Dark S	,	,			ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dark		. ,			Other (Explain in Remarks)
	rk Surface (A12)	DD N	Redox Depres			I DD N		
	ucky Mineral (S1) <b>(L</b> . <b>147, 148)</b>	KK N,	☐ Iron-Mangane MLRA 136		es (F12) <b>(</b>	LKK N,		
	leyed Matrix (S4)		Umbric Surface	-	MIRA 13	6 122)	<sup>3</sup> Ind	icators of hydrophytic vegetation and
	edox (S5)		Piedmont Flor					etland hydrology must be present,
	Matrix (S6)		Red Parent M					less disturbed or problematic.
	ayer (if observed):	No			/ (		1	
Type:	, ,	110						
	:hes):						Hydric Soil	Present? Yes X No No
Remarks:	,							





north south





east west

Soil Photos:

W-MJA-050420-01E



Soil Profile

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

Project/Site: Holloway-Knox 13	88 kV Transmission	n Line	0". 10	Relmont County		•	Wetland NH-73s 05/04/2020
-	O KV Transmission	LINC	_ City/County:		State: OH	Sampling Date:	W-MJA-050420-01S
Applicant/Owner: FirstEnergy Investigator(s): MJA, JFW			Castian Tau	nahin Danas Si		Sampling Point	<u> </u>
Landform (hillslope, terrace, etc						Clan	o (0/ ), 1
						Siop 94237 Datum	
Subregion (LRR or MLRA): <u>LR</u> Soil Map Unit Name: <u>LoC: Low</u>							
Are climatic / hydrologic condition	• • •		-			,	( NI:
Are Vegetation, Soil		_	-				NO
Are Vegetation , Soil .					explain any answe		
SUMMARY OF FINDING	S – Attach sit	e map showi	ng sampling	point location	ons, transects	, important fe	atures, etc.
Hydrophytic Vegetation Prese			_ Is the	Sampled Area	~		
Hydric Soil Present?	Yes	X No		a Wetland?	Yes^	No	
Wetland Hydrology Present?	Yes	X No	_				
·	· 						
HYDROLOGY							1
Wetland Hydrology Indicato					$\overline{}$	tors (minimum of t	wo required)
Primary Indicators (minimum o	of one is required; of		-		Surface Soil		
Surface Water (A1)		=	Plants (B14)			getated Concave S	Surface (B8)
High Water Table (A2)			ulfide Odor (C1)	- i D t (00)	Drainage Par		
✓ Saturation (A3)  Water Marks (B1)				ving Roots (C3)	Moss Trim Li		
Sediment Deposits (B2)			Reduced Iron (C Reduction in Till		Crayfish Buri	Water Table (C2)	
Drift Deposits (B3)		Thin Muck S		ca cons (00)		sible on Aerial Ima	agery (C9)
Algal Mat or Crust (B4)			in in Remarks)			tressed Plants (D1	
Iron Deposits (B5)		_ ` '	,			Position (D2)	,
Inundation Visible on Aeri	al Imagery (B7)				Shallow Aqui	tard (D3)	
Water-Stained Leaves (B	9)				Microtopogra	phic Relief (D4)	
Aquatic Fauna (B13)					✓ FAC-Neutral	Test (D5)	
Field Observations:							
Surface Water Present?	Yes X No _						
Water Table Present?	Yes X No _						
Saturation Present? (includes capillary fringe)	Yes X No _					t? Yes X	No
Describe Recorded Data (stre	am gauge, monitor	ing well, aerial ph	otos, previous ir	ispections), if ava	ılable:		
Remarks:							

Sampling Point W-MJA-050420-018
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		Absolute	Dominant I		Dominance Test worksheet:	
Tree Stratum (Plot size:			Species?		Number of Dominant Species	
1					That Are OBL, FACW, or FAC: 2 (A)	
2					Total Number of Dominant	
3					Species Across All Strata: 2 (B)	
4						
5					Percent of Dominant Species That Are OBL_FACW_or_FAC: 100.00 (A/B	
					That Are OBL, FACW, or FAC:100.00 (A/B	3)
6			= Total Cove		Prevalence Index worksheet:	
			= Total Cove	r	Total % Cover of: Multiply by:	
	50% of total cover: 0	20% of	total cover:_	0	OBL species145 x 1 =145	
Sapling Stratum (Plot size:	)				FACW species 30 x 2 = 60	
1						
2					1 AO Species X O =	
3					TAGO species X 4 =	
					UPL species0 x 5 =0	
4					Column Totals: <u>185</u> (A) <u>245</u> (B)	)
5					Provalence Index = R/A = 1.32	
6					Frevalence index - D/A -	
		65	= Total Cove	r	Hydrophytic Vegetation Indicators:	
	50% of total cover: 33	20% of	total cover:	13	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size:			_		X 2 - Dominance Test is >50%	
,					3 - Prevalence Index is ≤3.0 <sup>1</sup>	
1					4 - Morphological Adaptations <sup>1</sup> (Provide supportin	na
2					data in Remarks or on a separate sheet)	19
3					Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
4					<u> </u>	
5					<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
6					be present, unless disturbed or problematic.	
		0	= Total Cove	r	Definitions of Five Vegetation Strata:	
	EOO/ of total agreem 0	200/ of	total accusar	0	John Marie Co. 1 110 10 gottanon Chattan	
	50% of total cover: 0	20% of	total cover:_	0	Tree – Woody plants, excluding woody vines,	
Herb Stratum (Plot size:	5' )		total cover:_		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.	
1. Typha angustifolia	5' )	80	N	OBL	Tree – Woody plants, excluding woody vines,	
· ·	5' )		N		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.	
1. Typha angustifolia	5' )	80	N	OBL	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
Typha angustifolia     Persicaria sp.	5' )	80 30	N N	OBL FACW	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines,	
Typha angustifolia     Persicaria sp.	5' )	80 30	N N	OBL FACW	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
Typha angustifolia     Persicaria sp.     Apocynum cannabinum  4. 5.	5' )	80 30 10	N N N	OBL FACW	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
Typha angustifolia     Persicaria sp.     Apocynum cannabinum       S.      G.      Typha angustifolia	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
Typha angustifolia     Persicaria sp.     Apocynum cannabinum     .      .	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including	
Typha angustifolia     Persicaria sp.     Apocynum cannabinum  4. 5. 6. 7. 8.	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	3
Typha angustifolia     Persicaria sp.     Apocynum cannabinum     .      .	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	}
Typha angustifolia     Persicaria sp.     Apocynum cannabinum  4. 5. 6. 7. 8.	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
Typha angustifolia Persicaria sp. Apocynum cannabinum	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3	3
Typha angustifolia Persicaria sp. Apocynum cannabinum  A.  5. 6. 7. 8. 9. 10.	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
Typha angustifolia Persicaria sp. Apocynum cannabinum  A.  5. 6. 7. 8. 9. 10.	5' )	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
Typha angustifolia Persicaria sp. Apocynum cannabinum  A.  S.  6.  7.  8.  9.  10.  11.	5' ) 50% of total cover: 60	80 30 10	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4.	5' )  50% of total cover: 60 : 30' )	80 30 10 	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover:60 :30')	80 30 10 ————————————————————————————————	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4.	5' )  50% of total cover:60 :30')	80 30 10 ————————————————————————————————	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	50% of total cover:60		N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover: 60 : 30' )	80 30 10 10 120 20% of	N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4.	5' )  50% of total cover:60 :30')		N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover:60 :30')		N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover: 60 : 30' )		N N N N N N N N N N N N N N N N N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover:60 :30' )		N N N N N N N N N N N N N N N N N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic Vegetation	3
1. Typha angustifolia 2. Persicaria sp. 3. Apocynum cannabinum 4. 5	5' )  50% of total cover:60 :30' )		N N N N N N N N N N N N N N N N N N N	OBL FACW FACU	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).  Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.  Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.  Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic Vegetation Present?  Yes X No	3

Sampling Point: W-MJA-050420-018

SOIL

	Matrix	%	Redo	x Features	<b>T</b> 1	1 2	T - 1 - 44 1 1 1 1 1	Damadia
inches)	Color (moist)	90	Color (moist) 10YR 4/6	10	Type <sup>1</sup> C	Loc <sup>2</sup>	<u>Texture</u> Silt	Remarks
0 — 8	10YR 3/2							
3 — 18	10YR 3/2	80	10YR 4/6	10	С	M	Silty clay	
3 <b>—</b> 18	Gley 1 2.5/_	10					-	Shale
_								
_								
		·						
	-						-	
_								
vpe: C=Co	ncentration. D=Dep	letion RM=	Reduced Matrix, MS	S=Masked S	Sand Gra	ins.	<sup>2</sup> Location: PI	 _=Pore Lining, M=Matrix.
/dric Soil II			,					tors for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)		☐ Dark Surface	(S7)			□ 2	cm Muck (A10) (MLRA 147)
_	ipedon (A2)		Polyvalue Be		e (S8) <b>(M</b>	LRA 147,		oast Prairie Redox (A16)
Black His			Thin Dark Su					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye	ed Matrix (F	2)		<u>□</u> P	edmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma	, ,				(MLRA 136, 147)
=	ck (A10) (LRR N)		Redox Dark	•	,			ery Shallow Dark Surface (TF12)
_	Below Dark Surfac	e (A11)	Depleted Date				Цο	ther (Explain in Remarks)
_	rk Surface (A12) ucky Mineral (S1) <b>(I</b>	DD N	☐ Redox Depre☐ Iron-Mangan			DD N		
-	147, 148)	-IXIX I <b>V</b> ,	MLRA 13		(I 12) <b>(I</b>	.ixix i <b>v</b> ,		
_	leyed Matrix (S4)		Umbric Surfa	•	ILRA 13	5. 122)	<sup>3</sup> Indi	cators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N					ess disturbed or problematic.
estrictive L	ayer (if observed):	No						
Type:								
Depth (inc	hes):						Hydric Soil	Present? Yes X No
							1	
emarks:								
emarks:								
emarks:								
emarks:								
emarks:								
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north south





east west

Soil Photos:

W-MJA-050420-01S



Soil Profile

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

Project/Site: Holloway-Knox 1	I38 kV Transmission Lir	IP City/C	Belmont County		Sampling Date: 05/04/20	
Applicant/Owner: FirstEnergy		City/C	ounty	State: OH	Sampling Date Sampling Point: <sup>U-MJA-</sup>	-050420-01
Investigator(s): MJA, JFW		Casti	on, Township, Range: S		Sampling Point:	
Landform (hillslope, terrace, et					Clans (0/ ):	1
Subregion (LRR or MLRA): LF						
Soil Map Unit Name: LoC: Lov						
Are climatic / hydrologic condit		•				
Are Vegetation, Soil						)
Are Vegetation _, Soil _	_, or Hydrology _	_ naturally problema	atic? (If needed, e	explain any answ	ers in Remarks.)	
SUMMARY OF FINDIN	GS – Attach site n	nap showing san	npling point location	ons, transect	s, important features	s, etc.
Hydrophytic Vegetation Pres	ent? Yes	NoX	Is the Sampled Area			
Hydric Soil Present?	Yes	No X	within a Wetland?	Yes	NoX	
Wetland Hydrology Present?		No <u>X</u>				
Remarks:						
LIVEROLOGY						
HYDROLOGY						
Wetland Hydrology Indicat					ators (minimum of two requ	<u>uired)</u>
Primary Indicators (minimum	of one is required; chec			=	l Cracks (B6)	
Surface Water (A1)		True Aquatic Plants (			egetated Concave Surface	(B8)
High Water Table (A2)	H	Hydrogen Sulfide Od	, ,		atterns (B10)	
Saturation (A3)		i	es on Living Roots (C3)	Moss Trim I		
Water Marks (B1)	<u> </u>	Presence of Reduced	, ,		Water Table (C2)	
Sediment Deposits (B2) Drift Deposits (B3)	H	Recent Iron Reduction Thin Muck Surface (0)		Crayfish Bu	rrows (C8) /isible on Aerial Imagery (C	20)
Algal Mat or Crust (B4)		Other (Explain in Rer	•		Stressed Plants (D1)	,9)
Iron Deposits (B5)	_	Outer (Explain in Net	nans)		Position (D2)	
Inundation Visible on Ae	rial Imagery (B7)			Shallow Aqu	` '	
Water-Stained Leaves (I					aphic Relief (D4)	
Aquatic Fauna (B13)	- /			FAC-Neutra		
Field Observations:						
Surface Water Present?	Yes No X	_ Depth (inches):				
Water Table Present?		_ Depth (inches):				
Saturation Present?		Depth (inches):		Hydrology Prese	nt? Yes No	Х
(includes capillary fringe)						
Describe Recorded Data (str	eam gauge, monitoring	well, aerial photos, pre	vious inspections), if ava	ailable:		
Remarks:						

Sampling	Point:	U-MJA-050420	)-01
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	001	Absolute	Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:1.			Species?		Number of Dominant Species That Are OBL, FACW, or FAC:  (A)
2					
3					Total Number of Dominant Species Across All Strata: 1 (B)
4					Percent of Dominant Species
5					That Are OBL, FACW, or FAC: 0.00 (A/B)
6			= Total Cove		Prevalence Index worksheet:
					Total % Cover of: Multiply by:
	50% of total cover: 0	20% of	total cover:_	0	OBL species0 x 1 =0
Sapling Stratum (Plot size:					FACW species0 x 2 =0
1					FAC species 8 x 3 = 24
2					FACU species 110 x 4 = 440
3					UPL species 5 x 5 = 25
4					Column Totals: 123 (A) 489 (B)
5					Column Totals. 125 (A) 400 (B)
6					Prevalence Index = B/A = 3.98
		:	= Total Cove	er	Hydrophytic Vegetation Indicators:
	50% of total cover:0	20% of	total cover:_	0	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:	15')				2 - Dominance Test is >50%
1					3 - Prevalence Index is ≤3.0 <sup>1</sup>
2					4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3					data in Remarks or on a separate sheet)
4					Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5					
6					<sup>1</sup> Indicators of hydric soil and wetland hydrology must
			= Total Cove	er	be present, unless disturbed or problematic.  Definitions of Five Vegetation Strata:
	50% of total cover:0	20% of	total cover	0	Definitions of Five Vegetation Strata.
Herb Stratum (Plot size:	E1	20 /0 01	total cover.		Tree – Woody plants, excluding woody vines,
Schedonorus arundinaceus	,	70	N.I.	FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Daucus carota		<u>70</u> 5	N	UPL	(1.00 cm) or ranger in anameter at 2.00cm (2.21.7).
3 Solidago canadensis				FACU	Sapling – Woody plants, excluding woody vines,
o		15	N		approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4. Melilotus officinalis		25	N	FACU	
<ul><li>5. Populus deltoides</li><li>6</li></ul>		8	<u>N</u>	FAC	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
7					Herb – All herbaceous (non-woody) plants, including
8					herbaceous vines, regardless of size, and woody
9					plants, except woody vines, less than approximately 3
10					ft (1 m) in height.
					Woody vine - All woody vines, regardless of height.
11		122	- Total Cove		
			= Total Cove		
	50% of total cover: 62	20% of	total cover:_	25	
Woody Vine Stratum (Plot size:	)				
1					
2					
3					
4					
5					Undrankutia
		0 :	= Total Cove	er	Hydrophytic Vegetation
	50% of total cover:0			_	Present? Yes NoX
Remarks: (Include photo number	<u> </u>		-212. 00 101		
. tearito. (morado prioto ridirio	5.2 o. o. o. a ooparato o	,			

Sampling Point: U-MJA-050420-01

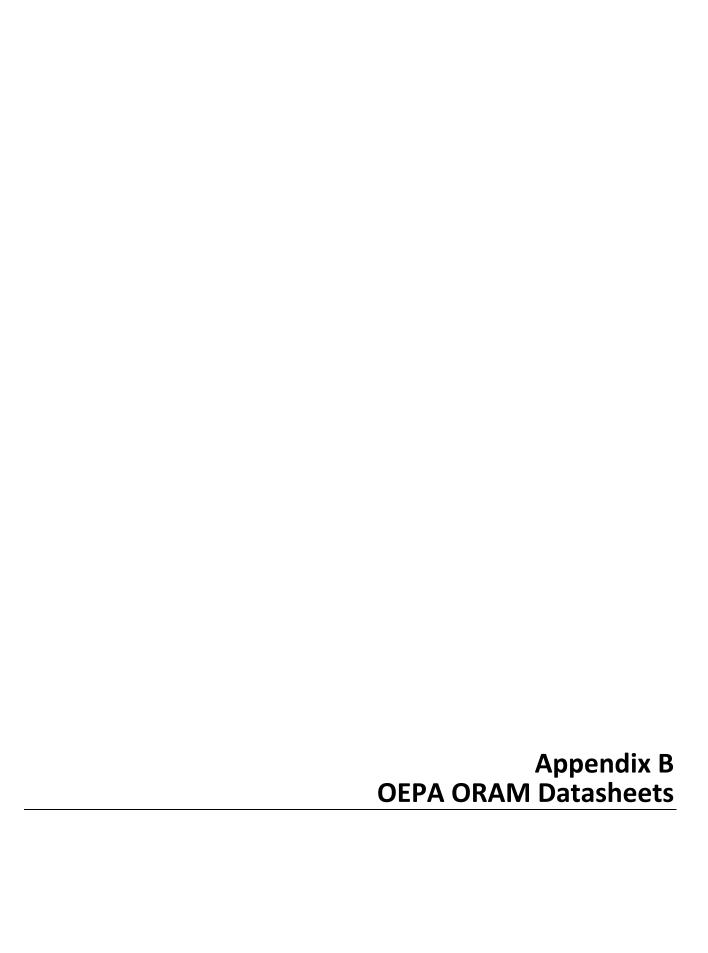
SOIL

	Matrix Color (moist)	<u></u> %	Redox Feat Color (moist) %		Texture	Remarks	
<u>-</u> 3	10YR 3/2	100	Color (moist) %	Type Loc	Silty loam	With gravel	
<del>-</del> 3	10113/2				Silty Idaili	- Villi glavei	
			<u></u>				
_							
_							
_							
_						-	
		etion, RM=Re	educed Matrix, MS=Mas	sked Sand Grains.		L=Pore Lining, M=Matrix.	
dric Soil Ir	ndicators:				Indica	ators for Problematic Hydric	Soils <sup>3</sup> :
Histosol (			Dark Surface (S7)			cm Muck (A10) (MLRA 147)	
	pedon (A2)			urface (S8) (MLRA 147,	<b>148)</b>	oast Prairie Redox (A16)	
Black His				(S9) <b>(MLRA 147, 148)</b>		(MLRA 147, 148)	
	Sulfide (A4)		Loamy Gleyed Mat		<u>Ц</u> Р	iedmont Floodplain Soils (F19)	
	Layers (A5)		Depleted Matrix (F3			(MLRA 136, 147)	٥)
	ck (A10) <b>(LRR N)</b> Below Dark Surface	(//11)	Redox Dark Surfac Depleted Dark Surf	` '		ery Shallow Dark Surface (TF1 ther (Explain in Remarks)	2)
	rk Surface (A12)	(A11)	Redox Depressions		υ	ther (Explain in Remarks)	
	ucky Mineral (S1) <b>(L</b>	RR N		asses (F12) <b>(LRR N,</b>			
-	147, 148)	,	MLRA 136)	40000 (1 12) <b>(EITH 14,</b>			
	eyed Matrix (S4)			13) <b>(MLRA 136, 122)</b>	<sup>3</sup> Indi	icators of hydrophytic vegetatio	n and
	edox (S5)			in Soils (F19) (MLRA 14		tland hydrology must be presei	
	Matrix (S6)			al (F21) <b>(MLRA 127, 14</b> 7		ess disturbed or problematic.	
strictive L	ayer (if observed):	Yes	-				
Type: Gra	avel		_				
Depth (inc	hes): 3				Hydric Soil	Present? Yes No	X
	,		<u>–                                      </u>				
marks:							
narks:							
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East Soil Profile



Site: First	Energy	Holloway-Knox 138kV	Rater(s): B.Otto, T. (	Qualio	<b>Date:</b> 5/15/2018
4 4	$\neg$				w-bao-05/15/2018-04
1 1		etric 1. Wetland A	` '		
max 6 pts. sub	total Sel	ect one size class and assign scc  >50 acres (>20.2ha) (6 pts  25 to <50 acres (10.1 to <1  10 to <25 acres (4 to <10.  3 to <10 acres (1.2 to <4h  0.3 to <3 acres (0.12 to <1  ✓ 0.1 to <0.3 acres (0.04 to <0.1 acres (0.04ha) (0 pts)	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)		
7 8	М	etric 2. Upland bu	uffers and surrou	nding land use.	
max 14 pts. sub	total 2a.	Calculate average buffer width.  WIDE. Buffers average 50  MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers Intensity of surrounding land use VERY LOW. 2nd growth of LOW. Old field (>10 years MODERATELY HIGH. Re	Select only one and assign sco Om (164ft) or more around wetla e 25m to <50m (82 to <164ft) ar ge 10m to <25m (32ft to <82ft) average <10m (<32ft) around v	ore. Do not double check. and perimeter (7) round wetland perimeter (4) around wetland perimeter (1) wetland perimeter (0) and average. an, wildlife area, etc. (7) bowth forest. (5) conservation tillage, new fall	)
13.5 21	.5 <b>M</b>	etric 3. Hydrology	<b>/</b> .		
max 30 pts. sub		Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface Perennial surface water (la	t apply.  ace water (3)	Part of wetland/u	
		Maximum water depth. Select of >0.7 (27.6in) (3)  ✓ 0.4 to 0.7m (15.7 to 27.6in) <0.4m (<15.7in) (1)  Modifications to natural hydrolog	only one and assign score.	Semi- to perman Regularly inunda Seasonally inunda Seasonally satur	nently inundated/saturated (4) ated/saturated (3)
		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (not filling/grading road bed/RR trac dredging other_former mini	ck
7.5 29	M	letric 4. Habitat A	Iteration and Dev	elopment.	
max 20 pts. subi	total 4a.	Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) Habitat development. Select on Excellent (7) Very good (6) Good (5) Moderately good (4)	ne or double check and average	-	
	4c.	Fair (3) Poor to fair (2) Poor (1) Habitat alteration. Score one or None or none apparent (9)		erved	
29 subtotal		Recovered (6) Recovering (3) Recent or no recovery (1)	✓ mowing ✓ grazing ✓ clearcutting ✓ selective cutting woody debris removal toxic pollutants	shrub/sapling rei herbaceous/aqua sedimentation dredging	atic bed removal

	ergy Holloway-Knox 138kV Rater	(s): B.Otto	o, T. Quallo	<b>Date:</b> 5/15/2018
29	1			w-bao-05/15/201
subtotal first				
Ī	page			
29	Metric 5. Special Wetlar	nds.		
max 10 pts. subtotal				
	Bog (10)			
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5)			
	Lake Erie coastal/tributary wetland-			
	Lake Erie coastal/tributary wetland-	-	logy (5)	
	Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10)	nings) (10)		
	Known occurrence state/federal thro	eatened or enda	angered species (10)	
	Significant migratory songbird/water			
	Category 1 Wetland. See Question	1 Qualitative R	ating (-10)	
4   33				
7 33	Metric 6. Plant commun	•	•	opograpny.
max 20 pts. subtotal	9		Community Cover Scale	2.171
	Score all present using 0 to 3 scale.  Aquatic bed	<u>0</u> 1	Absent or comprises <0.1ha (0.3)  Present and either comprises sr	
	1 Emergent	'	vegetation and is of moderate	
	Shrub		significant part but is of low qu	
	Forest	2	Present and either comprises si	
	Mudflats		vegetation and is of moderate	quality or comprises a si
	Open water Other	3	part and is of high quality  Present and comprises significa	int part, or more, of wetla
	6b. horizontal (plan view) Interspersion.	J	vegetation and is of high quali	
	Select only one.	•		
	High (5)		escription of Vegetation Quality	
			Lave and allegantic and law and allegant	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or predon	
	Moderate (3)	low	disturbance tolerant native spe	ecies
	Moderate (3)  Moderately low (2)  ✓ Low (1)			ecies nent of the vegetation,
	Moderate (3)  Moderately low (2)  ✓ Low (1)  None (0)		disturbance tolerant native spo Native spp are dominant compo although nonnative and/or dist can also be present, and spec	ecies inent of the vegetation, turbance tolerant native s ies diversity moderate to
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer		disturbance tolerant native spo Native spp are dominant compo- although nonnative and/or dist can also be present, and spec moderately high, but generally	ecies  nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare
	Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	disturbance tolerant native spot Native spp are dominant composition although nonnative and/or district can also be present, and spec moderately high, but generally threatened or endangered spp	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer		disturbance tolerant native spo Native spp are dominant compo- although nonnative and/or dist can also be present, and spec moderately high, but generally	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp
	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)	mod	disturbance tolerant native spr Native spp are dominant comportal although nonnative and/or distriction also be present, and specimoderately high, but generally threatened or endangered spp A predominance of native specimand/or disturbance tolerant national absent, and high spp diversity	nent of the vegetation, turbance tolerant native socies diversity moderate to who presence of rare ones, with nonnative spptive spp absent or virtual and often, but not always
	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)	mod	disturbance tolerant native spr Native spp are dominant compo- although nonnative and/or dist can also be present, and spec moderately high, but generally threatened or endangered spp A predominance of native speci- and/or disturbance tolerant na	nent of the vegetation, turbance tolerant native socies diversity moderate to who presence of rare ones, with nonnative spptive spp absent or virtual and often, but not always
	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) Vearly absent <5% cover (0)	high	disturbance tolerant native spr Native spp are dominant comportant although nonnative and/or districted also be present, and specimoderately high, but generally threatened or endangered spp A predominance of native specimand/or disturbance tolerant natabsent, and high spp diversity the presence of rare, threaten	nent of the vegetation, turbance tolerant native socies diversity moderate to who presence of rare ones, with nonnative spptive spp absent or virtual and often, but not always
	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)	high	disturbance tolerant native spr Native spp are dominant comportal although nonnative and/or distriction also be present, and specimoderately high, but generally threatened or endangered spp A predominance of native specimand/or disturbance tolerant national absent, and high spp diversity	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtual and often, but not alway
	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 (-1)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.	mod high	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and/or districted and/or districted and/or districted and/or endangered spice. A predominance of native specification and/or disturbance tolerant nation absent, and high spp diversity the presence of rare, threaten    Open Water Class Quality	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks	high  Mudflat and  0 1 2	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and/or districted and/or districted and/or districted and/or districted and/or endangered spip.  A predominance of native specification and/or disturbance tolerant national absent, and high spp diversity the presence of rare, threaten  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.8)	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	high  Mudflat and 0 1	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and/or districted and/or districted and/or districted and/or endangered spice. A predominance of native specification and/or disturbance tolerant nation absent, and high spp diversity the presence of rare, threaten    Open Water Class Quality	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	disturbance tolerant native spi Native spp are dominant comportational although nonnative and/or districtional also be present, and specific moderately high, but generally threatened or endangered spip.  A predominance of native specific and/or disturbance tolerant national absent, and high spp diversity the presence of rare, threaten also also also also also also also also	ecies nent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	high  Mudflat and 0 1 2 3	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or distriction and specific can also be present, and specific can and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threaten also composed composed control can be sent and con	ecies Inent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp  acres) 88 acres)
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and specific can also be present, and specific can also be present or endangered spip.  A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threaten also contained and contained also contained and contained are contained as a contained are contained a	ecies Inent of the vegetation, turbance tolerant native s cies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtuall and often, but not always ed, or endangered spp  acres) 88 acres)
	Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3  Microtopog 0 1	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and specific can also be present, and specific can also be present or endangered spip.  A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threaten also contained and specific can be specificated as a contained and specific can be specificated as a contained and specific can be specificated as a contained as a con	ecies Inent of the vegetation, turbance tolerant native spies diversity moderate to v w/o presence of rare es, with nonnative spp tive spp absent or virtually and often, but not always ed, or endangered spp  acres) 88 acres)  f more common
· 2 grav 76	Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools	high  Mudflat and 0 1 2 3  Microtopog	disturbance tolerant native spi Native spp are dominant comportational although nonnative and/or district can also be present, and specific can also predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threaten also present contained to calculate the contained can be also present to calculate the contained can be also present to calculate the contained can be also present of marginal quality.	ecies Inent of the vegetation, turbance tolerant native spoises diversity moderate to a w/o presence of rare  bees, with nonnative sppoitive spp absent or virtually and often, but not always ed, or endangered sppoints acres)  acres)  acres)  f more common  but not of highest
<sup>-</sup> 2 gray zo	Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools	high  Mudflat and 0 1 2 3  Microtopog 0 1	disturbance tolerant native spi Native spp are dominant comportation although nonnative and/or districted and specific can also be present, and specific can also be present or endangered spip.  A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threaten also contained and specific can be specificated as a contained and specific can be specificated as a contained and specific can be specificated as a contained as a con	ecies Inent of the vegetation, turbance tolerant native spoises diversity moderate to a w/o presence of rare  bees, with nonnative sppoitive spp absent or virtually and often, but not always ed, or endangered sppointers)  acres)  acres)  f more common  but not of highest highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/15/2018
2	2		w-bao-05/15/2018-03
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.	
7	9	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  ✓ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falle  ✓ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
13.5	22.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  ✓ 0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream/  Part of wetland/u  ✓ Part of riparian or  3d. Duration inundation/sat  ✓ Regularly inundar  ✓ Seasonally inundar  ✓ Seasonally inundar  ✓ Seasonally inundar	nin (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)  instormwater)
7.5	30	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1)  Very good (4) Fair (3) Poor to fair (2) Poor (1)  Check all disturbances observed Arbitation sedimentation	
SU	30	selective cutting dredging woody debris removal farming toxic pollutants nutrient enrichme	ent

ORAM v. 5	.0 Field F	orm Quantitative Rating		Wetland NH-2
			(s): B.Otto	o, T. Qualio <b>Date:</b> 5/15/2018
su	30 btotal first pa	nge		w-bao-05/15/2018-03
0	30	Metric 5. Special Wetlan	ds.	
max 10 pts.	subtotal	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-u Lake Erie coastal/tributary wetland-u Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	inrestricted hyd estricted hydrol ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)
6	36	Metric 6. Plant commun	ities, inte	erspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  Emergent  Shrub Forest Mudflats Open water Other  6b. horizontal (plan view) Interspersion.  Select only one.  High (5) Moderately high(4) Moderate (3) ✓ Moderately low (2) Low (1) None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-1)	2	Absent or comprises <0.1ha (0.2471 acres) contiguous area  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  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  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  escription of Vegetation Quality  Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  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
odified		Sparse 5-25% cover (-1)  √ Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  ───────────────────────────────────	0 1 2 3	the presence of rare, threatened, or endangered spp  I Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  I raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality  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
36	GRAN	ID TOTAL (max 100 pts)		=

tEnerg	y Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/14/2018
		w-bao-5/14/2018-02
ubtotal S	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)	
- I	Metric 2. Upland buffers and surrounding land use.	
ubtotal 2	a. 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)  b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)	w field. (3)
8.5	Metric 3. Hydrology.	
ubtotal 3	a. Sources of Water. Score all that apply.    High pH groundwater (5)   100 year floodplain	n (1) ake and other human use (1) ake and other human use (1) aland (e.g. forest), complex (1) upland corridor (1) rration. Score one or dbl check ntly inundated/saturated (4) ed/saturated (3) atted (2) ted in upper 30cm (12in) (1) stormwater)
5	Metric 4. Habitat Alteration and Development.	
4 4	a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  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)  C. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  A selective cutting Redimentation A redging Woody debris removal	ic bed removal
	btotal S  B.5 btotal 3  3  3  4  4	Metric 1. Wetland Area (size).

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-3
Š	( <b>s):</b> B.Otto	o, T. Qualio	<b>Date:</b> 5/14/2018
25 subtotal first page			w-bao-5/14/2018-02
0 25 Metric 5. Special Wetlan	ds.		
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-ru  Lake Plain Sand Prairies (Oak Open  Relict Wet Prairies (10)  Known occurrence state/federal thre  Significant migratory songbird/water  Category 1 Wetland. See Question	estricted hydro nings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
0 25 Metric 6. Plant commun	-	•	opography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.		Community Cover Scale	474)
Score all present using 0 to 3 scale.  Aquatic bed  Emergent Shrub	1	Absent or comprises <0.1ha (0.2  Present and either comprises sm vegetation and is of moderate of significant part but is of low qua	all part of wetland's quality, or comprises a
Forest Mudflats Open water	2	Present and either comprises sig vegetation and is of moderate of part and is of high quality	nificant part of wetland's
Other 6b. horizontal (plan view) Interspersion.	3	Present and comprises significan vegetation and is of high quality	
Select only one.			
High (5)  Moderately high(4)  Moderate (3)	Narrative D	Low spp diversity and/or predomi disturbance tolerant native spe	cies
Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer	mod	Native spp are dominant compor although nonnative and/or distu can also be present, and speci- moderately high, but generally	urbance tolerant native spp es diversity moderate to
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)	high	threatened or endangered spp A predominance of native specie and/or disturbance tolerant nati absent, and high spp diversity a the presence of rare, threatene	ve spp absent or virtually and often, but not always,
Nearly absent <5% cover (0) Absent (1)	Mudflat and	l Open Water Class Quality	a, or oridangered opp
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a)	
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	s acres)
1 Amphibian breeding pools		raphy Cover Scale	
	0	Absent	more commen
	1	Present very small amounts or if	more common
Category 1	2	of marginal quality  Present in moderate amounts, but quality or in small amounts of h	_
	3	Present in moderate or greater a and of highest quality	
25 GRAND TOTAL (max 100 pts)			

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/14/2018
0		1	w-bao-5/14/2018-01
3	3	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   ✓ 3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
7	10	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  ✓ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow.  ✓ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
13.5	23.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream/I  Part of wetland/u  Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  V Seasonally inundat	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1)  stormwater)
9	32.5	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Check all disturbances observed Recovering (3) Recent or no recovery (1)  Action 1. The provided Habitat alteration of the provi	
SL	32.5	woody debris removal farming toxic pollutants nutrient enrichme	nt

RAM v. 5.0 Field Form Quantitative Rating			Wetland NH-
Site: FirstEnergy Holloway-Knox 138kV Rater(	(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/14/2018
32.5			w-bao-5/14/2018-
32.5 Metric 5. Special Wetlan  ax 10 pts. subtotal Check all that apply and score as indicated.	ds.		
Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5)			
Lake Erie coastal/tributary wetland-u Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open	estricted hydro	=	
Relict Wet Prairies (10)  Known occurrence state/federal three Significant migratory songbird/water  Category 1 Wetland. See Question	fowl habitat or	usage (10)	
Metric 6. Plant communi	ities, int	erspersion, microt	opography.
ax 20 pts. subtotal 6a. Wetland Vegetation Communities.		Community Cover Scale	1474 cores) contiguous ores
Score all present using 0 to 3 scale.  Aquatic bed Emergent Shrub	1	Absent or comprises <0.1ha (0.2  Present and either comprises sn vegetation and is of moderate significant part but is of low qu	nall part of wetland's quality, or comprises a
Forest Mudflats Open water	2	Present and either comprises significant vegetation and is of moderate part and is of high quality	nificant part of wetland's quality or comprises a small
Other 6b. horizontal (plan view) Interspersion. Select only one.	3	Present and comprises significar vegetation and is of high qualit	
High (5)  Moderately high(4)  Moderate (3)	low	Low spp diversity and/or predom disturbance tolerant native spe	cies
Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer	mod	Native spp are dominant compor although nonnative and/or distriction also be present, and speci- moderately high, but generally	urbance tolerant native spp es diversity moderate to
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered spp A predominance of native species	es, with nonnative spp
Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)		and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatene	and often, but not always,
Nearly absent <5% cover (0) Absent (1)	Mudflat and	l Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	3	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	o acies)
1 Amphibian breeding pools		raphy Cover Scale	
	1	Absent Present very small amounts or if of marginal quality	more common
or 2 gray zone	2	Present in moderate amounts, b quality or in small amounts of the	
	3	Present in moderate or greater a	mounts

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/15/2018
		<b>7</b>	v-bao-05/15/2018-02
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  √  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
7	9	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
16.5	25.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Part of vetland/up  Part of riparian or  Semi- to permaner  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) land (e.g. forest), complex (1) upland corridor (1) ration. Score one or dbl check intly inundated/saturated (4) ed/saturated (3) ited (2) ted in upper 30cm (12in) (1)
7.5	33	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) ✓ Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) ✓ Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Receive cutting  None or none apparent (9) Recovering (3) Recent or no recovery (1)  Very good (6) Check all disturbances observed ✓ mowing ✓ grazing ✓ clearcutting ✓ selective cutting ✓ selective cutting	
SI	33 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichmer	it

	rgy Holloway-Knox 138kV Rate	er(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/15/2018
22	1			w-bao-05/15/2018
33	]			
subtotal first pa	age 1			
0 33	Metric 5. Special Wetla	ınds.		
max 10 pts. subtotal	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		=	
	Lake Erie coastal/tributary wetland	-	logy (5)	
	Lake Plain Sand Prairies (Oak Op Relict Wet Prairies (10)	enings) (10)		
	Known occurrence state/federal th	nreatened or enda	angered species (10)	
	Significant migratory songbird/wat			
	Category 1 Wetland. See Question	on 1 Qualitative R	ating (-10)	
2 25	1			
2   35	Metric 6. Plant commu	nities, int	erspersion, micro	topography.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.	<u>Vegetation</u>	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (	
	Aquatic bed	1	Present and either comprises	
	1 Emergent Shrub		vegetation and is of modera	
	Forest	2	significant part but is of low Present and either comprises	
	Mudflats	2	vegetation and is of modera	
	Open water		part and is of high quality	quanty or comprisce a cir
	Other	3	Present and comprises signific	cant part, or more, of wetlar
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qua	
	Select only one.			
	High (5)		escription of Vegetation Qualit	
	Moderately high(4)	low	Low spp diversity and/or predo	
	Moderate (3) Moderately low (2)	mod	disturbance tolerant native s  Native spp are dominant comp	•
	Low (1)	mod	although nonnative and/or d	•
				otarbarios tolorarit riativo o
	I ✓ INone (0)		_	ecies diversity moderate to
	✓ None (0) 6c. Coverage of invasive plants. Refer		can also be present, and spenderately high, but genera	
	· ·		can also be present, and spe	lly w/o presence of rare
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage	high	can also be present, and sponderately high, but general threatened or endangered so A predominance of native spe	Ily w/o presence of rare op cies, with nonnative spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)	high	can also be present, and spi moderately high, but genera threatened or endangered s A predominance of native spe and/or disturbance tolerant r	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually
	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)	high	can also be present, and spi moderately high, but genera threatened or endangered si A predominance of native spe and/or disturbance tolerant rabsent, and high spp diversi	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always
	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)	high	can also be present, and spi moderately high, but genera threatened or endangered s A predominance of native spe and/or disturbance tolerant r	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always
	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)		can also be present, and spi moderately high, but general threatened or endangered so A predominance of native spe and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threater	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always
	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)		can also be present, and spi moderately high, but general threatened or endangered so A predominance of native spe and/or disturbance tolerant rabsent, and high spp diversing the presence of rare, threated	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always
	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)	Mudflat and	can also be present, and spi moderately high, but general threatened or endangered so A predominance of native spe and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threater	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp
	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.	Mudflat and	can also be present, and spi moderately high, but general threatened or endangered so A predominance of native spe and/or disturbance tolerant rabsent, and high spp diversing the presence of rare, threated A Open Water Class Quality Absent <0.1ha (0.247 acres)	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2	can also be present, and spiroderately high, but general threatened or endangered so the predominance of native sperand/or disturbance tolerant reabsent, and high spp diversing the presence of rare, threated to the presence of the presenc	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	can also be present, and sp moderately high, but genera threatened or endangered s A predominance of native spe and/or disturbance tolerant r absent, and high spp diversi the presence of rare, threate domain to the control of the control Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47) High 4ha (9.88 acres) or more	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	can also be present, and spirmoderately high, but general threatened or endangered so and/or disturbance of native sperand/or disturbance tolerant in absent, and high spp diversing the presence of rare, threated to the presence of the pre	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog	can also be present, and spirmoderately high, but general threatened or endangered so and/or disturbance of native sperand/or disturbance tolerant in absent, and high spp diversing the presence of rare, threated to the presence of rare, threated to the presence of the p	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp 7 acres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	can also be present, and spirmoderately high, but general threatened or endangered significant absent, and high spp diversion the presence of rare, threated to the presence of rare, threated to the presence of the present of the	Ily w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp 7 acres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0 1	can also be present, and spirmoderately high, but general threatened or endangered significant absent, and high spp diversion the presence of rare, threated to the presence of rare, threated to the presence of the presence	Illy w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always ened, or endangered spp 7 acres)  7. acres)  7. acres)  7. arres)  7. arres)
odified 2	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog	can also be present, and spirmoderately high, but general threatened or endangered significant absent, and high spp diversing the presence of rare, threated topic management absent, and high spp diversing the presence of rare, threated topic management and the presence of the presence	Illy w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always, ened, or endangered spp 7 acres)  7 acres)  8.88 acres)  r if more common  but not of highest
odified 2	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0 1	can also be present, and spirmoderately high, but general threatened or endangered significant absent, and high spp diversion the presence of rare, threated to the presence of rare, threated to the presence of the presence	Illy w/o presence of rare op cies, with nonnative spp native spp absent or virtually ty and often, but not always, ened, or endangered spp 7 acres)  7 acres)  8.88 acres)  Trif more common  but not of highest of highest quality

Site: F	irstEne	gy Holloway-Knox 138kV Rater(s): B.O	tto, T. Qualio	<b>Date:</b> 5/15/2018
	0			w-bao-05/15/2018-01
2	2	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score.		
7	9	Metric 2. Upland buffers and su	urrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and a WIDE. Buffers average 50m (164ft) or more aro MEDIUM. Buffers average 25m to <50m (82 to NARROW. Buffers average 10m to <25m (32ft) VERY NARROW. Buffers average <10m (<32ft) VERY LOW. 2nd growth or older forest, prairie, LOW. Old field (>10 years), shrubland, young so MODERATELY HIGH. Residential, fenced pasting Juliane.	ussign score. Do not double check. bund wetland perimeter (7) <164ft) around wetland perimeter (4) to <82ft) around wetland perimeter (1) around wetland perimeter (0) ble check and average. savannah, wildlife area, etc. (7) econd growth forest. (5) ure, park, conservation tillage, new falle	
15.5	24.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign sc  >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  None or none apparent (12)  Recovered (7)  Recovering (3)  Recent or no recovery (1)  Check all disturbatile weir stormwater in	Part of wetland/u Part of riparian o  3d. Duration inundation/sat Semi- to perman Regularly inunda Seasonally inunda Seasonally satura or double check and average.  Inces observed  point source (nor filling/grading road bed/RR trace dredging	ain (1) //lake and other human use (1) //lake and other human
10	34.5	Metric 4. Habitat Alteration and	d Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check an None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign sco 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 of the second of	erage.  Inces observed shrub/sapling ren herbaceous/aqua sedimentation	
sı	34.5 ubtotal this pa	✓ selective cutt     woody debris     toxic pollutan e	s removal farming	ent

Site: FirstEn	ergy Holloway-Knox 138kV Rate	r(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/15/2018
34.5	5			w-bao-05/15/2018-
subtotal first	t page			
0 34.5	Metric 5. Special Wetla	nds		
max 10 pts. subtota	<b></b>	iido.		
·	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetland-	-unrestricted hy	drology (10)	
	Lake Erie coastal/tributary wetland-			
	Lake Plain Sand Prairies (Oak Ope	enings) (10)		
	Relict Wet Prairies (10)			
	Known occurrence state/federal thr			
	Significant migratory songbird/wate Category 1 Wetland. See Question			
	Outogory i Welland. See Question	i i Qualitativo i	taing (10)	
6 40.5	Metric 6. Plant commur	nities int	terenersion micro	otonography
		-	Community Cover Scale	otopograpity.
max 20 pts. subtota	Score all present using 0 to 3 scale.	vegetation 0		(0.2471 acres) contiguous area
	1 Aquatic bed	1	Present and either comprises	
	1 Emergent		vegetation and is of modera	
	1 Shrub		significant part but is of low	
	Forest	2	Present and either comprises	
	Mudflats		_	ate quality or comprises a small
	Open water	3	part and is of high quality	figent part or more of watland's
	Other 6b. horizontal (plan view) Interspersion.	3	vegetation and is of high qu	ficant part, or more, of wetland's
	Select only one.		vogotation and to or riight qu	adity
	High (5)	Narrative D	Description of Vegetation Qual	ity
	Moderately high(4)	low	Low spp diversity and/or pred	
	Moderate (3)	<del></del>	disturbance tolerant native	•
	Moderately low (2)	mod	Native spp are dominant com	· -
	Low (1) None (0)		_	disturbance tolerant native spp
	6c. Coverage of invasive plants. Refer		moderately high, but gener	pecies diversity moderate to
	to Table 1 ORAM long form for list. Add		threatened or endangered	, ,
	or deduct points for coverage	high	A predominance of native sp	
	Extensive >75% cover (-5)			native spp absent or virtually
	Moderate 25-75% cover (-3)			sity and often, but not always,
	✓ Sparse 5-25% cover (-1)		the presence of rare, threat	tened, or endangered spp
	Nearly absent <5% cover (0)	Manual flat and	d Onen Weter Class Ovelity	
	Absent (1) 6d. Microtopography.	o Nucriat and	d Open Water Class Quality Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	
	2 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	·
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or mor	
	Standing dead >25cm (10in) dbh			
	1 Amphibian breeding pools	Microtopog	graphy Cover Scale	
		0	Absent	
		1	Present very small amounts	or if more common
			of marginal quality	a but not of bight == t
loditica O		2	Present in moderate amounts	=
lodified 2		3	quality or in small amounts  Present in moderate or great	
		3	and of highest quality	or arribulits
40 5 GRA	ND TOTAL (max 100 pts)		and or mynost quanty	

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/15/2018
1	1	Metric 1. Wetland Area (size).	w-bao-05/15/2018-07
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
7	8	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  ✓ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo  ✓ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
8	16	Metric 3. Hydrology.	
max 30 pts.	subtotal	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)  Part of wetland/up Part of wetland/up  3d. Duration inundation/satu Semi- to permane Regularly inundat  3c. Semi- to permane Regularly inundat Seasonally inundat	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) tted in upper 30cm (12in) (1) stormwater)
7	23	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed Annual of the structure o	
SU	23 ubtotal this pa	Recovering (3) Recent or no recovery (1)	

Site: FirstEnergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio **Date:** 5/15/2018 w-bao-05/15/2018-07 23 subtotal first page 0 Metric 5. Special Wetlands. Check all that apply and score as indicated. max 10 pts subtotal 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) 24 Metric 6. Plant communities, interspersion, microtopography. 6a. Wetland Vegetation Communities. **Vegetation Community Cover Scale** max 20 pts. subtotal Absent or comprises <0.1ha (0.2471 acres) contiguous area Score all present using 0 to 3 scale. Aquatic bed Present and either comprises small part of wetland's Emergent vegetation and is of moderate quality, or comprises a Shrub significant part but is of low quality 2 Present and either comprises significant part of wetland's Forest Mudflats vegetation and is of moderate quality or comprises a small Open water part and is of high quality Other 3 Present and comprises significant part, or more, of wetland's 6b. horizontal (plan view) Interspersion. vegetation and is of high quality Select only one. High (5) Narrative Description of Vegetation Quality Moderately high(4) Low spp diversity and/or predominance of nonnative or Moderate (3) disturbance tolerant native species Moderately low (2) mod Native spp are dominant component of the vegetation, Low (1) although nonnative and/or disturbance tolerant native spp None (0) can also be present, and species diversity moderate to 6c. Coverage of invasive plants. Refer moderately high, but generally w/o presence of rare to Table 1 ORAM long form for list. Add threatened or endangered spp or deduct points for coverage A predominance of native species, with nonnative spp high Extensive >75% cover (-5) and/or disturbance tolerant native spp absent or virtually Moderate 25-75% cover (-3) absent, and high spp diversity and often, but not always, Sparse 5-25% cover (-1) the presence of rare, threatened, or endangered spp Nearly absent <5% cover (0) Absent (1) **Mudflat and Open Water Class Quality** 6d. Microtopography. 0 Absent < 0.1ha (0.247 acres) Score all present using 0 to 3 scale. Low 0.1 to <1ha (0.247 to 2.47 acres) Vegetated hummucks/tussucks 2 Moderate 1 to <4ha (2.47 to 9.88 acres) Coarse woody debris >15cm (6in) 3 High 4ha (9.88 acres) or more Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Absent 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 Category 1 3 Present in moderate or greater amounts and of highest quality GRAND TOTAL (max 100 pts)

Site: F	irstEne	gy Holloway-Knox 138kV	Rater(s): B.Otto, T. Qualic	<b>Date:</b> 5/15/2	2018
0	0			w-bao-05/15	/2018-06
0	0	Metric 1. Wetland	` '		
max 6 pts.	subtotal	Select one size class and assign social policy in the size class and assign social policy in the size class and assign social policy in the size class acres (20.2 to < 10 to <25 acres (4 to <10.0 acres (1.2 to <40.0 acres (0.12 to <40.0 acres (0.04 to <0.1 acres (0.04ha) (0 pts)	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) I.2ha) (2pts) <0.12ha) (1 pt)		
7	7	Metric 2. Upland bu	uffers and surroundir	g land use.	
max 14 pts.	subtotal	WIDE. Buffers average 5  WIDE. Buffers average 5  MEDIUM. Buffers average 5  NARROW. Buffers average 5  VERY NARROW. Buffers average 5  VERY LOW. Date of surrounding land us 5  VERY LOW. 2nd growth 1  WODERATELY HIGH. Re	Select only one and assign score. Do 0m (164ft) or more around wetland perion (25m to <50m (82 to <164ft) around we ge 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetland e. Select one or double check and average for older forest, prairie, savannah, wildlifts), shrubland, young second growth for esidential, fenced pasture, park, conserpen pasture, row cropping, mining, cor	meter (7) etland perimeter (4) wetland perimeter (1) perimeter (0) rage. e area, etc. (7) est. (5) vation tillage, new fallow field. (3)	
15.5	22.5	Metric 3. Hydrology	<b>y.</b>		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Vother groundwater (3)  Precipitation (1)  Seasonal/Intermittent surf  Perennial surface water (la  3c. Maximum water depth. Select of Solution (3)  0.4 to 0.7m (15.7 to 27.6 in V)  Volume 15.7 in (1)	ace water (3) ake or stream) (5) only one and assign score.  1) (2) gic regime. Score one or double check	ponnectivity. Score all that apply.  100 year floodplain (1) Between stream/lake and other hun Part of wetland/upland (e.g. forest), Part of riparian or upland corridor (1 uration inundation/saturation. Score one Semi- to permanently inundated/sat Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm and average.  point source (nonstormwater) filling/grading road bed/RR track dredging other_former_mining	complex (1) b or dbl check turated (4)
9	31.5	Metric 4. Habitat A	Iteration and Develor	ment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select or Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or	ne or double check and average.  nly one and assign score.  double check and average.		1
SU	31.5	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	

Site: FirstEnergy Holloway-Knox 138kV Rate	<b>r(s):</b> B.Otto	o, T. Qualio	<b>Date:</b> 5/15/2018
24.5			w-bao-05/15/2018
31.5			
subtotal first page			
O 31.5 Metric 5. Special Wetla	nde		
inctric 5. Opecial wetla	iius.		
max 10 pts. subtotal 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 by	drology (10)	
Lake Erie coastal/tributary wetland			
Lake Plain Sand Prairies (Oak Ope		<b>37</b> ( )	
Relict Wet Prairies (10)			
Known occurrence state/federal th		• , , ,	
Significant migratory songbird/wate Category 1 Wetland. See Questio			
Category I Wetland. See Questio	II I Qualitative r	valing (-10)	
1 32.5 Metric 6. Plant commun	nities int	erspersion micro	otonogranhy
max 20 pts. subtotal 6a. Wetland Vegetation Communities.	-	Community Cover Scale	otopograpny.
Score all present using 0 to 3 scale.	0		(0.2471 acres) contiguous area
Aquatic bed	1	Present and either comprises	
1 Emergent		vegetation and is of modera	
Shrub		significant part but is of low	
Forest Mudflats	2	Present and either comprises	s significant part of wetland's ate quality or comprises a smal
Open water		part and is of high quality	ate quality of comprises a small
Other	3		icant part, or more, of wetland's
6b. horizontal (plan view) Interspersion.		vegetation and is of high qu	
Select only one.			
High (5)		escription of Vegetation Qual	
Moderately high(4)  Moderate (3)	low	Low spp diversity and/or pred disturbance tolerant native	
Moderately low (2)	mod	Native spp are dominant com	1.
Low (1)			disturbance tolerant native spp
✓ None (0)			pecies diversity moderate to
6c. Coverage of invasive plants. Refer		moderately high, but general	
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered s  A predominance of native spe	
Extensive >75% cover (-5)	· · · · · ·		native spp absent or virtually
Moderate 25-75% cover (-3)			sity and often, but not always,
✓ Sparse 5-25% cover (-1)		the presence of rare, threat	ened, or endangered spp
Nearly absent <5% cover (0) Absent (1)	Mudflot on	d Onen Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	
Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	9.88 acres)
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	e
Standing dead >25cm (10in) dbh	Microtones	wanhy Cayar Saala	
1 Amphibian breeding pools	<u>Microtopog</u> 0	Absent	
	1	Present very small amounts of	or if more common
		of marginal quality	
	2	Present in moderate amounts	_
or 2 gray zone		quality or in small amounts	
	3	Present in moderate or great	er amounts
32.5 GRAND TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> B.Otto, T. Qualio	<b>Date:</b> 5/15/2018
4	4		w-bao-05/15/2018-05
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
7	8	Metric 2. Upland buffers and surrounding la	and use.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not dot  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (  ✓ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland very NARROW. Buffers average <10m (<32ft) around wetland perime 2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation the HIGH. Urban, industrial, open pasture, row cropping, mining, construction.	(7) perimeter (4) d perimeter (1) eter (0) etc. (7) tillage, new fallow field. (3)
10.5	18.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3d. Duration  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  ✓ Re  ✓ 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 av  None or none apparent (12)  Recovered (7)	oint source (nonstormwater)
	0.4	Recent or no recovery (1) dike weir road	ing/grading ad bed/RR track edging her <u>former mining</u>
5.5	24	Metric 4. Habitat Alteration and Developme	nt.
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3)  Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.	
sı	24 ubtotal this pa	Recovering (3) Recent or no recovery (1)  Recovering (3)  Recent or no recovery (1)  Recovering (3)  Recent or no recovery (1)  Recovering (3)  Recovering (3)  Recovering (3)  Recovering (3)  Recent or no recovery (1)  Recovering (3)  Recovering (3)  Recovering (3)  Recovering (4)  Recovering (4)  Recovering (5)  Recovering (5)  Recovering (6)  Recovering (6)  Recovering (7)  Recove	rub/sapling removal erbaceous/aquatic bed removal edimentation edging rming trient enrichment

Site: FirstEnergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio **Date:** 5/15/2018 w-bao-05/15/2018-05 24 subtotal first page 24 0 Metric 5. Special Wetlands. Check all that apply and score as indicated. max 10 pts subtotal 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) Metric 6. Plant communities, interspersion, microtopography. 6a. Wetland Vegetation Communities. **Vegetation Community Cover Scale** max 20 pts. subtotal Absent or comprises <0.1ha (0.2471 acres) contiguous area Score all present using 0 to 3 scale. Aquatic bed Present and either comprises small part of wetland's Emergent vegetation and is of moderate quality, or comprises a Shrub significant part but is of low quality 2 Present and either comprises significant part of wetland's Forest Mudflats vegetation and is of moderate quality or comprises a small Open water part and is of high quality Other 3 Present and comprises significant part, or more, of wetland's 6b. horizontal (plan view) Interspersion. vegetation and is of high quality Select only one. High (5) Narrative Description of Vegetation Quality Moderately high(4) Low spp diversity and/or predominance of nonnative or Moderate (3) disturbance tolerant native species Moderately low (2) mod Native spp are dominant component of the vegetation, Low (1) although nonnative and/or disturbance tolerant native spp None (0) can also be present, and species diversity moderate to 6c. Coverage of invasive plants. Refer moderately high, but generally w/o presence of rare to Table 1 ORAM long form for list. Add threatened or endangered spp or deduct points for coverage A predominance of native species, with nonnative spp high Extensive >75% cover (-5) and/or disturbance tolerant native spp absent or virtually Moderate 25-75% cover (-3) absent, and high spp diversity and often, but not always, Sparse 5-25% cover (-1) the presence of rare, threatened, or endangered spp Nearly absent <5% cover (0) Absent (1) **Mudflat and Open Water Class Quality** 6d. Microtopography. 0 Absent < 0.1ha (0.247 acres) Score all present using 0 to 3 scale. Low 0.1 to <1ha (0.247 to 2.47 acres) Vegetated hummucks/tussucks 2 Moderate 1 to <4ha (2.47 to 9.88 acres) Coarse woody debris >15cm (6in) 3 High 4ha (9.88 acres) or more Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Absent 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 Category 1 3 Present in moderate or greater amounts and of highest quality GRAND TOTAL (max 100 pts)

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/16/2018
			w-tmq-5/16/2018-02
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
3	5	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow the first park industrial, open pasture, row cropping, mining, construction. (1)	
15	20	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Part of wetland/u  Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
7	27	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) ✓ Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  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.  Very good (6) ✓ mowing Grazing Grazing Herbaceous/aqua Sedimentation Aredging	
SI	27 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	ent

DRAM v. 5.0 Field	Form Quantitative Rating			Wetland NH
Site: FirstEn	ergy Holloway-Knox 138kV Ra	iter(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/16/2018
27	1			w-tmq-5/16/2018-
subtotal first	<b>d</b> page			
0 27	Metric 5. Special Wet	lande		
max 10 pts. subtotal	Check all that apply and score as indicate			
·	Bog (10)			
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5)			
	Lake Erie coastal/tributary wetl	and-unrestricted hyd	drology (10)	
	Lake Erie coastal/tributary wetl		logy (5)	
	Lake Plain Sand Prairies (Oak	Openings) (10)		
	Relict Wet Prairies (10)	al throatoned or and	angered energies (10)	
	Known occurrence state/federa Significant migratory songbird/v			
	Category 1 Wetland. See Que			
	<b>1</b>		9 ( 1 5 )	
0   27	Metric 6. Plant comm	unities int	erspersion micro	tonography
may 20 pta subtotal	6a. Wetland Vegetation Communities.	-	Community Cover Scale	topograpily.
max 20 pts. subtotal	Score all present using 0 to 3 scale.	vegetation 0	Absent or comprises <0.1ha (0	) 2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises	
	1 Emergent		vegetation and is of moderat	
	Shrub		significant part but is of low	
	Forest	2	Present and either comprises	-
	Mudflats		_	e quality or comprises a small
	Open water		part and is of high quality	
	Other  6b. horizontal (plan view) Interspersion.	3	Present and comprises signific vegetation and is of high qua	
	Select only one.		vegetation and is of high qua	uity
	High (5)	Narrative D	escription of Vegetation Qualit	v
	Moderately high(4)	low	Low spp diversity and/or predo	
	Moderate (3)		disturbance tolerant native s	
	Mandametali (a)	mod	Native spp are dominant comp	onent of the vegetation,
	Moderately low (2)	11100		
	✓ Low (1)			sturbance tolerant native spp
	✓ Low (1) None (0)	ou	can also be present, and spe	ecies diversity moderate to
	Low (1) None (0)  6c. Coverage of invasive plants. Refer	53	can also be present, and spe moderately high, but general	ecies diversity moderate to ly w/o presence of rare
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		can also be present, and spe moderately high, but general threatened or endangered sp	ecies diversity moderate to ly w/o presence of rare op
	Low (1) None (0)  6c. Coverage of invasive plants. Refer	high	can also be present, and spe moderately high, but general threatened or endangered sp A predominance of native spec	ecies diversity moderate to ly w/o presence of rare op
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage		can also be present, and spe moderately high, but general threatened or endangered sp	ecies diversity moderate to ly w/o presence of rare op- cies, with nonnative spp lative spp absent or virtually
	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)		can also be present, and spe moderately high, but general threatened or endangered sp A predominance of native spec and/or disturbance tolerant r	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp lative spp absent or virtually by and often, but not always,
	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)	high	can also be present, and spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant rabsent, and high spp diversiting the presence of rare, threatened.	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp lative spp absent or virtually by and often, but not always,
	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)	high Mudflat and	can also be present, and spenderately high, but general threatened or endangered spenderately A predominance of native spenderately and/or disturbance tolerant reabsent, and high spp diversite the presence of rare, threately topen Water Class Quality	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp lative spp absent or virtually by and often, but not always,
	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.	high  Mudflat and 0	can also be present, and spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant reabsent, and high spp diversithe presence of rare, threately absent <0.1ha (0.247 acres)	ecies diversity moderate to ly w/o presence of rare opposes, with nonnative spposes, with nonnative spposes, with species, with nonnative spposes, with nonnative spposes, active spp absent or virtually by and often, but not always, ned, or endangered spp
	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.	high  Mudflat and  0 1	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant reabsent, and high spp diversite the presence of rare, threately also be spenderately dependerately depe	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp sative spp absent or virtually by and often, but not always, ned, or endangered spp
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks	high  Mudflat and  0  1  2	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately high spenderate and/or disturbance tolerant reabsent, and high spp diversite the presence of rare, threately high spenderate high spenderate spenderately high spenderate high spenderate spend	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp sative spp absent or virtually by and often, but not always, ned, or endangered spp
	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.	high  Mudflat and  0  1 s 2 Sin) 3	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant reabsent, and high spp diversite the presence of rare, threately also be spenderately dependerately depe	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp sative spp absent or virtually by and often, but not always, ned, or endangered spp
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)	high  Mudflat and  0  1 s 2 Sin) sh	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately high spenderate and/or disturbance tolerant reabsent, and high spp diversite the presence of rare, threately high spenderate high spenderate spenderately high spenderate high spenderate spend	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp sative spp absent or virtually by and often, but not always, ned, or endangered spp
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	high  Mudflat and  0  1  2  Sin)  3  oh  Microtopog  0	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant respenderately absent, and high spp diversifute presence of rare, threately absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9 High 4ha (9.88 acres) or more praphy Cover Scale  Absent	ecies diversity moderate to ly w/o presence of rare op posies, with nonnative spp sative spp absent or virtually ty and often, but not always, ned, or endangered spp
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	high  Mudflat and  0  1  2  Sin)  Microtopog	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant massent, and high spp diversified the presence of rare, threately absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9 High 4ha (9.88 acres) or more present very small amounts or	ecies diversity moderate to ly w/o presence of rare op posies, with nonnative spp sative spp absent or virtually ty and often, but not always, ned, or endangered spp
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	high  Mudflat and  0  1  2  Sin) 3  oh  Microtopog 0 1	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant mabsent, and high spp diversified the presence of rare, threately also be the presence of th	ecies diversity moderate to ly w/o presence of rare opposies, with nonnative spposies, with nonn
	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	high  Mudflat and  0  1  2  Sin)  3  oh  Microtopog  0	can also be present, and spermoderately high, but general threatened or endangered special A predominance of native speciand/or disturbance tolerant in absent, and high spp diversified the presence of rare, threated to the presence of rare, threated to the presence of t	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp lative spp absent or virtually by and often, but not always, ned, or endangered spp  Tacres) 88 acres)  Tif more common but not of highest
tegory 1	Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	high  Mudflat and  0  1  2  Sin) 3  oh  Microtopog 0 1	can also be present, and spenderately high, but general threatened or endangered spenderately high, but general threatened or endangered spenderately and/or disturbance tolerant mabsent, and high spp diversified the presence of rare, threately also be the presence of th	ecies diversity moderate to ly w/o presence of rare op cies, with nonnative spp lative spp absent or virtually ty and often, but not always, ned, or endangered spp  Tacres) 88 acres)  Tif more common but not of highest of highest quality

Site: Fi	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/16/2018
4	4	<b>1</b>	w-tmq-5/16/2018-01
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
3	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
11	15	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  ✓ Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  100 year floodplair  Part of wetland/upl  ✓ Part of riparian or undation/saturation in undation/saturation.  Semi- to permaner  Regularly inundate	n (1)  ake and other human use (1) land (e.g. forest), complex (1) upland corridor (1) ration. Score one or dbl check. ntly inundated/saturated (4) ed/saturated (3) tted (2) ted in upper 30cm (12in) (1)  stormwater)
7	22	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  Check all disturbances observed  Check all disturbances observed	
ļ	22 btotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1)	ic bed removal

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-11
	( <b>s):</b> B.Otto	, T. Qualio	<b>Date:</b> 5/16/2018
subtotal first page			w-tmq-5/16/2018-01
0 22 Metric 5. Special Wetlan	ds.		
max 10 pts. subtotal 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-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	inrestricted hydro estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
0 22 Metric 6. Plant communi	ities, int	erspersion, microto	opography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  Emergent Shrub Forest Mudflats Open water Other 6b. horizontal (plan view) Interspersion.  Select only one.  High (5)	0 1 2 3 Narrative D	Absent or comprises <0.1ha (0.2c) Present and either comprises sm vegetation and is of moderate of significant part but is of low quality Present and either comprises significant part but is of low quality Present and either comprises significant and is of moderate of part and is of high quality Present and comprises significant vegetation and is of high quality  escription of Vegetation Quality	all part of wetland's quality, or comprises a ality nificant part of wetland's quality or comprises a small at part, or more, of wetland's
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)	mod	Low spp diversity and/or predomi disturbance tolerant native specific Native spp are dominant compon although nonnative and/or disturbance tolerant, and specific moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant native	ent of the vegetation, irbance tolerant native spp es diversity moderate to w/o presence of rare  s, with nonnative spp ve spp absent or virtually
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	absent, and high spp diversity a the presence of rare, threatene  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	d, or endangered spp
Standing dead >25cm (10in) dbh Amphibian breeding pools  ategory 1	0 1 2	raphy Cover Scale  Absent  Present very small amounts or if of marginal quality  Present in moderate amounts, but quality or in small amounts of heads.	ut not of highest ighest quality
GRAND TOTAL (max 100 pts)	3	Present in moderate or greater and of highest quality	mounts

Site: FirstEnergy Holloway-Knox 138kV		rgy Holloway-Knox 138kV	Rater(s): T. Qualio, J.Freer		<b>Date:</b> 5/18/2018
0	0	<u> </u>		[	w-tmq-5/18/2018-01
0	0	Metric 1. Wetland A	` '	•	
max 6 pts.	subtotal	Select one size class and assign scores (>20.2ha) (6 pts 25 to <50 acres (10.1 to <10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4h to <10. 3 to <3 acres (0.12 to <1 to <10 to <0.3 acres (0.04 to <10 to <0.1 acres (0.04ha) (0 pts )	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)		
4	4	Metric 2. Upland bu	uffers and surround	ding land use.	
max 14 pts.	subtotal	MEDIUM. Buffers average  ✓ NARROW. Buffers average  VERY NARROW. Buffers  2b. Intensity of surrounding land use  VERY LOW. 2nd growth of  LOW. Old field (>10 years  ✓ MODERATELY HIGH. Re	Om (164ft) or more around wetland pe 25m to <50m (82 to <164ft) arounge 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetla	perimeter (7) and wetland perimeter (4) und wetland perimeter (1) and perimeter (0) average. ildlife area, etc. (7) a forest. (5) aservation tillage, new fall	
7	11	Metric 3. Hydrology	/.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (la Perennial surface water (la Sc. Maximum water depth. Select of Source (15.7 to 15.7	ace water (3) ake or stream) (5) only one and assign score. all (2) gic regime. Score one or double che	Part of wetland/u Part of riparian o Duration inundation/sat Semi- to perman Regularly inunda Seasonally inund Seasonally satur eck and average.	ain (1) //ake and other human use (1) upland (e.g. forest), complex (1) ur upland corridor (1) turation. Score one or dbl check. uently inundated/saturated (4) uted/saturated (3) dated (2) uted in upper 30cm (12in) (1)
6	17	Recovering (3) Recent or no recovery (1)	tile dike weir stormwater input	filling/grading road bed/RR trac dredging other	xk
max 20 pts.	subtotal	Metric 4. Habitat A  4a. Substrate disturbance. Score o		opment.	
		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select on Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or	ly one and assign score.		
SI	17	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbances observed wowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rer herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed removal

ORAM v. 5.0 Field Form Quantitative Rating		Wetla	nd NH-12
, and the second	( <b>s):</b> T. Qua	lio, J.Freer Date: 5/18/	2018
17 subtotal first page		w-tmq-5/18	/2018-01
0 17 Metric 5. Special Wetlan	ds.		
max 10 pts. subtotal 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-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	nrestricted hyd estricted hydrol ings) (10) atened or enda fowl habitat or	ngered species (10) usage (10)	
0 17 Metric 6. Plant communi	ities, inte	erspersion, microtopography	<b>y.</b>
max 20 pts. subtotal  6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  Emergent Shrub Forest Mudflats Open water Other 6b. horizontal (plan view) Interspersion.  Select only one.  High (5) Moderately high(4) 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 (-5)	2	Absent or comprises <0.1ha (0.2471 acres) contigue.  Present and either comprises small part of wetland vegetation and is of moderate quality, or comprise significant part but is of low quality.  Present and either comprises significant part of wet vegetation and is of moderate quality or comprise part and is of high quality.  Present and comprises significant part, or more, of vegetation and is of high quality.  Present and comprises significant part, or more, of vegetation and is of high quality.  Scription of Vegetation Quality.  Low spp diversity and/or predominance of nonnative disturbance tolerant native species.  Native spp are dominant component of the vegetatical although nonnative and/or disturbance tolerant native and/or presence of rathreatened or endangered spp.  A predominance of native species, with nonnative spend, and high spp diversity and often, but not a absent, and high spp diversity and often, but not a series of the s	es a small wetland's e or fative spp atte to are spp
Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Category 1  GRAND TOTAL (max 100 pts)	0 1 2 3	the presence of rare, threatened, or endangered state of the presence of rare, threatened, or endangered state of the presence of rare, threatened, or endangered state of the present of the control of the present of	-

Site: F	irstEne	gy Holloway-Knox 138kV Rate	r(s): T. Qualio, J.Freer	<b>Date:</b> 5/18/2018
				w-tmq-5/18/2018-02
0	0	Metric 1. Wetland Area (	(size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (9 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)  ✓ <0.1 acres (0.04ha) (0 pts)	ts) ots)	
4	4	Metric 2. Upland buffers	and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select of WIDE. Buffers average 50m (164ft MEDIUM. Buffers average 25m to VARROW. Buffers average 10m to VERY NARROW. Buffers average 2b. Intensity of surrounding land use. Select VERY LOW. 2nd growth or older for LOW. Old field (>10 years), shruble MODERATELY HIGH. Residential.	nly one and assign score. Do not double check. c) or more around wetland perimeter (7) <50m (82 to <164ft) around wetland perimeter (4) o <25m (32ft to <82ft) around wetland perimeter (1) <10m (<32ft) around wetland perimeter (0)	
7	11	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water  Perennial surface water (lake or str.)  3c. Maximum water depth. Select only one at solvent so	Part of wetland/u Part of riparian or eam) (5) and assign score.  3d. Duration inundation/sat Semi- to permane Regularly inunda Seasonally inund V Seasonally satura	uin (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
5	16	Metric 4. Habitat Alterat	ion and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or dou  None or none apparent (4)  Recovered (3)  Recovering (2)  ✓ Recent or no recovery (1)  4b. Habitat development. Select only one an  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 c  None or none apparent (9)  Recovered (6)	heck and average.  heck and average.  k all disturbances observed mowing shrub/sapling ren	
SU	16	Recent or no recovery (1)	grazing herbaceous/aqua clearcutting selective cutting dredging woody debris removal toxic pollutants herbaceous/aqua sedimentation dredging farming nutrient enrichment	

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): T. Qua	alio. J.Freer	<b>Date:</b> 5/18/2018
<b>5110.</b> 1		igy rieneway railex recit	rtator(o): ca	, 0.1.1001	<b>Dato:</b> 0/10/2010
	16				w-tmq-5/18/2018-
	16				
su	ubtotal first pa	ge			
	16	Matria E. Omasial VA	latlanda		
,	10	Metric 5. Special W			
nax 10 pts.	subtotal	Check all that apply and score as ind	icated.		
		Bog (10) Fen (10)			
		Old growth forest (10)			
		Mature forested wetland (5			
		Lake Erie coastal/tributary			
		Lake Erie coastal/tributary  Lake Plain Sand Prairies (	· ·	ogy (5)	
		Relict Wet Prairies (10)	oun openinge, (10)		
		Known occurrence state/fe		• • • •	
		Significant migratory songly			
		Category 1 Wetland. See	Question 1 Qualitative R	ating (-10)	
3	19	Metric 6. Plant com	munities int	arenarsian micro	tonography
20 pto		6a. Wetland Vegetation Communitie	•	Community Cover Scale	hopograpity.
nax 20 pts.	subtotal	Score all present using 0 to 3 scale.	os. <u>vegetation</u>	Absent or comprises <0.1ha (	0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises	
		1 Emergent		vegetation and is of modera	
		Shrub Forest	2	significant part but is of low Present and either comprises	
		Mudflats	2	The state of the s	te quality or comprises a small
		Open water		part and is of high quality	io quanty or comprised a circum
		Other	_ 3	Present and comprises signific	
		6b. horizontal (plan view) Interspersi	on.	vegetation and is of high qua	ality
		Select only one. High (5)	Narrative D	escription of Vegetation Qualit	av.
		Moderately high(4)	low	Low spp diversity and/or predo	
		Moderate (3)		disturbance tolerant native s	
		Moderately low (2)	mod	Native spp are dominant comp	=
		✓ Low (1) None (0)		can also be present, and spe	isturbance tolerant native spp
		6c. Coverage of invasive plants. Re	fer	moderately high, but genera	•
		to Table 1 ORAM long form for list.		threatened or endangered s	
		and all directions by the familiar consequence			aliana i sultita ia anala atti sa labara
		or deduct points for coverage	high	A predominance of native spe	
		Extensive >75% cover (-5)	_	and/or disturbance tolerant r	native spp absent or virtually
		Extensive >75% cover (-5) Moderate 25-75% cover (-3)	_		native spp absent or virtually ty and often, but not always,
		Extensive >75% cover (-5)	3)	and/or disturbance tolerant rabsent, and high spp diversi	native spp absent or virtually ty and often, but not always,
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Vearly absent <5% cover ( Absent (1)	0)  Mudflat and	and/or disturbance tolerant r absent, and high spp diversi the presence of rare, threate	native spp absent or virtually ty and often, but not always,
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Vearly absent <5% cover ( Absent (1)  6d. Microtopography.	Mudflat and	and/or disturbance tolerant r absent, and high spp diversi the presence of rare, threate Open Water Class Quality Absent <0.1ha (0.247 acres)	native spp absent or virtually ty and often, but not always, ened, or endangered spp
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.	Mudflat and 0 1	and/or disturbance tolerant r absent, and high spp diversi the presence of rare, threate Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47	native spp absent or virtually ty and often, but not always, ened, or endangered spp
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Vearly absent <5% cover ( Absent (1)  6d. Microtopography.	Mudflat and 0 1 1 ucks 2	and/or disturbance tolerant r absent, and high spp diversi the presence of rare, threate Open Water Class Quality Absent <0.1ha (0.247 acres)	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres) 9.88 acres)
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c  Standing dead >25cm (10i	Mudflat and 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the presence of the pres	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres) 9.88 acres)
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c	Mudflat and 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the presence of the pres	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres) 9.88 acres)
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c  Standing dead >25cm (10i	Mudflat and 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the presence of rare, and the presence of	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres)  9.88 acres)
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c  Standing dead >25cm (10i	Mudflat and 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the present <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 0.247 to 0.2	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres)  9.88 acres)
		Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c  Standing dead >25cm (10i	Mudflat and 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the presence of rare, and the presence of	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres) 9.88 acres)  r if more common
tegor	~y 1	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover ( Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tuss  Coarse woody debris >15c  Standing dead >25cm (10i	Mudflat and 0 1 1 2 2 mm (6in) 3 ml dbh Microtopog 0 1	and/or disturbance tolerant rabsent, and high spp diversion the presence of rare, threated the present <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 0.247 to 0.2	native spp absent or virtually ty and often, but not always, ened, or endangered spp  7 acres)  9.88 acres)  r if more common  but not of highest of highest quality

2	2	ı	
		Metric 1. Wetland Area (size).	w-tmq-5/18/2018-03
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
4	6	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
19	25	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  Other groundwater (3)  Part of wetland/up  Part of riparian or  Semi- to permane  Regularly inundate  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ted in upper 30cm (12in) (1)
7	32	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) ✓ Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Recent or no recovery (1)  Authorized Apparent Appar	tic bed removal

## Modified 2

38 GRAND TOTAL (max 100 pts)

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

Site: FirstEnergy Holloway-Knox 138kV		gy Holloway-Knox 138kV	Rater(s): T. Qualio, J.Freer		<b>Date:</b> 5/18/2018
1	1	Metric 1. Wetland	Area (size).	[	w-tmq-5/18/2018-05
max 6 pts.	subtotal	Select one size class and assign sc  >50 acres (>20.2ha) (6 pt  25 to <50 acres (10.1 to <  10 to <25 acres (4 to <10.  3 to <10 acres (1.2 to <4h  0.3 to <3 acres (0.12 to <  0.1 to <0.3 acres (0.04 to  <0.1 acres (0.04ha) (0 pts)	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
4	5	Metric 2. Upland be	uffers and surround	ing land use.	
max 14 pts.	subtotal	WIDE. Buffers average 5 MEDIUM. Buffers average  ✓ NARROW. Buffers average VERY NARROW. Buffers  2b. Intensity of surrounding land us VERY LOW. 2nd growth LOW. Old field (>10 year  ✓ MODERATELY HIGH. Re	Select only one and assign score. If Om (164ft) or more around wetland ple 25m to <50m (82 to <164ft) around ge 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetla e. Select one or double check and a corrolder forest, prairie, savannah, will s), shrubland, young second growth esidential, fenced pasture, park, conspen pasture, row cropping, mining, or	erimeter (7) I wetland perimeter (4) nd wetland perimeter (1) nd perimeter (0) average. dlife area, etc. (7) forest. (5) servation tillage, new falle	
12	17	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  ✓ Seasonal/Intermittent surful Perennial surface water (I)  3c. Maximum water depth. Select of Solution (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in)  ✓ <0.4m (<15.7in) (1)	at apply.  ace water (3) ake or stream) (5) only one and assign score.  a) (2) gic regime. Score one or double che	Part of wetland/u Part of riparian o Duration inundation/sat Semi- to perman Regularly inunda Seasonally inunda Seasonally saturation	ain (1) //ake and other human use (1) //ake and other human use (1) //ake and other human use (1) //apland (e.g. forest), complex (1) r upland corridor (1) //arration. Score one or dbl check. //arration. Score
7	24	Metric 4 Habitat Δ	Iteration and Develo		
max 20 pts.	subtotal	4a. Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select or Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one of Recovered (6) Recovering (3)	ne or double check and average.  nly one and assign score.  r double check and average.  Check all disturbances observed mowing grazing	shrub/sapling ren	
S.I.	24	Recent or no recovery (1)	<ul><li>✓ clearcutting</li><li>✓ selective cutting</li><li>woody debris removal</li><li>toxic pollutants</li></ul>	sedimentation dredging farming nutrient enrichme	ent

ORAM v. 5	5.0 Field F	orm Quantitative Rating			Wetland NH-15
			Rater(s): T. Qu	alio, J.Freer	<b>Date:</b> 5/18/2018
	0.4				w-tmq-5/18/2018-05
	24				
	btotal first pa	ge			
0	24	Metric 5. Special We	etlands.		
max 10 pts.	subtotal	Check all that apply and score as indic Bog (10)	ated.		
		Fen (10)			
		Old growth forest (10)			
		Mature forested wetland (5)			
		Lake Erie coastal/tributary w		=	
		Lake Erie coastal/tributary w Lake Plain Sand Prairies (O		ology (5)	
		Relict Wet Prairies (10)	ak Operlings) (10)		
		Known occurrence state/fed	eral threatened or end	angered species (10)	
		Significant migratory songbi			
		Category 1 Wetland. See Q	uestion 1 Qualitative F	Rating (-10)	
3	27	Madda O. Blandan			4
0	21	Metric 6. Plant com	•	erspersion, micro	topograpny.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities		Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.1)  Present and either comprises s	
		Aquatic bed 1 Emergent	1	vegetation and is of moderate	
		1 Shrub		significant part but is of low q	
		Forest	2	Present and either comprises s	
		Mudflats		vegetation and is of moderate	e quality or comprises a small
		Open water		part and is of high quality	and mank an area of welleredle
		Other6b. horizontal (plan view) Interspersion	3	Present and comprises signification vegetation and is of high qual	•
		Select only one.		vogotation and is of high qual	ity
		High (5)	Narrative D	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predor	
		Moderate (3)		disturbance tolerant native sp	
		✓ Moderately low (2) Low (1)	mod	Native spp are dominant composition although nonnative and/or dis	=
		None (0)		can also be present, and spe	
		6c. Coverage of invasive plants. Refe	er	moderately high, but generall	
		to Table 1 ORAM long form for list. Ac		threatened or endangered sp	
		or deduct points for coverage	high	A predominance of native spec	
		Extensive >75% cover (-5) Moderate 25-75% cover (-3)		and/or disturbance tolerant na absent, and high spp diversity	
		✓ Sparse 5-25% cover (-1)		the presence of rare, threater	
		Nearly absent <5% cover (0)			
		Absent (1)		d Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	norma)
		Score all present using 0 to 3 scale.  Vegetated hummucks/tussu		Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.	
		Coarse woody debris >15cm		High 4ha (9.88 acres) or more	<u> </u>
		Standing dead >25cm (10in)		,	
		Amphibian breeding pools		raphy Cover Scale	
			0	Absent Procent years amall amounts or	if more common
			1	Present very small amounts or of marginal quality	II ITIOTE COMMON
			2	Present in moderate amounts,	but not of highest
ategor	v 1			quality or in small amounts of	=

## Category 1

GRAND TOTAL (max 100 pts)

Present in moderate or greater amounts

and of highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> T. Qualio, J.Freer	<b>Date:</b> 5/18/2018
		w-tn	nq-5/18/2018-04a-04b
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.	
4	6	Metric 2. Upland buffers and surrounding land use	·•
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (7)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	)
17	23	Metric 3. Hydrology.	
max 30 pts.	subtotal	✓ Precipitation (1)Part of wetland/ ✓ Part of riparian✓ Perennial surface water (lake or stream) (5)3d. Duration inundation/sa3c. Maximum water depth. Select only one and assign score.Semi- to perma>0.7 (27.6in) (3)✓ Regularly inund0.4 to 0.7m (15.7 to 27.6in) (2)Seasonally inur	lain (1)  n/lake and other human use (1)  upland (e.g. forest), complex (1)  or upland corridor (1)  aturation. Score one or dbl check nently inundated/saturated (4)  ated/saturated (3)  idated (2)  irrated in upper 30cm (12in) (1)  onstormwater)
5	28	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed Recovered (6)  Shrub/sapling recovered (6)	emoval uatic bed removal
SI	ubtotal this pa	toxic pollutants nutrient enrichm	ient

Site: FirstEne	ergy Holloway-Knox 138kV Rate	<b>r(s)։</b> T. Qւ	ıalio, J.Freer	<b>Date:</b> 5/18/2018
00	٦			w-tmq-5/18/2018-04a-0
28	_			
subtotal first p	page			
0 28	Metric 5. Special Wetla	nds.		
max 10 pts. subtotal	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 Lake Erie coastal/tributary wetland	-		
	Lake Plain Sand Prairies (Oak Ope	•	ology (3)	
	Relict Wet Prairies (10)			
	Known occurrence state/federal the Significant migratory songbird/water			
	Category 1 Wetland. See Questio			
4 07	1		3 ( 2)	
-1 27	Metric 6. Plant commun	nities, in	terspersion, n	nicrotopography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Sca	le
	Score all present using 0 to 3 scale.	0		<0.1ha (0.2471 acres) contiguous area
	Aquatic bed 1 Emergent	1		mprises small part of wetland's
	Shrub		significant part but is	moderate quality, or comprises a
	Forest	2		mprises significant part of wetland's
	Mudflats		vegetation and is of	moderate quality or comprises a small
	Open water		part and is of high q	
	Other6b. horizontal (plan view) Interspersion.	3	Present and comprise vegetation and is of	es significant part, or more, of wetland's
	Select only one.		vegetation and is of	riigir quanty
	High (5)	Narrative I	Description of Vegetatio	n Quality
	Moderately high(4)	low		or predominance of nonnative or
	Moderate (3) Moderately low (2)	mod	disturbance tolerant	ant component of the vegetation,
	Low (1)	mou		and/or disturbance tolerant native spp
	None (0)			, and species diversity moderate to
	6c. Coverage of invasive plants. Refer			t generally w/o presence of rare
	to Table 1 ORAM long form for list. Add	la ! aula	threatened or endan	
	or deduct points for coverage  Extensive >75% cover (-5)	high		tive species, with nonnative spp olerant native spp absent or virtually
	Moderate 25-75% cover (-3)			p diversity and often, but not always,
	Sparse 5-25% cover (-1)			, threatened, or endangered spp
	Nearly absent <5% cover (0)			
	Absent (1) 6d. Microtopography.	Mudflat an	Absent <0.1ha (0.247	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.24)	, ,
	1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2	·
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres)	or more
	Standing dead >25cm (10in) dbh	Minustona	amambu Cauca Caala	
	1 Amphibian breeding pools	Microtopo 0	graphy Cover Scale Absent	
		1		nounts or if more common
			of marginal quality	
		2		amounts, but not of highest
ategory 1		3	quality or in small ar Present in moderate of	mounts of highest quality
		S	and of highest qualit	_
27 GRAI	ND TOTAL (max 100 pts)			•
	_ \			

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/17/2018
		1	w-tmq-5/17/2018-01
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)    <0.1 acres (0.04ha) (0 pts)	
1	1	Metric 2. Upland buffers and surrounding land us	e.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (9)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	i) (1)
7	8	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ (0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic regime. Score one or double check and average.  None or none apparent (12)  Check all disturbances observed	dplain (1) am/lake and other human use (1) d/upland (e.g. forest), complex (1) n or upland corridor (1) saturation. Score one or dbl check. nanently inundated/saturated (4) ndated/saturated (3) undated (2) atturated in upper 30cm (12in) (1)  nonstormwater)
7	15	<u></u>	
max 20 pts.	subtotal	Recent or no recovery (1)	quatic bed removal
sı	15 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrich	nment

RAM v. 5.0 Field	d Form Quantitative Rating		Wetland	INU.
Site: FirstEr	nergy Holloway-Knox 138kV Rat	ter(s): B.Ott	o, T. Qualio <b>Date:</b> 5/17/20	18
15	٦		w-tmq-5/17/20	018-
subtotal firs	at page			
) 15	7			
	Metric 5. Special Wetl			
ax 10 pts. subtot	Check all that apply and score as indicate Bog (10)	u.		
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetla	and-unrestricted hy	drology (10)	
	Lake Erie coastal/tributary wetla			
	Lake Plain Sand Prairies (Oak 0	Openings) (10)		
	Relict Wet Prairies (10)			
	Known occurrence state/federal			
	Significant migratory songbird/w Category 1 Wetland. See Ques			
1	Category I Wetland. See Ques	don'i Quantative i	valing (=10)	
0   15	Motric 6 Plant comm	unitios in	torenersian mierotonography	
		•	terspersion, microtopography.	
ax 20 pts. subtot	9		Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous	s area
	Aquatic bed 1 Emergent	ı	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a	2
	Shrub		significant part but is of low quality	a
	Forest	2	Present and either comprises significant part of wetland	d's
	Mudflats		vegetation and is of moderate quality or comprises a	
	Open water		part and is of high quality	
	Other	3	Present and comprises significant part, or more, of wet	tland's
	6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
	Select only one.	Name Co.	Association of Variation Oscillar	
	High (5)  Moderately high(4)	low	Description of Vegetation Quality  Low spp diversity and/or predominance of nonnative or	r
	Moderate (3)	IOW	disturbance tolerant native species	ı
	Moderately low (2)	mod	Native spp are dominant component of the vegetation,	
	✓ Low (1)		although nonnative and/or disturbance tolerant native	
	None (0)		can also be present, and species diversity moderate	to
	6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare	
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native species, with nonnative spp	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)		and/or disturbance tolerant native spp absent or virtu absent, and high spp diversity and often, but not alwa	
	Sparse 5-25% cover (-3)		the presence of rare, threatened, or endangered spp	-
	Nearly absent <5% cover (0)		the presence of fare, threatened, of chadingered app	
	Absent (1)	Mudflat an	d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)	
	Vegetated hummucks/tussucks		Moderate 1 to <4ha (2.47 to 9.88 acres)	
	Coarse woody debris >15cm (6i		High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) db		areaby Cover Seele	
		iviicrotopo	graphy Cover Scale	
	1 Amphibian breeding pools	Λ		
		0	Absent Present very small amounts or if more common	
			Present very small amounts or if more common	
egory 1		1	Present very small amounts or if more common of marginal quality	
tegory 1		1	Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest	

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/17/2018
4	4	1	w-tmq-5/17/2018-02
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
1	2	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
9	11	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  ✓ 0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream/  Part of wetland/u  ✓ Part of riparian o  3d. Duration inundation/sat  Semi- to perman  Regularly inunda  ✓ Seasonally inunda	ain (1)  //ake and other human use (1)  //pland (e.g. forest), complex (1)  r upland corridor (1)  .uration. Score one or dbl check ently inundated/saturated (4)  .ted/saturated (3)  .dated (2)  .ated in upper 30cm (12in) (1)
5	16	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed  wowing Shrub/sapling rer herbaceous/aqua sedimentation ✓ selective cutting woody debris removal	atic bed removal
SL	ubtotal this pa	toxic pollutants nutrient enrichme	ent

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-19
Site: FirstEnergy Holloway-Knox 138kV Rater(	s): B.Otto	T. Qualio	<b>Date:</b> 5/17/2018
16 subtotal first page			w-tmq-5/17/2018-02
0 16 Metric 5. Special Wetland	ds.		
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-re  Lake Plain Sand Prairies (Oak Openi  Relict Wet Prairies (10)  Known occurrence state/federal threa  Significant migratory songbird/water f  Category 1 Wetland. See Question 1	nrestricted hydr stricted hydrolo ngs) (10) ntened or endal owl habitat or u	ngered species (10) usage (10)	
2 18 Metric 6. Plant communi			opography.
fa. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  Emergent Shrub Forest Mudflats Open water Other Other 6b. horizontal (plan view) Interspersion.  Select only one.  High (5) Moderately high(4) 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)	Vegetation C 0 1 2	Absent or comprises <0.1ha (0.2) Present and either comprises sm vegetation and is of moderate or significant part but is of low quality. Present and either comprises significant part but is of low quality. Present and either comprises significant part and is of moderate or part and is of high quality. Present and comprises significant vegetation and is of high quality.  Scription of Vegetation Quality. Low spp diversity and/or predomn disturbance tolerant native spe. Native spp are dominant comport although nonnative and/or disturbance tolerant, and specion moderately high, but generally threatened or endangered spp. A predominance of native specie and/or disturbance tolerant native.	471 acres) contiguous area all part of wetland's quality, or comprises a ality nificant part of wetland's quality or comprises a small at part, or more, of wetland's // nance of nonnative or cies lent of the vegetation, librance tolerant native spp les diversity moderate to w/o presence of rare s, with nonnative spp ve spp absent or virtually
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  ategory 1  GRAND TOTAL (max 100 pts)	0 1 2 3	absent, and high spp diversity at the presence of rare, threatened.  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more.  Absent  Present very small amounts or if of marginal quality.  Present in moderate amounts, but quality or in small amounts of heresont in moderate or greater a and of highest quality.	and often, but not always, d, or endangered spp  cres) B acres)  more common  ut not of highest ighest quality

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/17/2018
		1	w-tmq-5/17/2018-03
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
1	3	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
8	11	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream,  Part of wetland/u  Part of riparian o  3d. Duration inundation/sat  Semi- to perman  Regularly inunda  Seasonally inunda	ain (1) //ake and other human use (1
5	16	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed Recovered (6)  Shrub/sapling rer	
sı	16 ubtotal this pa	Recovering (3) Recent or no recovery (1)  Recovering (3)  Recent or no recovery (1)	

DRAM v. 5.0 Field I	Form Quantitative Rating			Wetland NH-
Site: FirstEne	ergy Holloway-Knox 138kV Rater	<b>(s):</b> B.Otto	, T. Qualio	<b>Date:</b> 5/17/2018
10	1			w-tmq-5/17/2018-
16				<u> </u>
subtotal first p	age			
0 16	Metric 5. Special Wetlar	nde		
max 10 pts. subtotal	Check all that apply and score as indicated.	ius.		
nax 10 pts. Subtotal	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetland-u	unrestricted hvo	Iroloav (10)	
	Lake Erie coastal/tributary wetland-r			
	Lake Plain Sand Prairies (Oak Oper	nings) (10)		
	Relict Wet Prairies (10)  Known occurrence state/federal thre	eatened or end:	angered species (10)	
	Significant migratory songbird/water			
	Category 1 Wetland. See Question	1 Qualitative R	ating (-10)	
-1 15	1			_
-1 15	」Metric 6. Plant commun	ities, int	erspersion, microt	opography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	2.474
	Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha (0.2 Present and either comprises sr	
	1 Emergent	'	vegetation and is of moderate	
	Shrub		significant part but is of low qu	ality
	Forest	2	Present and either comprises significant and either comprises sign	
	Mudflats Open water		vegetation and is of moderate part and is of high quality	quality or comprises a small
	Other	3	Present and comprises significa	nt part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.		vegetation and is of high quali	
	Select only one.	Name the D		
	High (5) Moderately high(4)	low	Low spp diversity and/or predom	ninance of nonnative or
	Moderate (3)		disturbance tolerant native spe	
	Moderately low (2)	mod	Native spp are dominant compo	•
	Low (1)		although nonnative and/or dist	
	None (0)  6c. Coverage of invasive plants. Refer		can also be present, and spec moderately high, but generally	
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native specie	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)		and/or disturbance tolerant na absent, and high spp diversity	
	Sparse 5-25% cover (-1)		the presence of rare, threaten	•
	Nearly absent <5% cover (0)			
	Absent (1)		Open Water Class Quality	
			Absent <0.1ha (0.247 acres)	
	6d. Microtopography.	<u>0</u>	Low 0.1 to <1ha (0.247 to 2.47 a	acresi
		1 2	Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8	<u> </u>
	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	1	•	<u> </u>
	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	1 2 3	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	
	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	1 2 3 <b>Microtopog</b>	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	
	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	1 2 3	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	88 acres)
	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	1 2 3 <b>Microtopog</b> 0 1	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or it of marginal quality	f more common
to no mid	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	1 2 3 <b>Microtopog</b> 0	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if of marginal quality  Present in moderate amounts, but the series of the ser	f more common
tegory 1	6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	1 2 3 <b>Microtopog</b> 0 1	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or it of marginal quality	f more common but not of highest highest quality

Site: FirstEnergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio Date: 5/17/2018					
	_	<b>1</b>	w-tmq-5/17/2018-04		
2	2	Metric 1. Wetland Area (size).			
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)			
1	3	Metric 2. Upland buffers and surrounding land use.			
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)		
13	16	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) tted in upper 30cm (12in) (1) stormwater)		
5	21	Metric 4. Habitat Alteration and Development.			
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed ✓ mowing grazing yrazing	tic bed removal		
SL	ubtotal this pa		п		

	Form Quantitative Rating			Wetland NH-
Site: FirstEn	ergy Holloway-Knox 138kV Rater	<b>(s):</b> B.Otto	o, T. Qualio	<b>Date:</b> 5/17/2018
21	]			w-tmq-5/17/2018-
o 21	7	, de		
	Metric 5. Special Wetlan	ius.		
max 10 pts. subtotal	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-u	unroctricted by	drology (10)	
	Lake Erie coastal/tributary wetland-r		=	
	Lake Plain Sand Prairies (Oak Oper	-	<i>5,</i> ( <i>,</i>	
	Relict Wet Prairies (10)			
	Known occurrence state/federal three			
	Significant migratory songbird/water Category 1 Wetland. See Question			
-	Category I Wetland. See Question	i Qualitative r	tating (-10)	
0 21	Metric 6. Plant commun	ities int	erenersion microt	onography
		-	Community Cover Scale	opograpny.
max 20 pts. subtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises sn	
	1 Emergent		vegetation and is of moderate	
	Shrub		significant part but is of low qu	
	Forest	2	Present and either comprises sig	
	Mudflats		vegetation and is of moderate	quality or comprises a small
	Open water Other	3	part and is of high quality  Present and comprises significal	nt nart or more of wetland's
	6b. horizontal (plan view) Interspersion.	3	vegetation and is of high qualit	
	Select only one.			
	High (5)		escription of Vegetation Quality	
	Moderately high(4)	low	Low spp diversity and/or predom	
	Moderate (3) Moderately low (2)	mod	disturbance tolerant native spe Native spp are dominant composition	
	Low (1)	mod	although nonnative and/or dist	_
	None (0)		can also be present, and speci	
	6c. Coverage of invasive plants. Refer		moderately high, but generally	
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native specie	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)		and/or disturbance tolerant nat absent, and high spp diversity	
	Sparse 5-25% cover (-1)		the presence of rare, threatene	
	Nearly absent <5% cover (0)		· · · · · · · · · · · · · · · · · · ·	
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks	1	Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	0 40100)
	Standing dead >25cm (10in) dbh		,	
	1 Amphibian breeding pools		raphy Cover Scale	
		0	Absent	
		1	Present very small amounts or if of marginal quality	more common
			i oi maroinai ollalliv	
		2		ut not of highest
tegory 1		2	Present in moderate amounts, b	_
tegory 1		3		nighest quality

Site: FirstEnergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio Date: 5/17/201				
4	4	1	w-tmq-5/17/2018-05	
1	1	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)		
1	2	Metric 2. Upland buffers and surrounding land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)	
8	10	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la Part of wetland/up Part of riparian or 3d. Duration inundation/satu Semi- to permane Regularly inundate ✓ Seasonally inundate	n (1) ake and other human use (1) alke and other human use (1) alke and (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check antly inundated/saturated (4) ed/saturated (3) ated (2) ted in upper 30cm (12in) (1)  stormwater)	
7	17	Metric 4. Habitat Alteration and Development.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) ✓ Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed Figure 1  Annual Substrate disturbances observed Figure 2  Shrub/sapling rem herbaceous/aquat selective cutting Velearcutting Velearcutting Velearcutting Velearcutting Velearcuting	tic bed removal	
SL	ubtotal this pa	toxic pollutants nutrient enrichmen	IL	

### Present and either comprises a significant part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a significant part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a small part or welland's vegetation and is of moderate quality or comprises a significant part or welland's vegetation and is of moderate quality or comprises a significant part or welland's vegetation and is of moderate quality or comprises a significant part or welland's vegetation and is of moderate quality or comprises a small part of welland's vegetation and is of moderate quality or comprises a small part of welland's vegetation and is of moderate quality or vegetation and is of moderate quality or vegetation and is of modera	ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-22
Metric 5. Special Wetlands.  Check all that apply and score as indicated.  Bog (19) For (10) Old growth forest (10) Mature forested wetland (5) Lake Eric coastal/ributary wetland-restricted hydrology (10) Lake Eric coastal/ributary wetland-restricted hydrology (10) Lake Eric coastal/ributary wetland-restricted hydrology (5) Lake Plain Sand Prairies (Oak Openings) (10) Relict Wet Prairies (10) Relict Wet Prairies (10) Relict Wet Prairies (10) Significant migratory songhirtwater for habitat or usage (10) Significant migratory songhirtwater for habitat or usage (10) Category 1 Wetland See Question 1 Qualitative Rating (-10)  Metric 6. Plant communities, interspersion, microtopography.  Vegetation Community Cover Scale Aguatic bed Absent or comprises of 1 his (0,2471 acres) contiguous area  Present and either comprises significant part of wetland's vegetation and is of low quality Present and either comprises significant part of wetland's vegetation and is of low quality  Present and either comprises significant part or wetland's vegetation and is of low quality  Present and comprises significant part or wetland's vegetation and is of moderate quality or comprises a small part and is of high quality  None (0)  Entersive >75% cover (-5) Moderately high (4) Moderately high (4) Moderately Septime of Irvasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  deduct points for coverage of irvasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage of irvasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage of irvasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage and so the present and species diversity moderate to moderately high, but generally wing research of alter threatened or innative species and is on the present part of surface to later and species diversity moderate to moderately high, but generally wing research of alter threatened or endangered spp  Mutification of the		er(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/17/2018
Metric 5. Special Wetlands.  Check all that apply and score as indicated.  Bog (10) Fen (10) Gold growth forest (10) Mature forested wetland (5) Lake Eric coastal/fributary wetland-restricted hydrology (10) Lake Drian Sand Prairies (Oak Openings) (10) Relict Wet Prairies				w-tmq-5/17/2018-05
Section   Check all that apply and score as indicated.   Bog (10)	0 47	nde		
Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Ene coastal/tributary wetland-inestricted hydrology (10) Lake Ene coastal/tributary wetland-restricted hydrology (5) Lake Pian Sand Prairies (0ak Openings) (10) Relict Wet Prairies (10) Relict Wet Prairies (10) Relict Wet Prairies (10) Significant migratory songbirdwater fow habitat or usage (10) Significant migratory songbirdwater fow habitat or usage (10) Relict Wet Prairies (10) Relict Wet P	metrio of openial wette	iiius.		
### Subtool   Saw Wetland Vegetation Communities   Score all present using 0 to 3 scale.   Aquatic bed   Emergent   Shrub   Forest   Forest   Other	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland Lake Erie coastal/tributary wetland Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal the	d-restricted hydro penings) (10) nreatened or end	angered species (10)	
6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.  Aquatic bed Forest Profest Mudflats Open water Other Othe			- · · · · · · · · · · · · · · · · · · ·	
Sa. Wetland Vegetation Communities. Score all present using 0 to 3 scale.  Aquatic bed Forest Strub Mudflats Open water Other	5 22			_
Score all present using 0 to 3 scale.  Aquatic bed 1 Emergent 1 Shrub 1 Shrub 1 Shrub 1 Forest 2 Wegetation and is of moderate quality, or comprises a significant part but is of low quality 2 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 significant part but is of low quality 3 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 either comprises significant part of wetland's vegetation and is of high quality 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 3 Present and comprises significant part of wetland's vegetation and is of high quality 3 Present and either comprises significant part of wetland's vegetation and is of moderate quality or more, of wetland's vegetation and is of high quality 3 Present and either comprises significant part of wetland's vegetation and is of moderate quality or more, of wetland's vegetation and is of high quality 3 Present and either comprises significant part of wetland's vegetation and is of moderate quality or more, of wetland's vegetation and is of high quality 3 Present in moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises significant part of wetland's vegetation and is of moderate quality or omprises significant part of wetland's vegetation and is of high quality or omprises significant part of wetland's vegetation and is of high evaluation and is of high quality or omprises significant part of wetland's vegetation and is of high evaluation and is of high evaluation of high evaluation and is of high evaluation.  1 Vegeta	Metric 6. Plant commu	nities, int	erspersion, micro	otopography.
Aquatic bed    Emergent   Emergent   Shrub   Forest   Wudflats   Vegetation and is of moderate quality, or comprises a significant part but is of low quality		<u>Vegetation</u>		
The mergent   Shrub   Shrub   Shrub   Shrub   Forest   Significant part but is of low quality				
Significant part but is of low quality		1		
Forest Mudflats Open water Other Oth			_	
wegetation and is of moderate quality or comprises a small part and is of high quality  Other Other Other Select only one.  High (5) Moderately high(4) 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 (-5) Moderate 25-75% cover (-1) Nearly absent -5% cover (0) Absent (1) None (1) Score all present using 0 to 3 scale.  1 Vegetated hummucks/fussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  tegory 1  vegetation and is of moderate quality or comprises a small part and is of high quality  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  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 spp can also be present, and species diversity moderate to moderately high, but generally wo presence of rare threatened or endangered spp  high A predominance of native species diversity moderate to moderately high, but generally wo 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/or predominance or nonnative or disturbance tolerant native species diversity moderate to moderately high, but generally wo presence of rare threatened or endangered spp  high A predominance of native species diversity moderate to moderate or patient and vegetation, although nonnative and present understood or fave threatened, or endangered spp  high A predominance of native species diversity moderate to moderate or endangered spp  high A predominance of native species diversity moderate or endangered sp	<u>·</u>	2		
Open water Other O		_		-
Other  6b. horizontal (plan view) Interspersion.  Select only one.  High (5)  Moderately high(4)  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 (-1)  Nearly absent <5% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh 1 Amphibian breeding pools  Tegory 1  Agent Agent Agent Agent Agent Agent Agent Agent In moderate amounts of highest quality  Present in moderate amounts of highest quality  Present in moderate amounts of highest quality  Present in moderate or greater amounts and of highest quality  Present in moderate or greater amounts and of highest quality			_	to quanty or comprised a cinan
Select only one.		3	1	cant part, or more, of wetland's
Select only one.    High (5)			-	
Moderately high(4) Moderately Name (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 (-6) Moderate 25-75% cover (-7) Nearly absent <1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh 1 Amphibian breeding pools  tegory 1    Moderate   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    A predominance of native species				,
Moderate (3)		Narrative D	escription of Vegetation Qualit	ty
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 (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  tegory 1    Moderately low (2)   Low (1)   And (0.247 to 2.47 acres)   And (0.247 to 9.88 acres)   Apsent very small amounts of hie 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    Apredominance of native species, with nonnative spp and/or disturbance tolerant 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    Apredominance of native species, with nonnative spp and/or disturbance tolerant native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp and/or disturbance tolerant	Moderately high(4)	low	Low spp diversity and/or predo	ominance of nonnative or
Low (1) None (0) None (0) Sc. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Amphibian breeding pools  Microtopography Cover Scale  D Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality Present in moderate or greater amounts 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 and/or disturbance of native species, 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 and/or disturbance tolerant native spp and/or disturbance of native species, with nonnative and/or disturbance of native species, with nonnative and/or disturbance of native species, with nonnative and/or disturbance of native species, and species 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)  2 Moderate 1 to <4ha (0.247 to 0.247 to	Moderate (3)		disturbance tolerant native s	pecies
Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  tegory 1  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 learnt 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 <0.247 to 2.47 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  3 Present in moderate or greater amounts and of highest quality	✓ Moderately low (2)	mod	Native spp are dominant comp	ponent of the vegetation,
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  1 Amphibian breeding pools  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 amounts and of highest quality  Present in moderate amounts  and of highest quality	Low (1)		although nonnative and/or d	isturbance tolerant native spp
to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh 1 Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality  1 Present in moderate 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 <	None (0)		can also be present, and sp	ecies diversity moderate to
or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  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 <1 Low 0.1 to <1ha (0.247 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  3 Present in moderate or greater amounts and of highest quality			moderately high, but genera	lly w/o presence of rare
Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Description Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality  Present in moderate or greater amounts and of highest quality  Present in moderate or greater amounts  and of highest quality	to Table 1 ORAM long form for list. Add			
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Amphibian breeding pools  Microtopography Cover Scale  Amphibian breeding pools  Microtopography Cover Scale  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Regory 1  Absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp  Mudflat and Open Water Class Quality  O 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  O Absent  Present very small amounts or if more common of marginal quality  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		high		
Sparse 5-25% cover (-1)   Nearly absent <5% cover (0)   Absent (1)	` '			
Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.    Vegetated hummucks/tussucks   Coarse woody debris >15cm (6in)   Standing dead >25cm (10in) dbh   Amphibian breeding pools    Mudflat and Open Water Class Quality     0	` '			
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.    Vegetated hummucks/tussucks   Coarse woody debris >15cm (6in)   Standing dead >25cm (10in) dbh   Amphibian breeding pools    Mudflat and Open Water Class Quality     0			the presence of rare, threate	ened, or endangered spp
6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  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		Modeleten	d Onen Weter Class Ovelity	
Score all present using 0 to 3 scale.    Vegetated hummucks/tussucks   Coarse woody debris >15cm (6in)   Standing dead >25cm (10in) dbh   Amphibian breeding pools   Microtopography Cover Scale     Amphibian breeding pools   Microtopography Cover Scale				
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent  Present very small amounts or if more common of marginal quality  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				7 acros)
Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O 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				
Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O 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			<u> </u>	
Amphibian breeding pools  Microtopography Cover Scale  O Absent  Present very small amounts or if more common of marginal quality  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			Triigit 4tta (5.55 acres) of more	
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	· ,	Microtopo	graphy Cover Scale	
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	1 1 Amphibian brooding pools			
of marginal quality  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				r if more common
tegory 1  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		•	· ·	
tegory 1  quality or in small amounts of highest quality  3 Present in moderate or greater amounts and of highest quality		2		but not of highest
Present in moderate or greater amounts and of highest quality	tegory 1	_		_
and of highest quality		3		
22 IGRAND TOTAL (max 100 nts)		_	_	
	22 GRAND TOTAL (max 100 pts)			

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio	<b>Date:</b> 5/17/2018
0	_	<b>1</b>	w-tmq-5/17/2018-06
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
1	1	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
12	13	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/upl  Part of riparian or	n (1) ake and other human use (1) land (e.g. forest), complex (1) upland corridor (1) ration. Score one or dbl check. ntly inundated/saturated (4) ed/saturated (3) ited (2) ted in upper 30cm (12in) (1)
5	18	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed Fair (3) For in the property of the pro	ic bed removal
sı	ubtotal this pa	toxic pollutants nutrient enrichmen	ıt

ORAM v. 5.0 Field	Form Quantitative Rating			Wetland NH-23
		Rater(s): B.Otto	T. Qualio	<b>Date:</b> 5/17/2018
18	1			w-tmq-5/17/2018-06
subtotal first	page			
0 18	7	Mande		
max 10 pts. subtotal	Metric 5. Special We Check all that apply and score as indicated the control of t			
max to pis. Subtotal	Bog (10)	atou.		
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary we	etland-unrestricted hydi	ology (10)	
	Lake Erie coastal/tributary we		=	
	Lake Plain Sand Prairies (Oa	ak Openings) (10)		
	Relict Wet Prairies (10)		di (40)	
	Known occurrence state/fede Significant migratory songbir			
	Category 1 Wetland. See Qu		= : :	
	<b>7</b>			
2   20	Metric 6. Plant comr	nunities inte	erspersion micro	tonography
	<b>-</b>	•	Community Cover Scale	topograpny.
max 20 pts. subtotal	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	) 2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises	
	1 Emergent		vegetation and is of moderat	
	Shrub		significant part but is of low	
	Forest	2	Present and either comprises	
	Mudflats		_	te quality or comprises a small
	Open water Other	3	part and is of high quality  Present and comprises signific	cant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion		vegetation and is of high qua	
	Select only one.			•
	High (5)	Narrative De	scription of Vegetation Qualit	
	Moderately high(4)	low	Low spp diversity and/or predo	
	Moderate (3)	mod	disturbance tolerant native s	
	Moderately low (2) Low (1)	mod	Native spp are dominant comp	sturbance tolerant native spp
	✓ None (0)		can also be present, and spe	
	6c. Coverage of invasive plants. Refe	r	moderately high, but general	•
	to Table 1 ORAM long form for list. Ad		threatened or endangered sp	
	or deduct points for coverage	high	A predominance of native spec	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)		and/or disturbance tolerant r absent, and high spp diversi	
	Sparse 5-25% cover (-1)		the presence of rare, threate	
	✓ Nearly absent <5% cover (0)		and production of raile; an oake	ea, e. eaar.gerea epp
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	
	1 Vegetated hummucks/tussuc Coarse woody debris >15cm		Moderate 1 to <4ha (2.47 to 9 High 4ha (9.88 acres) or more	-
	Standing dead >25cm (10in)	` '	Triigit Tha (0.00 acres) of filore	
	Amphibian breeding pools		aphy Cover Scale	
		0	Absent	
		1	Present very small amounts or	r if more common
			of marginal quality	but not of bighoot
4		2	Present in moderate amounts,	=
itegory 1		3	quality or in small amounts or Present in moderate or greater	
		Ü	and of highest quality	. aouito
20 <b>GRA</b>	ND TOTAL (max 100 pts)			

Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> B.Otto, T. Qualio	<b>Date:</b> 5/17/2018
			w-tmq-5/17/2018-07
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
1	3	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow.  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
18	21	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  ✓ >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all to 100 year floodplain in 100 year floodplain i	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
6	27	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed ✓ mowing Grazing Grazin	tic bed removal
SI	ubtotal this pa	toxic pollutants nutrient enrichme	nt

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-24
	(s): B.Otto	, T. Qualio	<b>Date:</b> 5/17/2018
27 subtotal first page			w-tmq-5/17/2018-07
0 27 Metric 5. Special Wetlan	ds.		
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-rule. Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	inrestricted hydro estricted hydro ings) (10) atened or enda fowl habitat or	angered species (10) usage (10)	
5 32 Metric 6. Plant commun	-	•	opography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.		Community Cover Scale	474
Score all present using 0 to 3 scale.	<u>0</u> 1	Absent or comprises <0.1ha (0.24	
Aquatic bed 2 Emergent	'	Present and either comprises sm vegetation and is of moderate of	
2 Emergent Shrub		significant part but is of low qua	
Forest	2	Present and either comprises sig	
Mudflats	_	vegetation and is of moderate of	
Open water		part and is of high quality	dumy or comprises a small
Other	3	Present and comprises significan	t part, or more, of wetland's
6b. horizontal (plan view) Interspersion.	Ü	vegetation and is of high quality	
Select only one.		vogotation and to or mgir quality	
High (5)	Narrative D	escription of Vegetation Quality	
Moderately high(4)	low	Low spp diversity and/or predomi	nance of nonnative or
Moderate (3)	1011	disturbance tolerant native spec	
✓ Moderately low (2)	mod	Native spp are dominant compon	
Low (1)		although nonnative and/or distu	•
None (0)		can also be present, and specie	
6c. Coverage of invasive plants. Refer		moderately high, but generally	-
to Table 1 ORAM long form for list. Add		threatened or endangered spp	
or deduct points for coverage	high	A predominance of native species	s, with nonnative spp
Extensive >75% cover (-5)	Ü	and/or disturbance tolerant nati	
✓ Moderate 25-75% cover (-3)		absent, and high spp diversity a	• • •
Sparse 5-25% cover (-1)		the presence of rare, threatener	
Nearly absent <5% cover (0)			
Absent (1)	Mudflat and	Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	cres)
1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
1 Standing dead >25cm (10in) dbh			
2 Amphibian breeding pools	Microtopog	raphy Cover Scale	
	0	Absent	
	1	Present very small amounts or if	more common
		of marginal quality	
	2	Present in moderate amounts, bu	t not of highest
or 2 gray zone		quality or in small amounts of h	ighest quality
	3	Present in moderate or greater ar	nounts
		and of highest quality	
32 GRAND TOTAL (max 100 pts)			

Site: FirstEnergy Holloway-Knox 138kV Rater(s): B.Otto, T. Qualio			<b>Date:</b> 5/17/2018
0	0	1	w-tmq-5/17/2018-08
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
2	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo  ✓ HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
10	14	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ed/saturated (3) ated (2) tted in upper 30cm (12in) (1)
5	19	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed Figure 1  Annual Substrate disturbances observed ✓ mowing grazing herbaceous/aquat sedimentation	
SU	19 ubtotal this pa	selective cutting dredging woody debris removal farming toxic pollutants nutrient enrichmen	nt

Site: F	irstEne	ergy Holloway-Knox 138kV Rater	<b>(s):</b> B.Otto	o, T. Qualio	<b>Date:</b> 5/17/2018
	19	1			w-tmq-5/17/2018-0
		J			
	btotal first p	age			
0	19	Metric 5. Special Wetlar	ids.		
max 10 pts.	subtotal	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-u		. ,	
		Lake Erie coastal/tributary wetland-r	-	logy (5)	
		Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10)	iiigs) (10)		
		Known occurrence state/federal three	eatened or end	angered species (10)	
		Significant migratory songbird/water		• , ,	
		Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	
1	20	Motrio 6 Plant commun	itios int	archardian miarat	onography
		Metric 6. Plant commun	-	•	opograpny.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	<u>vegetation</u> 0	Community Cover Scale Absent or comprises <0.1ha (0.2)	2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises sn	
		1 Emergent		vegetation and is of moderate	quality, or comprises a
		Shrub		significant part but is of low qu	
		Forest Mudflats	2	Present and either comprises significant vegetation and is of moderate	
		Open water		part and is of high quality	quality of complicate a circuit
		Other	3	Present and comprises significa	
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	ty
		Select only one. High (5)	Narrative D	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predom	ninance of nonnative or
		Moderate (3)		disturbance tolerant native spe	
		Moderately low (2)  ✓ Low (1)	mod	Native spp are dominant compo although nonnative and/or dist	_
		None (0)		can also be present, and spec	
		6c. Coverage of invasive plants. Refer		moderately high, but generally	
		to Table 1 ORAM long form for list. Add	le fraile	threatened or endangered spp	
		or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native specie and/or disturbance tolerant na	
		Moderate 25-75% cover (-3)		absent, and high spp diversity	
		Sparse 5-25% cover (-1)		the presence of rare, threatene	ed, or endangered spp
		Nearly absent <5% cover (0)	Mudfleten	d On an Water Class Ovelity	
		Absent (1) 6d. Microtopography.	o Nudriat and	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopoo	raphy Cover Scale	
		p	0	Absent	
			1	Present very small amounts or it	f more common
				of marginal quality	us not of highest
tegor	, 1		2	Present in moderate amounts, be quality or in small amounts of	_
ategory	1		3	Present in moderate or greater a	
00				and of highest quality	
120 l	GRAI	ND TOTAL (max 100 pts)			

Site: F	<b>Date:</b> 5/17/2018		
	0	1	w-tmq-5/17/2018-09
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
3	5	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
11	16	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/l  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ed/saturated (3) ated (2) tted in upper 30cm (12in) (1)
6	22	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Check all disturbances observed Fair (3) Fa	
SU	ubtotal this pa	toxic pollutants nutrient enrichme	nt

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-26
	ter(s): B.Otto	o, T. Qualio	<b>Date:</b> 5/17/2018
22 subtotal first page			w-tmq-5/17/2018-09
0 00	lands		
motifie of openial free			
max 10 pts. subtotal 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 Lake Erie coastal/tributary wetland Lake Plain Sand Prairies (Oake Relict Wet Prairies (10) Known occurrence state/federa	and-unrestricted hydro and-restricted hydro Openings) (10)	logy (5)	
Significant migratory songbird/v	water fowl habitat or	usage (10)	
Category 1 Wetland. See Que	stion 1 Qualitative R	lating (-10)	
-1 21 Metric 6. Plant comm	unities, int	erspersion, micro	topography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.	•	Community Cover Scale	
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	
Aquatic bed  1 Emergent	ı	Present and either comprises a vegetation and is of moderat	
Shrub		significant part but is of low of	quality
Forest	2	Present and either comprises	
Mudflats Open water		part and is of high quality	e quality or comprises a small
Other	3	Present and comprises signific	ant part, or more, of wetland's
6b. horizontal (plan view) Interspersion.		vegetation and is of high qua	lity
Select only one.  High (5)	Narrative D	escription of Vegetation Qualit	v
Moderately high(4)	low	Low spp diversity and/or predo	
Moderate (3)	<del></del>	disturbance tolerant native s	
Moderately low (2)  ✓ Low (1)	mod	Native spp are dominant comp	sturbance tolerant native spp
None (0)		can also be present, and spe	• •
6c. Coverage of invasive plants. Refer		moderately high, but general	
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered sp A predominance of native spec	
Extensive >75% cover (-5)	g	and/or disturbance tolerant n	
✓ Moderate 25-75% cover (-3)		absent, and high spp diversit	
Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threate	ned, or endangered spp
Absent (1)	Mudflat and	Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks	1	Low 0.1 to <1ha (0.247 to 2.47	
Coarse woody debris >15cm (6		Moderate 1 to <4ha (2.47 to 9 High 4ha (9.88 acres) or more	.oo acres)
Standing dead >25cm (10in) db	,	Trugue man (and a mana) an income	
Amphibian breeding pools		raphy Cover Scale	
	0	Absent Present very small amounts or	if more common
	1	of marginal quality	II IIIOI & CONTINUN
	2	Present in moderate amounts,	but not of highest
egory 1		quality or in small amounts of	f highest quality
	3	Present in moderate or greater	amounts
21 GRAND TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 05/22/2018
0	0	1	w-tmq-5/22/2018-01
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
3	3	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	)
11	14	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream.  Part of wetland/u  Part of riparian of the stream of the st	ain (1) //lake and other human use (1) //lake and other human
5	19	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Check all disturbances observed mowing Recovering (3) Recent or no recovery (1)  Check all disturbances observed Recovering (3) Recent or no recovery (1)	
SI	19 ubtotal this pa	selective cutting dredging woody debris removal farming toxic pollutants nutrient enrichments	ent

RAM v. 5.0 Field I	Form Quantitative Rating			Wetland NH
Site: FirstEne	ergy Holloway-Knox 138kV	Rater(s): T. Qu	alio, J.Freer	<b>Date:</b> 05/22/2018
	1			w-tmq-5/22/2018
19				
subtotal first p	page			
19	Metric 5. Special W	latlands		
ax 10 pts. subtotal	Check all that apply and score as inc			
ix to pis. Subtotal	Bog (10)	aloutou.		
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5	5)		
	Lake Erie coastal/tributary		drology (10)	
	Lake Erie coastal/tributary		logy (5)	
	Lake Plain Sand Prairies ( Relict Wet Prairies (10)	Oak Openings) (10)		
	Known occurrence state/fe	ederal threatened or end	angered species (10)	
	Significant migratory songl			
	Category 1 Wetland. See	Question 1 Qualitative F	ating (-10)	
3 22	1			
) 22	Metric 6. Plant con	nmunities, int	erspersion, micro	topography.
ax 20 pts. subtotal	6a. Wetland Vegetation Communitie		Community Cover Scale	0.1=1
	Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha (0. Present and either comprises s	
	1 Emergent	'	vegetation and is of moderate	
	Shrub		significant part but is of low q	
	Forest	2	Present and either comprises s	_
	Mudflats Open water		vegetation and is of moderate	e quality or comprises a small
	Open water Other	3	part and is of high quality  Present and comprises signification	ant part, or more, of wetland
	6b. horizontal (plan view) Interspers		vegetation and is of high qual	
	Select only one.			
	High (5)  Moderately high(4)	Narrative D	escription of Vegetation Quality Low spp diversity and/or predor	
	Moderate (3)	IOW	disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant compo	
	✓ Low (1)		although nonnative and/or dis	
	None (0)	.f.,,	can also be present, and spec	
	6c. Coverage of invasive plants. Reto Table 1 ORAM long form for list.		moderately high, but generally threatened or endangered sp	
	or deduct points for coverage	high	A predominance of native speci	
	Extensive >75% cover (-5)		and/or disturbance tolerant na	
	Moderate 25-75% cover (-	3)	absent, and high spp diversity	•
	Sparse 5-25% cover (-1) Nearly absent <5% cover (	(0)	the presence of rare, threater	ied, or endangered spp
	✓ Absent (1)		d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	
	Vegetated hummucks/tuss Coarse woody debris >150		Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more	oo acres)
	Standing dead >25cm (10i	` '	Trigit ma (0.00 acros) of more	
	Amphibian breeding pools		raphy Cover Scale	
		0	Absent	7
		1	Present very small amounts or of marginal quality	ir more common
		2	Present in moderate amounts,	but not of highest
tegory 1		_	quality or in small amounts of	
3 1		3	Present in moderate or greater	
		•	and of highest quality	

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 5/21/2018
2	2	7	w-tmq-5/21/2018-04
3	3	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  ✓ 3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
4	7	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  VARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallor HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
15	22	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/le  Part of wetland/up  Part of riparian or  Semi- to permaner  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) land (e.g. forest), complex (1) upland corridor (1) ration. Score one or dbl check. ntly inundated/saturated (4) ed/saturated (3) ited (2) ted in upper 30cm (12in) (1)
7.5	29.5	stormwater input other	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recevering (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) Receivering (3) Receivering (4) Recovering (3) Receivering (3) Receivering (3) Receivering (4) Recovering (3) Receivering (4) Recovering (4) Recovering (5) Receivering (6) Recovering (7) Recovering (8) Receivering (8) Recei	
SL	29.5	selective cutting dredging woody debris removal farming nutrient enrichmer	nt

ORAM v. 5.0 Field Fo	orm Quantitative Rating			Wetland NH-28
		Rater(s): T. Qua	lio, J.Freer	<b>Date:</b> 5/21/2018
29.5 subtotal first pag	je			w-tmq-5/21/2018-04
0 29.5	Metric 5. Special W	letlands.		
	Check all that apply and score as inc Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5 Lake Erie coastal/tributary Lake Erie coastal/tributary Lake Plain Sand Prairies (10) Known occurrence state/fe Significant migratory songl Category 1 Wetland. See	icated.  wetland-unrestricted hydrowetland-restricted hydrowetland-restricted hydrolo Dak Openings) (10)  deral threatened or endar bird/water fowl habitat or u	ngered species (10) usage (10)	
1 30.5	Metric 6. Plant com	nmunities, inte	erspersion, microt	topography.
	6a. Wetland Vegetation Communitie		Community Cover Scale  Absent or comprises <0.1ha (0.	2471 cores) contiguous area
	Score all present using 0 to 3 scale.  Aquatic bed Emergent Shrub	<u> </u>	Present and either comprises so vegetation and is of moderate significant part but is of low questions.	mall part of wetland's quality, or comprises a
	Forest Mudflats Open water	2	Present and either comprises si vegetation and is of moderate part and is of high quality	gnificant part of wetland's
	Other6b. horizontal (plan view) Interspersi	3 ion.	Present and comprises signification vegetation and is of high qual	
	Select only one. High (5)	Narrative De	scription of Vegetation Quality	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or predor disturbance tolerant native sp	ninance of nonnative or
	Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Re		Native spp are dominant compo- although nonnative and/or dis can also be present, and spec moderately high, but generally	turbance tolerant native spp sies diversity moderate to vw/o presence of rare
	to Table 1 ORAM long form for list. A or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)  Sparse 5-25% cover (-1)	high	threatened or endangered spp A predominance of native speci and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threaten	es, with nonnative spp tive spp absent or virtually and often, but not always,
	Nearly absent <5% cover ( Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	
	1 Vegetated hummucks/tuss		Moderate 1 to <4ha (2.47 to 9.8	38 acres)
	Coarse woody debris >150		High 4ha (9.88 acres) or more	
	Standing dead >25cm (10i 1 Amphibian breeding pools		aphy Cover Scale	
		0	Absent	
		1	Present very small amounts or	f more common
or 2 gray zon	e	2	of marginal quality  Present in moderate amounts, I quality or in small amounts of	=
J,		3	Present in moderate or greater	
30.5 <b>GRAN</b>	D TOTAL (max 100 pts)		and of highest quality	

Site: FirstEne	rgy Holloway-Knox 138kV	Rater(s): T. Qualio, J.Fre	er	<b>Date:</b> 5/21/2018
0 0	1			w-tmq-5/21/2018-05
0 0	Metric 1. Wetland Ar	` '		
max 6 pts. subtotal	Select one size class and assign score  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.  10 to <25 acres (4 to <10.1ha  3 to <10 acres (1.2 to <4ha)  0.3 to <3 acres (0.12 to <1.2la)  0.1 to <0.3 acres (0.04 to <0.4)			

ORAM v. 5.0 Field I	Form Quantitative Rating			Wetland NH-29
		Rater(s): T. Qua	ilio, J.Freer	<b>Date:</b> 5/21/2018
23	nage			w-tmq-5/21/2018-05
0 23	Metric 5. Special W	letlands.		
max 10 pts. subtotal	Check all that apply and score as ind Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5 Lake Erie coastal/tributary Lake Plain Sand Prairies (0 Relict Wet Prairies (10) Known occurrence state/fe	icated. ) wetland-unrestricted hyd wetland-restricted hydrol Dak Openings) (10) deral threatened or enda	ngered species (10)	
	Significant migratory songb Category 1 Wetland. See		• , ,	
3 26	Metric 6. Plant com	munities, inte	erspersion, micro	otopography.
max 20 pts. subtotal	6a. Wetland Vegetation Communitie Score all present using 0 to 3 scale.	s. <u>Vegetation (</u>	Community Cover Scale  Absent or comprises <0.1ha (	0.2471 acres) contiguous area
	Aquatic bed  Emergent Shrub	1	Present and either comprises vegetation and is of modera significant part but is of low	small part of wetland's te quality, or comprises a
	Forest Mudflats Open water	2	part and is of high quality	te quality or comprises a small
	Other  6b. horizontal (plan view) Interspersion	3 on.	Present and comprises signifi vegetation and is of high qu	cant part, or more, of wetland's ality
	Select only one.  High (5)	Narrative De	escription of Vegetation Quali	tv
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or pred disturbance tolerant native s	ominance of nonnative or species
	Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Re	mod fer	Native spp are dominant com although nonnative and/or d can also be present, and sp moderately high, but genera	listurbance tolerant native spp ecies diversity moderate to
	to Table 1 ORAM long form for list. A or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high		
	Sparse 5-25% cover (-1)  ✓ Nearly absent <5% cover (		the presence of rare, threate	
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	7
	Score all present using 0 to 3 scale.  1 Vegetated hummucks/tuss	ucks <u>1</u>	Low 0.1 to <1ha (0.247 to 2.47 to 4.47 to 4.47 to 4.47 to 4.48	
	Coarse woody debris >15c	m (6in) 3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in Amphibian breeding pools		aphy Cover Scale	
	S. Godin. 9 Poolo	0	Absent	
		1	Present very small amounts of	or if more common
		2	of marginal quality  Present in moderate amounts	but not of highest
ategory 1			quality or in small amounts	of highest quality
		3	Present in moderate or greate and of highest quality	er amounts
26 grai	ND TOTAL (max 100 pts)			

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 5/21/2018
4	4	7	w-tmq-5/21/2018-03
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
4	5	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal		w field. (3)
11	16	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/upl  Part of riparian or the stream of the stre	th (1)  ake and other human use (1)  land (e.g. forest), complex (1)  upland corridor (1)  ration. Score one or dbl check.  ntly inundated/saturated (4)  ed/saturated (3)  ted (2)  ted in upper 30cm (12in) (1)  stormwater)
6	22	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	<b>-</b>	
SI	22 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichmen	ıt

	Form Quantitative Rating		Wetland N
Site: FirstEne	ergy Holloway-Knox 138kV	Rater(s): T. Qua	alio, J.Freer <b>Date:</b> 5/21/2018
22	1		w-tmq-5/21/2018
22	]		
subtotal first p	age		
0 22	Metric 5. Special V	Vetlands.	
max 10 pts. subtotal	Check all that apply and score as in		
	Bog (10)		
	Fen (10) Old growth forest (10)		
	Mature forested wetland (	(5)	
		y wetland-unrestricted hyd	rology (10)
	Lake Erie coastal/tributary		
	Lake Plain Sand Prairies	(Oak Openings) (10)	
	Relict Wet Prairies (10)		
	Known occurrence state/f Significant migratory song		
		e Question 1 Qualitative R	
	T Gategory 1 Wettand. Gee	2 Question 1 Quantative 10	aurig ( 10)
-1   21	Metric 6 Plant cor	nmunities int	erspersion, microtopography.
	6a. Wetland Vegetation Communiti	•	Community Cover Scale
nax 20 pts. subtotal	Score all present using 0 to 3 scale.		Absent or comprises <0.1ha (0.2471 acres) contiguous are
	Aquatic bed	· <u> </u>	Present and either comprises small part of wetland's
	1 Emergent		vegetation and is of moderate quality, or comprises a
	Shrub		significant part but is of low quality
	Forest	2	Present and either comprises significant part of wetland's
	Mudflats		vegetation and is of moderate quality or comprises a sma
	Open water Other	3	part and is of high quality  Present and comprises significant part, or more, of wetland
	6b. horizontal (plan view) Interspers		vegetation and is of high quality
	Select only one.		- January
	High (5)	Narrative De	escription of Vegetation Quality
	High (5) Moderately high(4)	Narrative De	Low spp diversity and/or predominance of nonnative or
	High (5) Moderately high(4) Moderate (3)	low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)		Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation,
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)	low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)	low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation,
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)	low mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spr can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage	low mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  A predominance of native species, with nonnative spp
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5	low mod sefer Add high	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5 Moderate 25-75%	low mod sefer Add high	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  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,
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)	low mod  refer Add high 5) -3)	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5 Moderate 25-75%	low mod  refer Add high (-3)	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  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,
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.	low mod  refer Add high (-3) (0)  Mudflat and 0	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.	low mod sefer Add high (-3) (0) Mudflat and 0 1	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus	low   mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15	low   mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list.  or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15  Standing dead >25cm (10)	low   mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list. or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15	low   mod	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list.  or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15  Standing dead >25cm (10)	low mod mod  lefer Add high (-3) (-3)  (0)  Mudflat and 0 1 ssucks 2 scm (6in) 3 Din) dbh ss Microtopog	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list.  or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15  Standing dead >25cm (10)	low mod  mod  mod  lefer Add high 5) (-3)  f (0)  Mudflat and 0 1 ssucks 2 scm (6in) 3 Din) dbh s  Microtopog 0 1	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality
egory 1	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list.  or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15  Standing dead >25cm (10)	low mod  mod  mod  lefer Add high 5) (-3)  (0)  Mudflat and 0 1 ssucks 2 som (6in) 3 Din) dbh ss  Microtopog 0	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest
egory 1	High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. R  to Table 1 ORAM long form for list.  or deduct points for coverage  Extensive >75% cover (-5  Moderate 25-75% cover (-1)  Nearly absent <5% cover  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tus  Coarse woody debris >15  Standing dead >25cm (10)	low mod  mod  mod  lefer Add high 5) (-3)  f (0)  Mudflat and 0 1 ssucks 2 scm (6in) 3 Din) dbh s  Microtopog 0 1	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spt can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  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  Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality

Site: F	irstEne	gy Holloway-Knox 138kV	Rater(s): T. Qualio, J.Freer	<b>Date:</b> 5/21/2018
4	4			w-tmq-5/21/2018-02
1	1	Metric 1. Wetland A		
max 6 pts.	subtotal	Select one size class and assign score    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20   10 to <25 acres (4 to <10.1h   3 to <10 acres (1.2 to <4ha)   0.3 to <3 acres (0.12 to <1.2   ✓ 0.1 to <0.3 acres (0.04 to <0   <0.1 acres (0.04ha) (0 pts)	0.2ha) (5 pts) na) (4 pts) (3 pts) tha) (2pts)	
4	5	Metric 2. Upland but	fers and surrounding land us	e.
max 14 pts.	subtotal	2a. Calculate average buffer width. S  WIDE. Buffers average 50m MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers a 2b. Intensity of surrounding land use. VERY LOW. 2nd growth or LOW. Old field (>10 years), MODERATELY HIGH. Resi	elect only one and assign score. Do not double check. In (164ft) or more around wetland perimeter (7) 25m to <50m (82 to <164ft) around wetland perimeter (4 10m to <25m (32ft to <82ft) around wetland perimeter verage <10m (<32ft) around wetland perimeter (0) Select one or double check and average. older forest, prairie, savannah, wildlife area, etc. (7) shrubland, young second growth forest. (5) idential, fenced pasture, park, conservation tillage, new en pasture, row cropping, mining, construction. (1)	i) (1)
11	16	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that a High pH groundwater (5)  J Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surfactor perennial surface water (lake)  3c. Maximum water depth. Select online source (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (1)  J <0.4m (<15.7in) (1)	apply.  3b. Connectivity. Score  100 year flood Between stread Part of wetlan Part of riparial Part of regime inundation/ Semi- to perm Regularly inur Seasonally inur Seasonally sa regime. Score one or double check and average.	dplain (1) am/lake and other human use (1) d/upland (e.g. forest), complex (1) n or upland corridor (1) saturation. Score one or dbl check nanently inundated/saturated (4) ndated/saturated (3) undated (2) aturated in upper 30cm (12in) (1)
7	23	Metric 4. Habitat Alt	eration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or development. Score one or development. Select only Recovered (6) Recovering (3) Recent or no recovery (1)	one and assign score.  ouble check and average.  Check all disturbances observed  mowing grazing grazing clearcutting  ouble check and average.	quatic bed removal
su	23 ubtotal this pa		selective cutting dredging woody debris removal toxic pollutants dredging nutrient enrich	nment

	Form Quantitative Rating			<u> </u>
Site: FirstEn	ergy Holloway-Knox 138kV Rate	<b>er(s):</b> T. Qu	alio, J.Freer	<b>Date:</b> 5/21/2018
22	1			w-tmq-5/21/2018
23				
subtotal first	page			
0 23	Metric 5. Special Wetla	ands.		
max 10 pts. subtotal	<b>=</b>			
·	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetlan	nd-unrestricted hyd	drology (10)	
	Lake Erie coastal/tributary wetlan			
	Lake Plain Sand Prairies (Oak O	penings) (10)		
	Relict Wet Prairies (10)			
	Known occurrence state/federal t			
	Significant migratory songbird/wa Category 1 Wetland. See Questi			
<u> </u>	T	ion i gaamanvo i	(ag ( 10)	
0   23	Metric 6. Plant commu	ınities, int	erspersion, micro	otopography.
nax 20 pts. subtotal	<b></b>	•	Community Cover Scale	otopog.ap.iyi
nax 20 pto. Subtotal	Score all present using 0 to 3 scale.	0		(0.2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises	
	1 Emergent		vegetation and is of modera	
	Shrub		significant part but is of low	
	Forest Mudflats	2	Present and either comprises	
	Open water		part and is of high quality	ate quality or comprises a sma
	Other	3		icant part, or more, of wetland
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qu	
	Select only one.			
	High (5)  Moderately high(4)	low	Low spp diversity and/or pred	
	Moderate (3)	IOW	disturbance tolerant native	
	Moderately low (2)	mod	Native spp are dominant com	
	✓ Low (1)		although nonnative and/or of	disturbance tolerant native spp
	None (0)		can also be present, and sp	
	6c. Coverage of invasive plants. Refer		moderately high, but genera	
	to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered s  A predominance of native spe	
	Extensive >75% cover (-5)	iligii		native spp absent or virtually
	✓ Moderate 25-75% cover (-3)			ity and often, but not always,
	Sparse 5-25% cover (-1)		the presence of rare, threat	ened, or endangered spp
	Nearly absent <5% cover (0)	Mondelatan	d Owen Water Class Ovelity	
	Absent (1) 6d. Microtopography.	Wudfiat and	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	7 acres)
	1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to	
	Coarse woody debris >15cm (6in	n) 3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) dbh			
	Amphibian breeding pools		raphy Cover Scale	
		0	Absent  Present very small amounts of	or if more common
		1	of marginal quality	or in more common
		2	Present in moderate amounts	s, but not of highest
egory 1			quality or in small amounts	of highest quality
egory 1		3	quality or in small amounts  Present in moderate or greate and of highest quality	

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 5/21/2018
0	_	<b>1</b>	w-tmq-5/21/2018-01
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)    <0.1 acres (0.04ha) (0 pts)	
4	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallowed the field of	
11	15	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream/  ✓ Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  ✓ Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ied/saturated (3) ated (2) ated in upper 30cm (12in) (1)
5	20	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1)  Very good (4) Fair (3) Poor to fair (2) Whom wing Shrub/sapling remains the process of	
SL	20 ubtotal this pa	selective cutting dredging woody debris removal toxic pollutants nutrient enrichme	nt

DRAM v. 5.0 Field	Form Quantitative Rating			Wetland NH-
Site: FirstEnd	ergy Holloway-Knox 138kV Rate	<b>r(s):</b> T. Qu	alio, J.Freer	<b>Date:</b> 5/21/2018
00	7			w-tmq-5/21/2018-
20				<u>'</u>
subtotal first	page			
20	Metric 5. Special Wetla	nde		
nax 10 pts. subtotal	Check all that apply and score as indicated.	ilius.		
ax 10 pts. Subtotal	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetland	•		
	Lake Erie coastal/tributary wetland Lake Plain Sand Prairies (Oak Op		logy (5)	
	Relict Wet Prairies (10)	eriirigs) (10)		
	Known occurrence state/federal th		• • • • •	
	Significant migratory songbird/wat			
	Category 1 Wetland. See Question	on 1 Qualitative F	(ating (-10)	
0 20	Metric 6. Plant commu	nities, int	erspersion, micro	topography.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.	•	Community Cover Scale	ropograpny.
·	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (	
	Aquatic bed	1	Present and either comprises	
	1 Emergent Shrub		vegetation and is of modera significant part but is of low	
	Forest	2	Present and either comprises	
	Mudflats		_	te quality or comprises a small
	Open water Other	3	part and is of high quality	cant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.	3	vegetation and is of high qua	
	Select only one.			
	High (5) Moderately high(4)	Narrative D	escription of Vegetation Qualit Low spp diversity and/or predo	
	Moderate (3)	IOW	disturbance tolerant native s	
	Moderately low (2)	mod	Native spp are dominant comp	·
	Low (1)		9	isturbance tolerant native spp
	None (0) 6c. Coverage of invasive plants. Refer		can also be present, and sp moderately high, but genera	
	to Table 1 ORAM long form for list. Add		threatened or endangered s	pp
	or deduct points for coverage	high	A predominance of native spe	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)			native spp absent or virtually ty and often, but not always,
	Sparse 5-25% cover (-1)		the presence of rare, threate	
	Nearly absent <5% cover (0)			
	Absent (1) 6d. Microtopography.	Mudflat and	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	7 acres)
	1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopoo	raphy Cover Scale	
		0	Absent	
		1	Present very small amounts o	r if more common
		2	of marginal quality  Present in moderate amounts	but not of highest
tegory 1		2	quality or in small amounts	
		3	Present in moderate or greate and of highest quality	

2 2	L	u tma E/22/2019 0E
2 2		w-tmq-5/22/2018-05
	Metric 1. Wetland Area (size).	
max 6 pts. subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
3 5	Metric 2. Upland buffers and surrounding land use.	
	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
14 19	Metric 3. Hydrology.	
max 30 pts. subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/I  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Regularly inundat  Seasonally inundat  Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
6 25	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)  Recent or no recovery (1)  Check all disturbances observed mowing ✓ grazing ✓ clearcutting ✓ selective cutting woody debris removal toxic pollutants  nutrient enrichme	ttic bed removal

Site: FirstEne	ergy Holloway-Knox 138kV Rater	<b>(s):</b> T. Qu	alio, J.Freer	<b>Date:</b> 05/22/2018
25	1			w-tmq-5/22/2018-0
	J			
subtotal first p	nage			
0 25	Metric 5. Special Wetlar	nds.		
max 10 pts. subtotal	Check all that apply and score as indicated.			
	Bog (10) Fen (10)			
	Old growth forest (10)			
	Mature forested wetland (5)		(10)	
	Lake Erie coastal/tributary wetland-u		=	
	Lake Plain Sand Prairies (Oak Oper		nogy (o)	
	Relict Wet Prairies (10)			
	Known occurrence state/federal three			
	Significant migratory songbird/water Category 1 Wetland. See Question			
	Category I Wetland. See Question	i Qualitative i	Cating (-10)	
-2   23	Metric 6. Plant commun	ities, int	erspersion, micro	tonography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.	-	Community Cover Scale	topograpity:
max 20 pto. Subtotal	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	.2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises s	small part of wetland's
	1 Emergent		vegetation and is of moderate	
	Shrub Forest	2	significant part but is of low of Present and either comprises s	
	Mudflats	2		e quality or comprises a small
	Open water		part and is of high quality	1, 1
	Other	3	Present and comprises signific	
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high qua	lity
	High (5)	Narrative D	escription of Vegetation Quality	ı
	Moderately high(4)	low	Low spp diversity and/or predo	
	Moderate (3)		disturbance tolerant native sp	
	Moderately low (2)  ✓ Low (1)	mod	Native spp are dominant comp although nonnative and/or dis	
	None (0)		can also be present, and spe	
	6c. Coverage of invasive plants. Refer		moderately high, but general	•
	to Table 1 ORAM long form for list. Add		threatened or endangered sp	
	or deduct points for coverage	high	A predominance of native spec	
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)		and/or disturbance tolerant n absent, and high spp diversit	
	Sparse 5-25% cover (-1)		the presence of rare, threater	-
	Nearly absent <5% cover (0)			
	Absent (1)		d Open Water Class Quality	
	6d. Microtopography.  Score all present using 0 to 3 scale.	0 1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47	acres)
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.47)	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) dbh			
	1 Amphibian breeding pools		graphy Cover Scale	
		<u>0</u>	Absent  Present very small amounts or	if more common
			of marginal quality	
		2	Present in moderate amounts,	=
Category 1			quality or in small amounts o	
		3	Present in moderate or greater	amounts
23 <b>GRA</b>	ND TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> T. Qualio, J.Freer	Date: 05/22/2018
4	4		w-tmq-5/22/2018-04
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
3	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falld HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
14	18	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Part of wetland/u  Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
7	25	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) ✓ Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Very good (4) Fair (3) ✓ poor (1)  Check all disturbances observed mowing ✓ grazing ✓ herbaceous/aqua sedimentation dredging	
SI	25 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	:nt

ORAM v. 5.0 Field Form Quantitative Rating		Wetland NH-34
Site: FirstEnergy Holloway-Knox 138kV Rater	<b>(s):</b> T. Qua	alio, J.Freer <b>Date:</b> 05/22/2018
25 subtotal first page		w-tmq-5/22/2018-04
0 25 Metric 5. Special Wetlar	nds.	
max 10 pts. subtotal 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-Lake Erie coastal/tributary wetland-Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question	unrestricted hyd restricted hydrol nings) (10) eatened or enda fowl habitat or	ngered species (10) usage (10)
<u> </u>		erspersion, microtopography.
max 20 pts. subtotal  6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  1 Emergent  Shrub  Forest  Mudflats  1 Open water  Other  6b. horizontal (plan view) Interspersion.  Select only one.  High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)	Vegetation (	Absent or comprises <0.1ha (0.2471 acres) contiguous area  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  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  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  Present and comprises significant part, or more, of wetland's vegetation and is of high quality  Escription of Vegetation Quality  Low spp diversity and/or predominance of nonnative or disturbance tolerant native species  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  A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  or 2 gray zone	0 1 2 3	absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp  Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres) Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more  Taphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts
30 GRAND TOTAL (max 100 pts)		and of highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 05/22/2018
1	1	1	w-tmq-5/22/2018-03
max 6 pts.	subtotal	Metric 1. Wetland Area (size).  Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
4	5	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
11	16	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all to 100 year floodplai  Between stream/la  ✓ Part of riparian or 3d. Duration inundation/satu	n (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check intly inundated/saturated (4) ed/saturated (3) ated (2) ted in upper 30cm (12in) (1)
6	22	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) ✓ Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) ✓ Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed mowing Mowing Mowing Mowing More apparent (9) Recovering (3) Mowing	
SL	22 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichmen	nt

	Form Quantitative Rating	tor(s): T Ou	alio I Freer	<b>Date:</b> 05/22/2018
olte: Firsterie	ergy Holloway-Knox 138kV   Ra	<b>ter(s):</b> T. Qu	alio, J.Freei	Date: 05/22/2018
22	1			w-tmq-5/22/2018
22	_			
subtotal first p	page			
22	Metric 5. Special Wet	lands.		
ax 10 pts. subtotal	Check all that apply and score as indicate			
	Bog (10)			
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5)			
	Lake Erie coastal/tributary wetla		=	
	Lake Erie coastal/tributary wetla  Lake Plain Sand Prairies (Oak		logy (5)	
	Relict Wet Prairies (10)	Operings) (10)		
	Known occurrence state/federa			
	Significant migratory songbird/v		· · ·	
	Category 1 Wetland. See Ques	stion 1 Qualitative F	tating (-10)	
2 24	Metric 6. Plant comm	unitiae int	arenarsian microt	onography
		•	• •	opograpny.
ax 20 pts. subtotal	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	vegetation 0	Community Cover Scale Absent or comprises <0.1ha (0.2)	471 acres) contiguous area
	Aquatic bed	1	Present and either comprises sm	
	1 Emergent		vegetation and is of moderate	
	Shrub		significant part but is of low qu	_ ·
	Forest Mudflats	2	Present and either comprises sig vegetation and is of moderate	
	Open water		part and is of high quality	quality of complices a sina
	Other	3	Present and comprises significal	
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qualit	у
	Select only one. High (5)	Narrative D	escription of Vegetation Quality	
	Moderately high(4)	low	Low spp diversity and/or predom	inance of nonnative or
	Moderate (3)		disturbance tolerant native spe	
	Moderately low (2)	mod	Native spp are dominant compor	•
	✓ Low (1) None (0)		although nonnative and/or distriction also be present, and speci	
	6c. Coverage of invasive plants. Refer		moderately high, but generally	
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage	high	A predominance of native specie	
	or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native specie and/or disturbance tolerant nat	ive spp absent or virtually
	or deduct points for coverage	high	A predominance of native specie	ive spp absent or virtually and often, but not always,
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)		A predominance of native specie and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatene	ive spp absent or virtually and often, but not always,
	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)		A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality	ive spp absent or virtually and often, but not always,
	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.		A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres)	ive spp absent or virtually and often, but not always, ed, or endangered spp
	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)	Mudflat and	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality	ive spp absent or virtually and often, but not always, ed, or endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)	Mudflat and 0 1 2 in) 3	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)	ive spp absent or virtually and often, but not always, ed, or endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	Mudflat and 0 1 2 in) 3	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Copen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	ive spp absent or virtually and often, but not always, ed, or endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)	Mudflat and 0 1 2 in) 3	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8)	ive spp absent or virtually and often, but not always, ed, or endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	Mudflat and 0 1 2 in) 3 Microtopog	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	ive spp absent or virtually and often, but not always, ed, or endangered spp  cres) 8 acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	Mudflat and  0 1 2 in) 3 oh  Microtopog 0 1	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  Iraphy Cover Scale  Absent  Present very small amounts or if of marginal quality	ive spp absent or virtually and often, but not always, ed, or endangered spp  cres) 8 acres) more common
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	Mudflat and  0 1 2 in) 3 h Microtopog	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  Traphy Cover Scale  Absent  Present very small amounts or if of marginal quality  Present in moderate amounts, b	ive spp absent or virtually and often, but not always, ed, or endangered spp  cres) 8 acres)  more common  ut not of highest
tegory 1	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6)  Standing dead >25cm (10in) db	Mudflat and  0 1 2 in) 3 oh  Microtopog 0 1	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more  Iraphy Cover Scale  Absent  Present very small amounts or if of marginal quality	ive spp absent or virtually and often, but not always, ed, or endangered spp  cres) 8 acres)  more common  ut not of highest nighest quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): T. Qualio, J.Freer	<b>Date:</b> 05/22/2018
	0		w-tmq-5/22/2018-02
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
3	3	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
12	15	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all 100 year floodpla  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu	in (1) lake and other human use (1) cland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
6	21	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Redictive cutting Woody debris removal	tic bed removal
SI	ubtotal this pa	toxic pollutants nutrient enrichme	nt

RAM v. 5.0 Field	Form Quantitative Rating		Wetland NH
Site: FirstEne	ergy Holloway-Knox 138kV Rat	<b>:er(s):</b> T. Qua	alio, J.Freer <b>Date:</b> 05/22/2018
21	1		w-tmq-5/22/2018
subtotal first p	age		
0 21	1		
	Metric 5. Special Wetl		
max 10 pts. subtotal	Check all that apply and score as indicated Bog (10)	1.	
	Fen (10)		
	Old growth forest (10)  Mature forested wetland (5)		
	Lake Erie coastal/tributary wetla	•	<del></del>
	Lake Erie coastal/tributary wetla		logy (5)
	Lake Plain Sand Prairies (Oak C Relict Wet Prairies (10)	penings) (10)	
	Known occurrence state/federal	threatened or enda	angered species (10)
	Significant migratory songbird/w		• , ,
	Category 1 Wetland. See Ques	tion 1 Qualitative R	Rating (-10)
4 25			
T 25		-	erspersion, microtopography.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale
	Score all present using 0 to 3 scale.  Aquatic bed	0 1	Absent or comprises <0.1ha (0.2471 acres) contiguous area  Present and either comprises small part of wetland's
	1 Emergent	1	vegetation and is of moderate quality, or comprises a
	Shrub		significant part but is of low quality
	Forest	2	Present and either comprises significant part of wetland's
	Mudflats		vegetation and is of moderate quality or comprises a small
	Open water		part and is of high quality
	Other  6b. horizontal (plan view) Interspersion.	3	Present and comprises significant part, or more, of wetland vegetation and is of high quality
	Select only one.		vegetation and is or high quality
	High (5)	Narrative D	escription of Vegetation Quality
	Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
			Low opp diversity analog predominance of normative of
	Moderate (3)		disturbance tolerant native species
	Moderately low (2)	mod	disturbance tolerant native species  Native spp are dominant component of the vegetation,
	Moderately low (2) Low (1)	mod	disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
	Moderately low (2)  ✓ Low (1)  None (0)	mod	disturbance tolerant native species  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 low (2) Low (1)	mod	disturbance tolerant native species  Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
	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	mod	disturbance tolerant native species  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  A predominance of native species, with nonnative spp
	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)		disturbance tolerant native species  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  A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
	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)		disturbance tolerant native species  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  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,
	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)		disturbance tolerant native species  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  A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually
	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)	high	disturbance tolerant native species  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  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
	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.	high	disturbance tolerant native species  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  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  d Open Water Class Quality  Absent <0.1ha (0.247 acres)
	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.	high  Mudflat and  0 1	disturbance tolerant native species  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  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  A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks	Mudflat and 0 1 2	disturbance tolerant native species  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  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  A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii	Mudflat and 0 1 2 2 3	disturbance tolerant native species  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  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  A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii Standing dead >25cm (10in) dbr	Mudflat and 0 1 2 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	disturbance tolerant native species  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  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  Den Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii	Mudflat and 0 1 2 2 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	disturbance tolerant native species  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  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  A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii Standing dead >25cm (10in) dbr	Mudflat and 0 1 2 n) 3 Microtopog	disturbance tolerant native species  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  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  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii Standing dead >25cm (10in) dbr	high  Mudflat and  0  1  2  1  Microtopog  0  1	disturbance tolerant native species  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  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  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  praphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality
	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii Standing dead >25cm (10in) dbr	Mudflat and 0 1 2 n) 3 n Microtopog	disturbance tolerant native species  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  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  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  praphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest
tegory 1	Moderately low (2)  Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6ii Standing dead >25cm (10in) dbr	high  Mudflat and  0  1  2  1  Microtopog  0  1	disturbance tolerant native species  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  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  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  praphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/17/2018
4	4		w-mdt-5/17/2018-05
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
11	12	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falled HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
9	21	Metric 3. Hydrology.	
max 30 pts.	subtotal	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)  Part of wetland/up Part of vetland/up Part of vetland/up Part of vetland/up Part of wetland/up Part of vetland/up Part of vetland/up Part of vetland/up Part of wetland/up Part of vetland/up Part	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
7	28	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  Recovering (3)  Recent or no recovery (1)  Check all disturbances observed  Recovering (3)  Recent or no recovery (1)  Check all disturbances observed  A shrub/sapling removing grazing herbaceous/aqual sedimentation dredging	
SL	28  ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	ent

Site: FirstEnergy Holloway-Knox 138kV Rate	er(s): M. Th	omayer, J.Freer	<b>Date:</b> 5/17/2018
28			w-mdt-5/17/2018-05
subtotal first page			
0   28   Metric 5. Special Wetla	ınds.		
max 10 pts. subtotal 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 Lake Plain Sand Prairies (Oak Op	d-unrestricted hydro d-restricted hydro penings) (10)	ology (5)	
Known occurrence state/federal th		. , ,	
Significant migratory songbird/wat Category 1 Wetland. See Questic			
		·-····································	
-1   27   Metric 6. Plant commu	nities, int	erspersion, mic	rotopography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
Score all present using 0 to 3 scale.	0		a (0.2471 acres) contiguous area
Aquatic bed 1 Emergent	1	Present and either compris	es small part of wetland's erate quality, or comprises a
Shrub		significant part but is of lo	
Forest	2		es significant part of wetland's
Mudflats		•	erate quality or comprises a small
Open water		part and is of high quality	:figure and an arrange of continued a
Other 6b. horizontal (plan view) Interspersion.	3	vegetation and is of high	nificant part, or more, of wetland's
Select only one.		regetation and to or riight	- Control of the cont
High (5)	Narrative D	escription of Vegetation Qu	
Moderately high(4)	low		edominance of nonnative or
Moderate (3) Moderately low (2)	mod	disturbance tolerant nativ  Native spp are dominant co	•
Low (1)		''	r disturbance tolerant native spp
✓ None (0)		•	species diversity moderate to
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add			erally w/o presence of rare
or deduct points for coverage	high	threatened or endangered A predominance of native s	
Extensive >75% cover (-5)	3	·	nt native spp absent or virtually
✓ Moderate 25-75% cover (-3)			ersity and often, but not always,
Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, thre	atened, or endangered spp
Absent (1)	Mudflat and	d Open Water Class Quality	
6d. Microtopography.	0	Absent < 0.1ha (0.247 acre	s)
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2	
1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 than High 4ha (9.88 acres) or me	· · · · · · · · · · · · · · · · · · ·
Standing dead >25cm (10in) dbh		Triigit 4tia (9.00 acres) or the	ore
Amphibian breeding pools	Microtopog	raphy Cover Scale	
<del></del>	0	Absent	
	1	Present very small amounts	s or if more common
	2	of marginal quality  Present in moderate amount	nts, but not of highest
ategory 1	_	quality or in small amoun	=
	3	Present in moderate or great	
27		and of highest quality	
27 GRAND TOTAL (max 100 pts)			

Site: ⊦	irstEne	rgy Holloway-Knox 138kV   Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/17/2018
		<b>1</b>	w-mdt-5/17/2018-0
0	0	Metric 1. Wetland Area (size).	W-11101-5/1772016-0
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
4	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falld HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
10	14	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3d. Duration inundation/sate stream)  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)  Ab. Connectivity. Score all 100 year floodpla 1	in (1) lake and other human use (1) cland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1)
		Recovering (3) Recent or no recovery (1)  Itile Idike	x
4.5	18.5	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	<ul> <li>4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)</li> <li>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)</li> <li>4c. Habitat alteration. Score one or double check and average.</li> </ul>	
SI	18.5	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Check all disturbances observed mowing grazing clearcutting velective cutting woody debris removal toxic pollutants  Check all disturbances observed mowing velocity shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

	gy Holloway-Knox 138kV Rater(	s): M. Th	omayer, J.Freer	<b>Date:</b> 5/17/2018
40.5				w-mdt-5/17/2018
18.5				
subtotal first pag	je			
18.5	Metric 5. Special Wetlan	ds		
	Check all that apply and score as indicated.	us.		
ix 10 pts. Subtotal	Bog (10)			
	Fen (10)			
	Old growth forest (10)			
	Mature forested wetland (5)  Lake Erie coastal/tributary wetland-u	nrestricted hyd	drology (10)	
	Lake Erie coastal/tributary wetland-re	-		
	Lake Plain Sand Prairies (Oak Open			
	Relict Wet Prairies (10)			
	Known occurrence state/federal threa			
	Category 1 Wetland. See Question		• , ,	
. 1	Category 1 Welland. See Question	1 Qualitative 1	dung ( 10)	
<b>-4</b>   14.5	Metric 6. Plant communi	ities int	erspersion, micro	onography.
ax 20 pts. subtotal	6a. Wetland Vegetation Communities.	-	Community Cover Scale	.epeg.apy.
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.	2471 acres) contiguous are
	Aquatic bed	1	Present and either comprises s	•
	1 Emergent		vegetation and is of moderate	
	Shrub Forest	2	significant part but is of low qualificant part but is of low	
	Mudflats	۷	vegetation and is of moderate	-
	Open water		part and is of high quality	quanty or comprises a circ
	Other	3	Present and comprises significa-	ant part, or more, of wetland
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	ity
	Select only one. High (5)	Narrativo D	escription of Vegetation Quality	
	Moderately high(4)	low	Low spp diversity and/or predor	
	Moderate (3)		disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant compo	_
	Low (1)		although nonnative and/or dis	• • • • • • • • • • • • • • • • • • • •
	<ul><li>✓ None (0)</li><li>6c. Coverage of invasive plants. Refer</li></ul>		can also be present, and sper moderately high, but generall	-
	to Table 1 ORAM long form for list. Add		threatened or endangered sp	•
	or deduct points for coverage	high	A predominance of native spec	
	✓ Extensive >75% cover (-5)		and/or disturbance tolerant na	
	Moderate 25-75% cover (-3)		absent, and high spp diversity	and often, but not always,
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)			and often, but not always,
	Moderate 25-75% cover (-3)		absent, and high spp diversity the presence of rare, threater	and often, but not always,
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography.	Mudflat and	absent, and high spp diversity	and often, but not always,
	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.		absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47	and often, but not always, ed, or endangered spp
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks	0 1 2	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47  Moderate 1 to <4ha (2.47 to 9.	and often, but not always, ed, or endangered spp
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	0 1	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47	and often, but not always, ed, or endangered spp
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41) High 4ha (9.88 acres) or more	and often, but not always, ed, or endangered spp
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	0 1 2 3	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47  Moderate 1 to <4ha (2.47 to 9.	and often, but not always, ed, or endangered spp
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47) High 4ha (9.88 acres) or more	arand often, but not always, ed, or endangered spp  acres) 88 acres)
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 Microtopog 0 1	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  praphy Cover Scale Absent Present very small amounts or of marginal quality	acres) 388 acres) if more common
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 Microtopog	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  raphy Cover Scale Absent Present very small amounts or of marginal quality Present in moderate amounts, if	acres) 38 acres) if more common but not of highest
	Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 Microtopog 0 1	absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  praphy Cover Scale Absent Present very small amounts or of marginal quality	acres) 38 acres) if more common but not of highest highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer	<sup>-</sup> , J.Freer	<b>Date:</b> 5/17/2018
2	2	Metric 1. Wetland	Area (size).		w-mdt-5/17/2018-02
max 6 pts.	subtotal	Select one size class and assign sc  >50 acres (>20.2ha) (6 pt  25 to <50 acres (10.1 to <  10 to <25 acres (4 to <10.  3 to <10 acres (1.2 to <4h  ✓ 0.3 to <3 acres (0.12 to <  0.1 to <0.3 acres (0.04 to  <0.1 acres (0.04ha) (0 pts)	ore. s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
12	14	Metric 2. Upland b	uffers and surround	ding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width.  ✓ WIDE. Buffers average 5  MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth VERY LOW. Old field (>10 year MODERATELY HIGH. R	Select only one and assign score.  Om (164ft) or more around wetland e 25m to <50m (82 to <164ft) arour ge 10m to <25m (32ft to <82ft) aro s average <10m (<32ft) around wetl	Do not double check. I perimeter (7) nd wetland perimeter (4) bund wetland perimeter (1) land perimeter (0) d average. vildlife area, etc. (7) h forest. (5) enservation tillage, new fallo	ow field. (3)
19	33	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3)  Precipitation (1) Seasonal/Intermittent surful Perennial surface water (I) 3c. Maximum water depth. Select (I) >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in)   0.4 m (<15.7in) (1) 3e. Modifications to natural hydrolo	at apply.  ace water (3) ake or stream) (5) only one and assign score.	Part of wetland/up Part of riparian or d. Duration inundation/satu Semi- to permane Regularly inundat Seasonally inundat Seasonally satura	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ed/saturated (3)
6.5	39.5	None or none apparent (1  ✓ Recovered (7)  ✓ Recovering (3)  Recent or no recovery (1)	Check all disturbances observed ditch tile dike weir stormwater input	point source (non: filling/grading road bed/RR track dredging other	·
max 20 pts.	subtotal	Metric 4. Habitat A  4a. Substrate disturbance. Score of		iopment.	
		None or none apparent (4  Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select or Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one o	nly one and assign score.		
S	39.5	None or none apparent (9 Recovered (6) Recovering (3) Recent or no recovery (1)	✓ mowing grazing	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

Site: FirstEnergy Holloway-Knox 138kV Rater(	s): M. Th	omayer, J.Freer	<b>Date:</b> 5/17/2018
			w-mdt-5/17/2018-02
39.5			
subtotal first page			
0 39.5 Metric 5. Special Wetlan	ds.		
max 10 pts. subtotal Check all that apply and score as indicated.	uo.		
Bog (10)			
Fen (10) Old growth forest (10)			
Mature forested wetland (5)			
Lake Erie coastal/tributary wetland-u Lake Erie coastal/tributary wetland-re		=	
Lake Plain Sand Prairies (Oak Open	-	logy (5)	
Relict Wet Prairies (10)			
Known occurrence state/federal three Significant migratory songbird/water		• , , ,	
Category 1 Wetland. See Question			
4 43.5 Metric 6 Plant communi			
iwietric o. Flant communi		-	opograpny.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	Vegetation 0	Community Cover Scale Absent or comprises <0.1ha (0.2)	2471 acres) contiguous area
Aquatic bed	1	Present and either comprises sn	
2 Emergent		vegetation and is of moderate	
Shrub Forest	2	significant part but is of low qu  Present and either comprises significant part but is of low qu	
Mudflats		vegetation and is of moderate	
Open water Other	3	part and is of high quality  Present and comprises significal	nt nart or more of wetland's
6b. horizontal (plan view) Interspersion.		vegetation and is of high qualit	
Select only one.			
High (5)  Moderately high(4)	low	escription of Vegetation Quality  Low spp diversity and/or predom	inance of nonnative or
Moderate (3)		disturbance tolerant native spe	ecies
Moderately low (2) Low (1)	mod	Native spp are dominant comportant although nonnative and/or dist	_
✓ None (0)		can also be present, and speci	• • • • • • • • • • • • • • • • • • • •
6c. Coverage of invasive plants. Refer		moderately high, but generally	
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered spp A predominance of native species	
Extensive >75% cover (-5)	J	and/or disturbance tolerant nat	ive spp absent or virtually
Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threatene	
Nearly absent <5% cover (0)		the presence of fare, threatene	ou, or chadingered 3pp
Absent (1)		Open Water Class Quality	
6d. Microtopography. Score all present using 0 to 3 scale.	<u>0</u> 1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a	icres)
2 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	
Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	High 4ha (9.88 acres) or more	
1 Amphibian breeding pools	Microtopog	raphy Cover Scale	
	0	Absent	
	1	Present very small amounts or if of marginal quality	more common
	2	Present in moderate amounts, b	ut not of highest
odified 2		quality or in small amounts of I	
	3	Present in moderate or greater a and of highest quality	IMOUNTS
43.5 GRAND TOTAL (max 100 pts)		. , , , , , , , , , , , , , , , , , , ,	

Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> M. Thomayer, J.Freer	<b>Date:</b> 5/17/2018
0	0		ndt-5/17/2018-3a-3b
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <	
10	10	Metric 2. Upland buffers and surrounding land use	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
10	20	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all 100 year floodpl  Between stream  Part of wetland/  Part of riparian of 3d. Duration inundation/sa 3d. Duration inundation/sa 3d. Regularly inundation/sa 3d. Seasonally	ain (1) //lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) turation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3) dated (2) rated in upper 30cm (12in) (1)
6	26	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal 26	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  ✓ shrub/sapling re herbaceous/aquisition dredging  ✓ selective cutting  ✓ selective cutting  ✓ selective cutting  ✓ farming	moval atic bed removal
SI	ubtotal this pa	toxic pollutants nutrient enrichm	ent

Site: FirstEr	nergy Holloway-Knox 138kV	Rater(s): M. Th	nomayer, J.Freer	<b>Date:</b> 5/17/2018
26	٦			w-mdt-5/17/2018-3a
26				
subtotal firs	t page			
0 26	Metric 5. Special W	etlands.		
max 10 pts. subtota				
	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)	)		
	Lake Erie coastal/tributary	,	drology (10)	
	Lake Erie coastal/tributary			
	Lake Plain Sand Prairies (C	Oak Openings) (10)		
	Relict Wet Prairies (10)		lana and an acida (40)	
	Known occurrence state/fed Significant migratory songb			
	Category 1 Wetland. See			
	¬ — · ·		······································	
-1   25	Metric 6. Plant com	munities, int	terspersion, mid	rotopography.
max 20 pts. subtoti	<b>-</b>	•	Community Cover Scale	ar ete pe grapity.
max 20 ptc. Cubics	Score all present using 0 to 3 scale.	0		ha (0.2471 acres) contiguous area
	Aquatic bed	1	Present and either compris	
	1 Emergent			derate quality, or comprises a
	Shrub		significant part but is of I	
	Forest Mudflats	2		ses significant part of wetland's derate quality or comprises a sma
	Open water		part and is of high quality	
	Other	_ 3	1 .	gnificant part, or more, of wetland
	6b. horizontal (plan view) Interspersion	on.	vegetation and is of high	quality
	Select only one.			•••
	High (5)  Moderately high(4)	Narrative D	Description of Vegetation Qu	redominance of nonnative or
	Moderate (3)	IOW	disturbance tolerant nati	
	Moderately low (2)	mod		component of the vegetation,
	Low (1)		7.7	or disturbance tolerant native spp
	✓ None (0)	_		d species diversity moderate to
	6c. Coverage of invasive plants. Ref			nerally w/o presence of rare
	to Table 1 ORAM long form for list. A or deduct points for coverage	high	threatened or endangered	species, with nonnative spp
	Extensive >75% cover (-5)	iligii		ant native spp absent or virtually
	✓ Moderate 25-75% cover (-3	3)		versity and often, but not always,
	Sparse 5-25% cover (-1)		the presence of rare, thr	eatened, or endangered spp
	Nearly absent <5% cover (	,	d Onen Water Class Ovelity	_
	Absent (1) 6d. Microtopography.	<u>wudilat an</u>	d Open Water Class Quality Absent <0.1ha (0.247 acr	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to	
	1 Vegetated hummucks/tuss	ucks 2	Moderate 1 to <4ha (2.47	<u> </u>
	Coarse woody debris >15cl		High 4ha (9.88 acres) or m	nore
	Standing dead >25cm (10ir	•		
	Amphibian breeding pools	Microtopog 0	graphy Cover Scale Absent	
			Present very small amoun	ts or if more common
			of marginal quality	
		2	Present in moderate amou	unts, but not of highest
tegory 1			quality or in small amour	
		3	Present in moderate or gre	eater amounts
25 <b>GR</b> /	AND TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/17/2018
0	0	Metric 1. Wetland Area (size).	w-mdt-5/17/2018-04
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
10	10	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallowed the field (>10 years), industrial, open pasture, row cropping, mining, construction. (1)	
10	20	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all 100 year floodpla  Between stream/I  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) lake and other human use (1) lake and other human use (1) land (e.g. forest), complex (1) lupland corridor (1) luration. Score one or dbl check ently inundated/saturated (4) led/saturated (3) lated (2) lated in upper 30cm (12in) (1) later stormwater)
6	26	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  Recovering (3)  Check all disturbances observed  Recovering (3)  Annual series of the se	
SU	26 ubtotal this pa	Recent or no recovery (1)  clearcutting selective cutting woody debris removal toxic pollutants  sedimentation dredging farming nutrient enrichme	

RAM v. 5.0 Field Form Quantitative Rating		Wetland N
Site: FirstEnergy Holloway-Knox 138kV Rater	(s): M. Th	omayer, J.Freer Date: 5/17/2018
26		w-mdt-5/17/2018
26 Metric 5 Special Wetlar	nde	
ivieti ic 5. Special wetial	ius.	
Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Ope Relict Wet Prairies (10) Known occurrence state/federal thru	restricted hydro nings) (10)	logy (5)
Significant migratory songbird/wate Category 1 Wetland. See Question	r fowl habitat or n 1 Qualitative R	usage (10)
ax 20 pts. subtotal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous ar
Aquatic bed  Emergent Shrub	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
Forest Mudflats Open water	2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a sm part and is of high quality
OtherOther	3	Present and comprises significant part, or more, of wetlar vegetation and is of high quality
Select only one.		
High (5)  Moderately high(4)  Moderate (3)	Narrative D	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
Moderately low (2) Low (1)	mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native sp
None (0)  6c. Coverage of invasive plants. Refer		can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered spp  A predominance of native species, with nonnative spp
Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	ingii	and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always
Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
INEARLY ADSERT <5% COVER (U)	Mudflat and	Open Water Class Quality
Nearly absent <5% cover (0) Absent (1)		Absent <0.1ha (0.247 acres)
Absent (1) 6d. Microtopography.	0	` '
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.	0	Low 0.1 to <1ha (0.247 to 2.47 acres)
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	0 1 2	Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	0	Low 0.1 to <1ha (0.247 to 2.47 acres)
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3	Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	0 1 2 3	Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0 1	Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality
Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0	Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer	, J.Freer	<b>Date:</b> 5/16/2018
0	0	Metric 1. Wetland	Area (size).		w-mdt-5/16/2018-04
max 6 pts.	subtotal	Select one size class and assign sc    >50 acres (>20.2ha) (6 pt)   25 to <50 acres (10.1 to <   10 to <25 acres (4 to <10.   3 to <10 acres (1.2 to <4h   0.3 to <3 acres (0.12 to <   0.1 to <0.3 acres (0.04 to    ✓ <0.1 acres (0.04ha) (0 pts)	ore. s) :20.2ha) (5 pts) 1ha) (4 pts) :a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
12	12	Metric 2. Upland b	uffers and surround	ding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width.  ✓ WIDE. Buffers average 5  MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land us VERY LOW. 2nd growth ✓ LOW. Old field (>10 year	Select only one and assign score.  Om (164ft) or more around wetland e 25m to <50m (82 to <164ft) arour ge 10m to <25m (32ft to <82ft) arous s average <10m (<32ft) around wetland	Do not double check. perimeter (7) nd wetland perimeter (4) und wetland perimeter (1) land perimeter (0) d average. vildlife area, etc. (7) n forest. (5) nservation tillage, new fallo	ow field. (3)
12.5	24.5	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surl Perennial surface water (I) 3c. Maximum water depth. Select of Solid S	race water (3) ake or stream) (5) only one and assign score.	Part of wetland/up Part of riparian or Duration inundation/satu	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ed/saturated (3)
		✓ <0.4m (<15.7in) (1)  3e. Modifications to natural hydrolo  None or none apparent (1  ✓ Recovered (7)  ✓ Recovering (3)  Recent or no recovery (1)	gic regime. Score one or double ch  Check all disturbances observe ditch tile	Seasonally saturaneck and average.	stormwater)
6	30.5	   Metric 4. Habitat A	Iteration and Devel	lopment.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score of None or none apparent (4 Recovered (3)  ✓ Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select or Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one o	one or double check and average. )  nly one and assign score.		
q	30.5	None or none apparent (9 Recovered (6) ✓ Recovering (3) Recent or no recovery (1)	Check all disturbances observed mowing grazing	shrub/sapling rem herbaceous/aquar sedimentation dredging farming nutrient enrichme	tic bed removal

	rgy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, J.Freer	<b>Date:</b> 5/16/2018
	1			w-mdt-5/16/2018
30.5				
subtotal first pa	∎ age			
0 30.5		_		
0 30.5	Metric 5. Special Wetlar	าds.		
max 10 pts. subtotal	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 hyd	drology (10)	
	Lake Erie coastal/tributary wetland-		ology (5)	
	Lake Plain Sand Prairies (Oak Oper	nings) (10)		
	Relict Wet Prairies (10)  Known occurrence state/federal thre	eatened or end	angered species (10)	
	Significant migratory songbird/water			
	Category 1 Wetland. See Question		<u> </u>	
4 045	1 —			
1 31.5	Metric 6. Plant commun	ities, int	terspersion, microt	opography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	
	Aquatic bed	1	Present and either comprises sn	
	1 Emergent Shrub		vegetation and is of moderate significant part but is of low qu	
	Forest	2	Present and either comprises sig	
	Mudflats		vegetation and is of moderate	
	Open water		part and is of high quality	
	Other	3	Present and comprises significant	
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high qualit	у
		Narrative D	Description of Vegetation Quality	
	High (5) Moderately high(4)	low	Low spp diversity and/or predom	inance of nonnative or
	Moderately high(4) Moderate (3)	low	disturbance tolerant native spe	cies
	Moderately high(4) Moderate (3) Moderately low (2)	low	disturbance tolerant native spe Native spp are dominant compo	ecies nent of the vegetation,
	Moderately high(4) Moderate (3) Moderately low (2) Low (1)		disturbance tolerant native spe Native spp are dominant compor although nonnative and/or dist	ecies nent of the vegetation, urbance tolerant native sp
	Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  ✓ None (0)		Native spp are dominant comport although nonnative and/or dist can also be present, and specific distributions.	nent of the vegetation, urbance tolerant native spices diversity moderate to
	Moderately high(4) Moderate (3) Moderately low (2) Low (1)		disturbance tolerant native spe Native spp are dominant compor although nonnative and/or dist	nent of the vegetation, urbance tolerant native spices diversity moderate to w/o presence of rare
	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		disturbance tolerant native spe Native spp are dominant comport although nonnative and/or dist can also be present, and spect moderately high, but generally threatened or endangered spp A predominance of native species	nent of the vegetation, urbance tolerant native spices diversity moderate to w/o presence of rare
	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)	mod	disturbance tolerant native spe Native spp are dominant comport although nonnative and/or dist can also be present, and spect moderately high, but generally threatened or endangered spp A predominance of native species and/or disturbance tolerant native	nent of the vegetation, urbance tolerant native spices diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually
	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)	mod	disturbance tolerant native spe  Native spp are dominant comport although nonnative and/or dist can also be present, and spect moderately high, but generally threatened or endangered spp  A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity	nent of the vegetation, urbance tolerant native spices diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always
	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)	mod	disturbance tolerant native spe Native spp are dominant comport although nonnative and/or dist can also be present, and spect moderately high, but generally threatened or endangered spp A predominance of native species and/or disturbance tolerant native	nent of the vegetation, urbance tolerant native spices diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always
	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)	high	disturbance tolerant native specific Native spp are dominant composite although nonnative and/or district can also be present, and specific moderately high, but generally threatened or endangered spp. A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened.	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always
	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.	high  Mudflat and	disturbance tolerant native specifications of the presence of rare, threatened of Open Water Class Quality  disturbance tolerant native specifications of the present of the presence of the p	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered spp
	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.	high  Mudflat and 0 1	disturbance tolerant native specifications of the presence of rare, threatened of the presence	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppicres)
	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.	high  Mudflat and  0 1 2	disturbance tolerant native specific Native spp are dominant composite although nonnative and/or district can also be present, and specific moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened dopen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 and Moderate 1 to <4ha (2.47 to 9.8)	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppicres)
	Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	high  Mudflat and 0 1	disturbance tolerant native specifications of the presence of rare, threatened of the presence	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppicres)
	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.	high  Mudflat and  0 1 2 3	disturbance tolerant native specific Native spp are dominant composite although nonnative and/or district can also be present, and specific moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened dopen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 and Moderate 1 to <4ha (2.47 to 9.8)	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppicres)
	Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  ✓ None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	disturbance tolerant native specific Native spp are dominant composite although nonnative and/or district can also be present, and specific moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant nationabsent, and high spp diversity the presence of rare, threatened domain of the presence of the control of the co	nent of the vegetation, urbance tolerant native spaces diversity moderate to w/o presence of rare es, with nonnative sppaive spp absent or virtually and often, but not always ed, or endangered sppecres)  8 acres)
	Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  ✓ None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	disturbance tolerant native specific Native spp are dominant composite although nonnative and/or district can also be present, and specific moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant nationabsent, and high spp diversity the presence of rare, threatened downward of the presence of the control of the	nent of the vegetation, urbance tolerant native spaces diversity moderate to w/o presence of rare es, with nonnative sppaive spp absent or virtually and often, but not always ed, or endangered sppecres)
	Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  ✓ None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3  Microtopog	disturbance tolerant native specific parts of marginal quality  disturbance tolerant native specific parts of marginal quality  disturbance tolerant native and/or disturbance of native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant specific and/or disturbance tolerant native specific and/or disturbance tolerant native specific and spec	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppecres)  8 acres)
2 2	Moderately high(4)  Moderately low (2)  Low (1)  ✓ None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools	high  Mudflat and 0 1 2 3	disturbance tolerant native specific parts of marginal quality  Altive spp are dominant composition although nonnative and/or district can also be present, and specific parts of moderately high, but generally threatened or endangered spp.  A predominance of native specific and/or disturbance tolerant nationabsent, and high spp diversity the presence of rare, threatened domain of the presence of the composition of the compositio	nent of the vegetation, urbance tolerant native spies diversity moderate to w/o presence of rare es, with nonnative sppive spp absent or virtually and often, but not always ed, or endangered sppecres)  more common  ut not of highest
or 2 gray zor	Moderately high(4)  Moderately low (2)  Low (1)  ✓ None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1) 6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools	high  Mudflat and 0 1 2 3  Microtopog	disturbance tolerant native specific parts of marginal quality  disturbance tolerant native specific parts of marginal quality  disturbance tolerant native and/or disturbance of native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant native specific and/or disturbance tolerant native absent, and high spp diversity the presence of rare, threatened  disturbance tolerant specific and/or disturbance tolerant native specific and/or disturbance tolerant native specific and spec	nent of the vegetation, urbance tolerant native sp les diversity moderate to w/o presence of rare es, with nonnative spp live spp absent or virtually and often, but not always ed, or endangered spp  cres) 8 acres)  more common  ut not of highest nighest quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/16/2018
0	0	Metric 1. Wetland Area (size).	w-mdt-5/16/2018-0
max 6 pts.	subtotal	Select one size class and assign score.    50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
12	12	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  — MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  — NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  — VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  — VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  — MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falld HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
12	24	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Part of wetland/u  Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) rupland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
6	30	weir dredging other stormwater input other	
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) Very or (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) Recent or no recovery (1)  Check all disturbances observed Recovered (6) Very good (6) Recovering (3) Recent or no recovery (1)	
eı	30 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	nt

Site: Firs	tEnergy	Holloway-Knox 138kV	Rater(s): M. Th	omayer, J.Freer	<b>Date:</b> 5/16/2018
					w-mdt-5/16/2018-0
3	30				
subtot	tal first page				
0	80 N				
0 3		letric 5. Special W	/etlands.		
max 10 pts. s	subtotal Ch	eck all that apply and score as inc	dicated.		
		Bog (10) Fen (10)			
		Old growth forest (10)			
		Mature forested wetland (5	,		
		Lake Erie coastal/tributary  Lake Erie coastal/tributary	-		
		Lake Plain Sand Prairies (	•	ology (o)	
		Relict Wet Prairies (10)			
		Known occurrence state/fe			
		Significant migratory song Category 1 Wetland. See			
, ,		category i Welland. Coo	Quotion i Quantativo i	tamig ( 10)	
1  3	31   <sub>N</sub>	letric 6. Plant con	nmunities, int	terspersion, microt	opography.
max 20 pts. s		. Wetland Vegetation Communitie	· · · · · · · · · · · · · · · · · · ·	Community Cover Scale	1 5 1 7
		ore all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	
		Aquatic bed	1	Present and either comprises sr	
		1 Emergent Shrub		vegetation and is of moderate significant part but is of low qu	
		Forest	2	Present and either comprises si	gnificant part of wetland's
		Mudflats		vegetation and is of moderate	quality or comprises a small
		Open water Other	3	part and is of high quality  Present and comprises significa	nt nart or more of wetland's
	6b.	horizontal (plan view) Interspers		vegetation and is of high quali	
	Se	lect only one.			
		High (5)		Description of Vegetation Quality	singnes of popportive or
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predon disturbance tolerant native spe	
		Moderately low (2)	mod	Native spp are dominant compo	nent of the vegetation,
		Low (1)		although nonnative and/or dist	
	6c.	✓ None (0)  Coverage of invasive plants. Re	efer	can also be present, and spec moderately high, but generally	-
		Table 1 ORAM long form for list.		threatened or endangered spp	•
	or	deduct points for coverage	high	A predominance of native speci	
		Extensive >75% cover (-5)  Moderate 25-75% cover (-		and/or disturbance tolerant na absent, and high spp diversity	
		✓ Sparse 5-25% cover (-1)	0)	the presence of rare, threaten	
		Nearly absent <5% cover			
	64	Absent (1)		Absent <0.1ha (0.247 acres)	
		. Microtopography. ore all present using 0 to 3 scale.	<u> </u>	Low 0.1 to <1ha (0.247 acres)	acres)
		1 Vegetated hummucks/tuss	sucks 2	Moderate 1 to <4ha (2.47 to 9.8	
		Coarse woody debris >150	, ,	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10 Amphibian breeding pools	•	graphy Cover Scale	
		Amphibian breeding pools	0	Absent	
			1	Present very small amounts or i	f more common
				of marginal quality	and not not block and
. m O	<b></b>		2	Present in moderate amounts, be quality or in small amounts of	_
or 2 gray	zone		3	Present in moderate or greater	
24				and of highest quality	
31 <b>G</b>	RAND	TOTAL (max 100 pts)			

Site: FirstEnergy Holloway-Knox 138kV		rgy Holloway-Knox 138kV	Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/16/2018
	_			w-mdt-5/16/2018-01
0	0	Metric 1. Wetland A	•	
max 6 pts.	subtotal	Select one size class and assign scc >50 acres (>20.2ha) (6 pts 25 to <50 acres (10.1 to 10 to <25 acres (4 to <10.) 3 to <10 acres (1.2 to <4h 0.3 to <3 acres (0.12 to <1 0.1 to <0.3 acres (0.04 to </</th <th>c) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) &lt;0.12ha) (1 pt)</th> <th></th>	c) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) .2ha) (2pts) <0.12ha) (1 pt)	
10	10	Metric 2. Upland bu	uffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width.  ✓ WIDE. Buffers average 50  MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers 2b. Intensity of surrounding land use VERY LOW. 2nd growth of LOW. Old field (>10 years ✓ MODERATELY HIGH. Re	Select only one and assign score. Do not double check. Om (164ft) or more around wetland perimeter (7) a 25m to <50m (82 to <164ft) around wetland perimeter (4) ge 10m to <25m (32ft to <82ft) around wetland perimeter (1) average <10m (<32ft) around wetland perimeter (0) a. Select one or double check and average. Or older forest, prairie, savannah, wildlife area, etc. (7) s), shrubland, young second growth forest. (5) residential, fenced pasture, park, conservation tillage, new fall pen pasture, row cropping, mining, construction. (1)	
12.5	22.5	Metric 3. Hydrology	<i>I</i> .	
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surfation Perennial surface water (late 1)  3c. Maximum water depth. Select of 100 sources (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in)  ✓ <0.4m (<15.7in) (1)	t apply.  3b. Connectivity. Score all  100 year floodpla  Between stream, Part of wetland/u Part of riparian o  ske or stream) (5) nly one and assign score.  3d. Duration inundation/sat Semi- to perman Regularly inunda V Seasonally inund V Seasonally satur gic regime. Score one or double check and average.	ain (1) //ake and other human use (1) //ake and other human use (1) //ake and other human use (1) //apland (e.g. forest), complex (1) r upland corridor (1) //arration. Score one or dbl check. //arration. Score
6	28.5	Metric 4. Habitat A	Iteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select on Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or None or none apparent (9) Recovered (6) Recovering (3)	double check and average.  double check and average.  Check all disturbances observed shrub/sapling rer herbaceous/aqua	
SU	28.5	Recent or no recovery (1)	clearcutting ✓ selective cutting woody debris removal toxic pollutants ✓ sedimentation dredging farming nutrient enrichment	ent

PRAM v. 5.0 Field Form Quantitative Ration	ng			Wetland NH
<b>Site:</b> FirstEnergy Holloway-Kr	nox 138kV Ra	ter(s): M. Th	omayer, J.Freer	<b>Date:</b> 5/16/2018
00.5				w-mdt-5/16/2018-0
28.5				
subtotal first page				
<sup>)</sup> 28.5 Metric 5. S	Special Wet	lands.		
	and score as indicate	d.		
Bog (10) Fen (10)				
Old growth	n forest (10)			
	ested wetland (5)		dual a sur (4.0)	
	coastal/tributary wetla coastal/tributary wetla	•		
	Sand Prairies (Oak (			
	Prairies (10)			
	currence state/federal : migratory songbird/v		. , ,	
	i Metland. See Ques		• , ,	
	. Tronanar ooo quo	, and a second second	.ag ( 10)	
·3 25.5 Metric 6. F	Plant comm	unities, int	erspersion, mic	rotopography.
ax 20 pts. subtotal 6a. Wetland Vegeta		•	Community Cover Scale	
Score all present usi		0		a (0.2471 acres) contiguous area
Aquatic be	ed	1	Present and either compris	
1 Emergent			_	erate quality, or comprises a
Shrub			significant part but is of lo	
Forest Mudflats		2		ses significant part of wetland's erate quality or comprises a small
Open water	er		part and is of high quality	
Other		3	1	nificant part, or more, of wetland's
6b. horizontal (plan	view) Interspersion.		vegetation and is of high	quality
Select only one.		N (1 B		
High (5) Moderately	v high(4)	Narrative D	escription of Vegetation Qu	redominance of nonnative or
Moderate		IOW	disturbance tolerant nativ	
Moderately	, ,	mod		omponent of the vegetation,
Low (1)	, , ,		1 ' '	or disturbance tolerant native spp
✓ None (0)				species diversity moderate to
6c. Coverage of inva			-	erally w/o presence of rare
to Table 1 ORAM lor or deduct points for o		high	A predominance of native s	a spp species, with nonnative spp
:	>75% cover (-5)	iligii		nt native spp absent or virtually
Moderate :	25-75% cover (-3)			ersity and often, but not always,
	25% cover (-1)		the presence of rare, three	eatened, or endangered spp
	sent <5% cover (0)	Mondflatan	d Onen Water Class Ovality	
Absent (1) 6d. Microtopography		0	Absent <0.1ha (0.247 acre	25)
Score all present usi		1	Low 0.1 to <1ha (0.247 to 2	,
•	hummucks/tussucks	2	Moderate 1 to <4ha (2.47	
	oody debris >15cm (6		High 4ha (9.88 acres) or m	ore
	dead >25cm (10in) db			
Amphibian	breeding pools	Microtopog 0	raphy Cover Scale Absent	
		1	Present very small amount	s or if more common
			of marginal quality	
		2	Present in moderate amou	
tegory 1			quality or in small amoun	
		3	Present in moderate or gre	ater amounts
25.5 <b>GRAND TOTAL</b> (ma	nx 100 nte)		and of highest quality	
	100 DIGI			

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/16/2018
0	0		w-mdt-5/16/2018-02
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.      >50 acres (>20.2ha) (6 pts)     25 to <50 acres (10.1 to <20.2ha) (5 pts)     10 to <25 acres (4 to <10.1ha) (4 pts)     3 to <10 acres (1.2 to <4ha) (3 pts)     0.3 to <3 acres (0.12 to <1.2ha) (2pts)     0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)       <0.1 acres (0.04ha) (0 pts)	
10	10	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
7	17	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundate  Seasonally inundate	n (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) tted in upper 30cm (12in) (1)
6	23	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances observed Recovering (3) Grazing Herbaceous/aquated sedimentation Gredging Woody debris removal  Fair (3) Fair (3	tic bed removal
SL	ubtotal this pa	toxic pollutants nutrient enrichmen	nt

ORAM v. 5.0	Field Forn	n Quantitative Rating			Wetland NH-46
			Rater(s): M. Tho	mayer, J.Freer	<b>Date:</b> 5/16/2018
	23 tal first page				w-mdt-5/16/2018-02
0 2	23	Metric 5. Special W	/etlands.		
max 10 pts. s		Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary Lake Plain Sand Prairies ( Relict Wet Prairies (10) Known occurrence state/fe Significant migratory song Category 1 Wetland. See	dicated.  wetland-unrestricted hydrowetland-restricted hydrowetland-restricted hydrowood (10)  aderal threatened or endatoird/water fowl habitat or the	ngered species (10) usage (10)	
2 2	25 N	/letric 6. Plant con	nmunities, inte	erspersion, micro	otopography.
max 20 pts. s	subtotal 6a	a. Wetland Vegetation Communitie	es. <u>Vegetation C</u>	Community Cover Scale	
	So	core all present using 0 to 3 scale.  Aquatic bed Emergent Shrub	1	Present and either comprises vegetation and is of modera significant part but is of low	te quality, or comprises a
		Forest Mudflats Open water	2	Present and either comprises	
		Other  . horizontal (plan view) Interspers	3 ion.		cant part, or more, of wetland's ality
	36	elect only one. High (5)	Narrative De	scription of Vegetation Quali	ty
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or preddisturbance tolerant native s	ominance of nonnative or
		Moderately low (2) Low (1)  ✓ None (0)  Coverage of invasive plants. Re		can also be present, and sp moderately high, but genera	isturbance tolerant native spp ecies diversity moderate to ally w/o presence of rare
		Table 1 ORAM long form for list.  deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-5)  Sparse 5-25% cover (-1)	high		icies, with nonnative spp native spp absent or virtually ity and often, but not always,
		Nearly absent <5% cover (Absent (1)		Open Water Class Quality	
	60	I. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		core all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	·
		1 Vegetated hummucks/tuss		Moderate 1 to <4ha (2.47 to 9	
		Coarse woody debris >150 Standing dead >25cm (10)		High 4ha (9.88 acres) or more	;
		Amphibian breeding pools		aphy Cover Scale	
			0	Absent	
			1	Present very small amounts of	r if more common
			2	of marginal quality	but not of highest
ntogony 1	1	٦	2	Present in moderate amounts quality or in small amounts	
ategory 1	I	_	3	Present in moderate or greate	
25 <b>G</b>	RAND	TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer	<b>Date:</b> 5/16/2018
0	0	Metric 1. Wetland Area (size).	w-mdt-5/16/2018-03
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
10	10	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falled HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
12.5	22.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  3b. Connectivity. Score all 100 year floodpla Between stream/ Part of wetland/u  Part of wetland/u	in (1) lake and other human use (1) pland (e.g. forest), complex (1)
		Perennial surface water (lake or stream) (5)  3d. Duration inundation/sate  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)  3d. Duration inundation/sate  Semi- to permane  Regularly inundat  ✓ Seasonally inundation/sate	
		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)  Check all disturbances observed  Joint Source (non filling/grading road bed/RR trace dredging other dredging other other dredging other stormwater input	·
6	28.5	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)	
		Moderately good (4) Fair (3) Poor to fair (2) V Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Check all disturbances observed	
51	28.5	Recovered (6) Recovering (3) Recent or no recovery (1)	ttic bed removal

Site: FirstEn	ergy Holloway-Knox 138kV Rate	r(s): M. Th	nomayer, J.Freer	<b>Date:</b> 5/16/2018
28.5				w-mdt-5/16/2018
subtotal first	<b>1</b>			
0 28.5	Metric 5. Special Wetla	nds.		
max 10 pts. subtotal				
	Bog (10) Fen (10)			
	Old growth forest (10)			
	Mature forested wetland (5)			
	Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland-		=	
	Lake Plain Sand Prairies (Oak Ope		ology (3)	
	Relict Wet Prairies (10)	<b>3</b> / (		
	Known occurrence state/federal thr			
	Significant migratory songbird/wate Category 1 Wetland. See Question			
	Category I Wetland. See Question	i i Qualitative i	realing (-10)	
<b>-2</b> 26.5	Metric 6. Plant commur	nities in	terspersion, microt	opography
max 20 pts. subtotal	<b></b>	-	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	
	Aquatic bed	1	Present and either comprises sr	•
	1 Emergent		vegetation and is of moderate	
	Shrub Forest	2	significant part but is of low queries and either comprises si	
	Mudflats	_	vegetation and is of moderate	-
	Open water		part and is of high quality	
	Other	3	Present and comprises significa	
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high quali	ty
	High (5)	Narrative [	Description of Vegetation Quality	
	Moderately high(4)	low	Low spp diversity and/or predom	
	Moderate (3)		disturbance tolerant native spe	
	Moderately low (2) Low (1)	mod	Native spp are dominant compo although nonnative and/or dist	
	✓ None (0)		can also be present, and spec	
	6c. Coverage of invasive plants. Refer		moderately high, but generally	-
	to Table 1 ORAM long form for list. Add		threatened or endangered spp	
	or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native specie and/or disturbance tolerant na	
	Moderate 25-75% cover (-3)		absent, and high spp diversity	
	Sparse 5-25% cover (-1)		the presence of rare, threaten	
	Nearly absent <5% cover (0)			
	Absent (1)		d Open Water Class Quality	
	6d. Microtopography.  Score all present using 0 to 3 scale.	0	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a	acres)
	1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) dbh			
	1 Amphibian breeding pools	Microtopo 0	graphy Cover Scale Absent	
		1	Present very small amounts or i	f more common
			of marginal quality	
.4 4		2	Present in moderate amounts, b	_
ategory 1		3	quality or in small amounts of	
		3	Present in moderate or greater a and of highest quality	amounts
26.5 GRA	ND TOTAL (max 100 pts)		and or rigition quality	

Site: FirstEnergy Holloway-Knox 138kV		rgy Holloway-Knox 138kV Rater(s):	M. Thomayer, J.Freer	<b>Date:</b> 5/15/2018
0	0			
0	0	Metric 1. Wetland Area (size	e).	w-mdt-5/15/2018-06
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  ✓ <0.1 acres (0.04ha) (0 pts)		
10	10	Metric 2. Upland buffers an	d surrounding land us	se.
max 14 pts.	subtotal	<ul> <li>2a. Calculate average buffer width. Select only one</li> <li>✓ WIDE. Buffers average 50m (164ft) or m</li> <li>MEDIUM. Buffers average 25m to &lt;50m</li> <li>NARROW. Buffers average 10m to &lt;25m</li> <li>VERY NARROW. Buffers average &lt;10m</li> <li>2b. Intensity of surrounding land use. Select one of VERY LOW. 2nd growth or older forest, ILOW. Old field (&gt;10 years), shrubland, you</li> <li>✓ MODERATELY HIGH. Residential, fence</li> <li>HIGH. Urban, industrial, open pasture, ro</li> </ul>	ore around wetland perimeter (7) (82 to <164ft) around wetland perimeter or (32ft to <82ft) around wetland perimeter (<32ft) around wetland perimeter (0) or double check and average. Orairie, savannah, wildlife area, etc. (7) or pasture, park, conservation tillage, never the savature, park, conservation tillage, never (8)	(4) er (1)
12.5	22.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) ( 3c. Maximum water depth. Select only one and as:  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)	Part of wetla  Part of ripari  Duration inundation  Semi- to per  Regularly int  Seasonally in	
		3e. Modifications to natural hydrologic regime. Scc  None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)  Check all d ditch tile dike weir	ore one or double check and average.  isturbances observed	e (nonstormwater) g
6	28.5	Metric 4. Habitat Alteration	and Development.	
max 20 pts.	subtotal	<ul> <li>4a. Substrate disturbance. Score one or double checking in the content of the content o</li></ul>	gn score. and average.	
SI	28.5	Recovered (6) Recovering (3) Recent or no recovery (1)  Recovering (3) Recent or no recovery (1)	g herbaceous/	aquatic bed removal

Site: FirstEnergy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer **Date:** 5/15/2018 w-mdt-5/15/2018-06 28.5 subtotal first page 0 28.5 Metric 5. Special Wetlands. Check all that apply and score as indicated. max 10 pts subtotal 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) 27.5 Metric 6. Plant communities, interspersion, microtopography. 6a. Wetland Vegetation Communities. **Vegetation Community Cover Scale** max 20 pts. subtotal Absent or comprises <0.1ha (0.2471 acres) contiguous area Score all present using 0 to 3 scale. Aquatic bed Present and either comprises small part of wetland's Emergent vegetation and is of moderate quality, or comprises a Shrub significant part but is of low quality 2 Present and either comprises significant part of wetland's Forest Mudflats vegetation and is of moderate quality or comprises a small Open water part and is of high quality Other 3 Present and comprises significant part, or more, of wetland's 6b. horizontal (plan view) Interspersion. vegetation and is of high quality Select only one. High (5) Narrative Description of Vegetation Quality Moderately high(4) Low spp diversity and/or predominance of nonnative or Moderate (3) disturbance tolerant native species Moderately low (2) mod Native spp are dominant component of the vegetation, Low (1) although nonnative and/or disturbance tolerant native spp None (0) can also be present, and species diversity moderate to 6c. Coverage of invasive plants. Refer moderately high, but generally w/o presence of rare to Table 1 ORAM long form for list. Add threatened or endangered spp or deduct points for coverage A predominance of native species, with nonnative spp high Extensive >75% cover (-5) and/or disturbance tolerant native spp absent or virtually Moderate 25-75% cover (-3) absent, and high spp diversity and often, but not always, Sparse 5-25% cover (-1) the presence of rare, threatened, or endangered spp Nearly absent <5% cover (0) Absent (1) **Mudflat and Open Water Class Quality** 6d. Microtopography. 0 Absent < 0.1ha (0.247 acres) Score all present using 0 to 3 scale. Low 0.1 to <1ha (0.247 to 2.47 acres) Vegetated hummucks/tussucks 2 Moderate 1 to <4ha (2.47 to 9.88 acres) Coarse woody debris >15cm (6in) 3 High 4ha (9.88 acres) or more Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Absent Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest Category 1 quality or in small amounts of highest quality 3 Present in moderate or greater amounts and of highest quality **GRAND TOTAL (max 100 pts)** 

Site: FirstEnergy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer Date: 5/15/20				
0	0		w-mdt-5/15/2018-08	
0	0	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <		
10	10	Metric 2. Upland buffers and surrounding land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falled HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)		
12.5	22.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all  100 year floodpla  Between stream/  Part of riparian or  3d. Duration inundation/sat  Semi- to permandation/sat  Regularly inundation/sat	nin (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)	
6	28.5	Metric 4. Habitat Alteration and Development.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed A mowing Shrub/sapling ren		
su	28.5	Recovering (3)  Recent or no recovery (1)  Recen		

Site: FirstEne	ergy Holloway-Knox 138kV Rater	<b>(s):</b> M. Tho	mayer, J.Freer	<b>Date:</b> 5/15/2018
28.5	1			w-mdt-5/15/2018-08
subtotal first p	_			
	1			
28.5	Metric 5. Special Wetlan	nds.		
nax 10 pts. subtotal	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-u			
	Lake Erie coastal/tributary wetland-r	-	ogy (5)	
	Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10)	iings) (10)		
	Known occurrence state/federal three	eatened or enda	ngered species (10)	
	Significant migratory songbird/water			
	Category 1 Wetland. See Question	1 Qualitative Ra	ating (-10)	
-1 27.5				
-1 27.0	Metric 6. Plant commun	ities, inte	erspersion, mic	crotopograpny.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	. (0.04=4
	Score all present using 0 to 3 scale.  Aquatic bed	0 1		ha (0.2471 acres) contiguous a ises small part of wetland's
	1 Emergent	'	·	derate quality, or comprises a
	Shrub		significant part but is of	
	Forest	2		ises significant part of wetland's
	Mudflats		_	derate quality or comprises a sr
	Open water		part and is of high qualit	•
	Other 6b. horizontal (plan view) Interspersion.	3	vegetation and is of high	gnificant part, or more, of wetlan
	Select only one.		vogotation and to or mgr	rquanty
	High (5)	Narrative De	scription of Vegetation Q	
	Moderately high(4)	low		predominance of nonnative or
	Moderately low (2)		disturbance tolerant nat	
	Moderately low (2) Low (1)	mod		component of the vegetation, for disturbance tolerant native s
	✓ None (0)		_	d species diversity moderate to
	6c. Coverage of invasive plants. Refer		-	nerally w/o presence of rare
	to Table 1 ORAM long form for list. Add		threatened or endanger	
	or deduct points for coverage	high		species, with nonnative spp
	·	9	1 7	
	Extensive >75% cover (-5)	9	and/or disturbance toler	ant native spp absent or virtuall
	·		and/or disturbance toler absent, and high spp div	ant native spp absent or virtuall
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)	g.	and/or disturbance toler absent, and high spp div	ant native spp absent or virtuall versity and often, but not always
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)	Mudflat and	and/or disturbance toler absent, and high spp div the presence of rare, the	ant native spp absent or virtuall versity and often, but not always reatened, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	Mudflat and	and/or disturbance toler absent, and high spp div the presence of rare, the Open Water Class Quality Absent <0.1ha (0.247 act	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp
	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.	Mudflat and	and/or disturbance toler absent, and high spp div the presence of rare, the Open Water Class Quality Absent <0.1ha (0.247 acc	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  versity 2.47 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	Mudflat and 0 1	and/or disturbance toler absent, and high spp div the presence of rare, the Open Water Class Quality Absent <0.1ha (0.247 act	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  y res) 2.47 acres) 7 to 9.88 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance toler absent, and high spp divided the presence of rare, the control of the presence of	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  y res) 2.47 acres) 7 to 9.88 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	and/or disturbance toler absent, and high spp divided the presence of rare, the control of the presence of	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  y res) 2.47 acres) 7 to 9.88 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance toler absent, and high spp divided the presence of rare, the control of the presence of	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  versity res) 2.47 acres) versity to 9.88 acres) nore
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance toler absent, and high spp divided the presence of rare, the content of the present of the present very small amount absent present very small amount.	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  versity res) 2.47 acres) versity to 9.88 acres) nore
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance toler absent, and high spp divided the presence of rare, the control of the presence of	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  versity and often, but not always reatened, or endangered spp  versity acres (2.47 acres)  versity acres (2.47 acres)  nore
itegory 1	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopogr 0 1	and/or disturbance toler absent, and high spp divided the presence of rare, the control of the present of the control of the present very small amour of marginal quality	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  verses) 2.47 acres) 7 to 9.88 acres) nore  ats or if more common  unts, but not of highest
itegory 1	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopogr 0 1	and/or disturbance toler absent, and high spp divided the presence of rare, the content of the present of	ant native spp absent or virtually versity and often, but not always reatened, or endangered spp  verses) 2.47 acres) 7 to 9.88 acres) nore  atts or if more common  unts, but not of highest nts of highest quality

Site: F	irstEne	gy Holloway-Knox 138kV Rater(s): M. Tho	mayer, J.Freer	<b>Date:</b> 5/15/2018
0	0	Metric 1. Wetland Area (size).		w-mdt-5/15/2018-07
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)		
10	10	Metric 2. Upland buffers and surr	ounding land use	<b>).</b>
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assig  ✓ WIDE. Buffers average 50m (164ft) or more around  MEDIUM. Buffers average 25m to <50m (82 to <164  NARROW. Buffers average 10m to <25m (32ft to < VERY NARROW. Buffers average <10m (<32ft) aro  2b. Intensity of surrounding land use. Select one or double of  VERY LOW. 2nd growth or older forest, prairie, sava  LOW. Old field (>10 years), shrubland, young secon  ✓ MODERATELY HIGH. Residential, fenced pasture,  HIGH. Urban, industrial, open pasture, row cropping	wetland perimeter (7) 4ft) around wetland perimeter (4) 82ft) around wetland perimeter (4) 4ft) around wetland perimeter (7) 4ft) around wetland perimeter (8) 4ft) around wetland perimeter (9) 4ft) heck and average. 4ft) 4ft) around prowth forest. (5) 4ft) park, conservation tillage, new factorial perimeter (7) 4ft) around prowth forest. (5) 4ft) park, conservation tillage, new factorial perimeter (7)	1)
12.5	22.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ <0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic regime. Score one or content of the properties	Part of wetland Part of riparian  3d. Duration inundation/s Semi- to perma Regularly inund Seasonally inund Seasonally sate double check and average.  s observed point source (n filling/grading road bed/RR tr	plain (1) m/lake and other human use (1) l/upland (e.g. forest), complex (1) or upland corridor (1) aturation. Score one or dbl check anently inundated/saturated (4) dated/saturated (3) ndated (2) urated in upper 30cm (12in) (1) onstormwater)
		weir stormwater input	dredging other	
6 max 20 pts.	28.5	Metric 4. Habitat Alteration and I  4a. Substrate disturbance. Score one or double check and av	•	
		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	e.	
SI	28.5	None or none apparent (9) Recovered (6) ✓ Recovering (3) Recent or no recovery (1)  Check all disturbances ✓ mowing ✓ grazing clearcutting ✓ selective cutting woody debris ren toxic pollutants	shrub/sapling ring herbaceous/aq ✓ sedimentation dredging	uatic bed removal

Site: FilstElle	ergy Holloway-Knox 138kV Rat	<b>er(s):</b> M. Th	nomayer, J.Freer	<b>Date:</b> 5/15/2018
28.5	]			w-mdt-5/15/2018-0
subtotal first p	age			
0 28.5	Metric 5. Special Wetl	ands.		
max 10 pts. subtotal	Check all that apply and score as indicated			
	Bog (10)			
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wetla	nd-unrestricted hv	drology (10)	
	Lake Erie coastal/tributary wetla			
	Lake Plain Sand Prairies (Oak C	•		
	Relict Wet Prairies (10)			
	Known occurrence state/federal			
	Significant migratory songbird/w		• , ,	
	Category 1 Wetland. See Ques	ion 1 Qualitative F	Rating (-10)	
<b>-1</b> 27.5	Matria C. Blant same	!4!!		
	Metric 6. Plant commu	-	•	crotopograpny.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	1ho (0.2474 parca) contiguous o
	Score all present using 0 to 3 scale.  Aquatic bed	0		1ha (0.2471 acres) contiguous a prises small part of wetland's
	1 Emergent	•	·	oderate quality, or comprises a
	Shrub		significant part but is o	
	Forest	2	Present and either comp	orises significant part of wetland's
	Mudflats		_	oderate quality or comprises a sr
	Open water		part and is of high qua	-
	Other	3	-	significant part, or more, of wetlan
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high	gri quality
	High (5)	Narrative D	Description of Vegetation (	Quality
	Moderately high(4)	low		predominance of nonnative or
	Moderate (3)		disturbance tolerant na	
	Moderately low (2)	mod		component of the vegetation,
	Low (1)		•	d/or disturbance tolerant native s
				nd species diversity moderate to
	None (0)			•
	6c. Coverage of invasive plants. Refer		moderately high, but g	enerally w/o presence of rare
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	high	moderately high, but g threatened or endange	enerally w/o presence of rare ered spp
	6c. Coverage of invasive plants. Refer	high	moderately high, but g threatened or endange A predominance of nativ	enerally w/o presence of rare ered spp e species, with nonnative spp
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage	high	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole	enerally w/o presence of rare ered spp re species, with nonnative spp erant native spp absent or virtuall
	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)	high	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of	enerally w/o presence of rare ered spp re species, with nonnative spp erant native spp absent or virtuall
	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)		moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, to	enerally w/o presence of rare ered spp ered spp erespecies, with nonnative spp erant native spp absent or virtuall diversity and often, but not always hreatened, or endangered spp
	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)	Mudflat and	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti	enerally w/o presence of rare ered spp ered spp ere species, with nonnative spp erant native spp absent or virtuall diversity and often, but not always hreatened, or endangered spp
	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.		moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a	enerally w/o presence of rare ered spp ered spp ere species, with nonnative spp erant native spp absent or virtuall diversity and often, but not always hreatened, or endangered spp eity cres)
	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)	Mudflat and	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti	enerally w/o presence of rare ered spp ere species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp  ity cres) to 2.47 acres)
	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.	Mudflat and 0 1 2	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 teleprocesses)	enerally w/o presence of rare ered spp ere species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp  ity cres) io 2.47 acres) 17 to 9.88 acres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or	enerally w/o presence of rare ered spp ere species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp  ity cres) io 2.47 acres) 17 to 9.88 acres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6ii	Mudflat and 0 1 2 n) 3 Microtopog	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or graphy Cover Scale	enerally w/o presence of rare ered spp ere species, with nonnative spp erant native spp absent or virtuall diversity and often, but not always hreatened, or endangered spp  ity cres) io 2.47 acres) 17 to 9.88 acres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or  graphy Cover Scale Absent	enerally w/o presence of rare ered spp ered spp ere species, with nonnative spp erant native spp absent or virtuall diversity and often, but not always hreatened, or endangered spp eres)
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 n) 3 Microtopog	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or  graphy Cover Scale Absent Present very small amou	enerally w/o presence of rare ered spp ered spp ere species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp eres) for 2.47 acres) fro 9.88 acres) fromore
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or  graphy Cover Scale Absent Present very small amod of marginal quality	enerally w/o presence of rare ered spp
tegory 1	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or  graphy Cover Scale Absent Present very small amod of marginal quality Present in moderate am	enerally w/o presence of rare ered spp ee species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp  ity cres) io 2.47 acres) if to 9.88 acres) more  unts or if more common ounts, but not of highest
tegory 1	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in  Standing dead >25cm (10in) dbh	Mudflat and	moderately high, but g threatened or endange A predominance of nativ and/or disturbance tole absent, and high spp of the presence of rare, ti  d Open Water Class Quali Absent <0.1ha (0.247 a Low 0.1 to <1ha (0.247 t Moderate 1 to <4ha (2.4 High 4ha (9.88 acres) or  graphy Cover Scale Absent Present very small amod of marginal quality	enerally w/o presence of rare ered spp ee species, with nonnative spp erant native spp absent or virtually diversity and often, but not always hreatened, or endangered spp  ity cres) io 2.47 acres) if to 9.88 acres) more  unts or if more common  ounts, but not of highest punts of highest quality

Site: F	irstEne	gy Holloway-Knox 138kV Rater(s): M. Thomayer, B.Robertson Date: 5/11/2	2018
4	4	w-mdt-5/11/2	2018-01
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
12	13	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)  HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
12	25	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3d. Duration inundation/saturation. Score one Semi- to permanently inundated/saturated (3)  None or none apparent (12)  Check all disturbances observed  3b. Connectivity. Score all that apply.  100 year floodplain (1)  Part of wetland/upland (e.g. forest), Part of riparian or upland corridor (1)  Seasonal/upland (e.g. forest), Part of riparian or upland corridor (1)  Semi- to permanently inundated/saturated (3)  Regularly inundated/saturated (3)  Seasonally saturated in upper 30cm  Check all disturbances observed	complex (1) ) or dbl check. urated (4)
7	32	Recovered (7) Recovering (3) Recent or no recovery (1)  ditch tile dike weir stormwater input  point source (nonstormwater) filling/grading road bed/RR track dredging other other	
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.	
sı	32	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Check all disturbances observed    J mowing	

RAM v. 5.0 Field Form Quantitative Rating			Wetland NH-
	( <b>s):</b> M. Th	omayer, B.Robertson	<b>Date:</b> 5/11/2018
32			w-mdt-5/11/2018-0
32 Metric 5. Special Wetlan	ıds.		
c 10 pts. subtotal 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-u  Lake Erie coastal/tributary wetland-re	estricted hydro		
Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water	eatened or enda		
Category 1 Wetland. See Question  Metric 6. Plant communications			otopography.
20 pts. subtotal 6a. Wetland Vegetation Communities.	-	Community Cover Scale	
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (	
Aquatic bed  1 Emergent Shrub	1	Present and either comprises vegetation and is of modera significant part but is of low	te quality, or comprises a
Forest Mudflats Open water	2	Present and either comprises vegetation and is of modera part and is of high quality	significant part of wetland's te quality or comprises a small
Other 6b. horizontal (plan view) Interspersion. Select only one.	3	Present and comprises signific vegetation and is of high quarters	cant part, or more, of wetland's ality
High (5)	Narrative D	escription of Vegetation Qualit	у
Moderately high(4) Moderate (3)	low	Low spp diversity and/or predo disturbance tolerant native s	pecies
Moderately low (2) Low (1)  ✓ None (0)	mod	can also be present, and spe	sturbance tolerant native spp ecies diversity moderate to
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but genera threatened or endangered s	
or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high	A predominance of native spe and/or disturbance tolerant r absent, and high spp diversi	cies, with nonnative spp native spp absent or virtually
Sparse 5-25% cover (-1)  ✓ Nearly absent <5% cover (0)		the presence of rare, threate	ned, or endangered spp
Absent (1) 6d. Microtopography.	Mudflat and	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 acres)	acres)
1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
Standing dead >25cm (10in) dbh	Minustones	wanku Causa Saala	
Amphibian breeding pools	Microtopog 0	raphy Cover Scale Absent	
		Present very small amounts o	r if more common
	1	•	
gray zone	2	of marginal quality  Present in moderate amounts quality or in small amounts of Present in moderate or greate	but not of highest of highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer, B.Robertson	<b>Date:</b> 5/11/2018
		1		w-mdt-5/11/2018-02
1	1	Metric 1. Wetland A	rea (size).	
max 6 pts.	subtotal	Select one size class and assign scol  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <2  10 to <25 acres (4 to <10.1  3 to <10 acres (1.2 to <4ha  0.3 to <3 acres (0.12 to <1.  ✓ 0.1 to <0.3 acres (0.04 to < <1.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00	) 0.2ha) (5 pts) ha) (4 pts) ) (3 pts) 2ha) (2pts)	
8	9	  Metric 2. Upland bu	ffers and surrounding land use	
max 14 pts.	subtotal	2a. Calculate average buffer width. S  WIDE. Buffers average 50  MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers s  b. Intensity of surrounding land use VERY LOW. 2nd growth o  WERY LOW. Old field (>10 years)  MODERATELY HIGH. Res	Select only one and assign score. Do not double check. m (164ft) or more around wetland perimeter (7) 25m to <50m (82 to <164ft) around wetland perimeter (4) e 10m to <25m (32ft to <82ft) around wetland perimeter (1) average <10m (<32ft) around wetland perimeter (0) . Select one or double check and average. r older forest, prairie, savannah, wildlife area, etc. (7) ), shrubland, young second growth forest. (5) sidential, fenced pasture, park, conservation tillage, new fal pen pasture, row cropping, mining, construction. (1)	)
12	21	Metric 3. Hydrology	' <b>.</b>	
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1) Seasonal/Intermittent surfa Perennial surface water (lal  3c. Maximum water depth. Select or >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) ✓ <0.4m (<15.7in) (1)	apply.  3b. Connectivity. Score all 100 year floodpla Between stream Part of wetland/u Part of riparian of second process.  ce water (3) Part of riparian of second process.  All Duration inundation/sa Semi- to perman Regularly inundation seasonally inundation.  (2) Seasonally inundation seasonally inundation.	ain (1) //ake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) turation. Score one or dbl check. nently inundated/saturated (4) ated/saturated (3) dated (2) rated in upper 30cm (12in) (1)
7	28	   Metric 4 Habitat Al	teration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score on None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or one or one or one apparent (9)  Recovered (6)  Recovering (3)  Recent or no recovery (1)	double check and average.  double check and average.  Check all disturbances observed  mowing grazing clearcutting selective cutting dredging	
SI	<b>ZO</b> ubtotal this pa	ge	woody debris removal farming toxic pollutants nutrient enrichm	ent

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-52
Site: FirstEnergy Holloway-Knox 138kV Rater(	(s): M. Tho	omayer, B.Robertson	<b>Date:</b> 5/11/2018
28 subtotal first page			w-mdt-5/11/2018-02
0 28 Metric 5. Special Wetlan	ds.		
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-re  Lake Plain Sand Prairies (Oak Open  Relict Wet Prairies (10)  Known occurrence state/federal thre  Significant migratory songbird/water  Category 1 Wetland. See Question	estricted hydrol ings) (10) atened or enda fowl habitat or	ogy (5)  ngered species (10) usage (10)	
-2 26 Metric 6. Plant communi	ities, int	erspersion, micro	otopography.
max 20 pts. subtotal  6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed  Emergent  Shrub  Forest  Mudflats  Open water  Other  6b. horizontal (plan view) Interspersion.  Select only one.  High (5)  Moderately high(4)  Moderate (3)  Moderately low (2)  Low (1)  ✓ None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  ✓ Extensive >75% cover (-5)	2	Present and either comprises vegetation and is of modera significant part but is of low Present and either comprises vegetation and is of modera part and is of high quality Present and comprises signification vegetation and is of high quality vegetation of Vegetation Quality Low spp diversity and/or prediction disturbance tolerant natives. Native spp are dominant com although nonnative and/or can also be present, and sp moderately high, but generative threatened or endangered standard predominance of native specific production.	ate quality, or comprises a quality significant part of wetland's atte quality or comprises a small cant part, or more, of wetland's allity ty ominance of nonnative or species ponent of the vegetation, disturbance tolerant native species diversity moderate to ally w/o presence of rare species, with nonnative sppecies, with nonnative spp
Extensive >/5% cover (-5)   Moderate 25-75% cover (-3)   Sparse 5-25% cover (-1)   Nearly absent <5% cover (0)   Absent (1)	0 1 2 3		7 acres) 9.88 acres) or if more common s, but not of highest of highest quality

Site: F	irstEne	gy Holloway-Knox 138kV	Rater(s): M. Thomayer,	J.Freer	<b>Date:</b> 5/15/2018
0	0	Metric 1. Wetland	• •	[	w-mdt-5/15/2018-05
max 6 pts.	subtotal	Select one size class and assign sc  >50 acres (>20.2ha) (6 pt  25 to <50 acres (10.1 to <  10 to <25 acres (4 to <10.  3 to <10 acres (1.2 to <4h  0.3 to <3 acres (0.12 to <  0.1 to <0.3 acres (0.04 to	s) :20.2ha) (5 pts) .1ha) (4 pts) :a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
5	5	Metric 2. Upland be	uffers and surround	ing land use	
max 14 pts.	subtotal	WIDE. Buffers average 5 MEDIUM. Buffers average  ✓ NARROW. Buffers average VERY NARROW. Buffers  2b. Intensity of surrounding land us VERY LOW. 2nd growth  ✓ LOW. Old field (>10 year  ✓ MODERATELY HIGH. Re	Select only one and assign score. If Om (164ft) or more around wetland pure 25m to <50m (82 to <164ft) around ge 10m to <25m (32ft to <82ft) around severage <10m (<32ft) around wetlard e. Select one or double check and a or older forest, prairie, savannah, wild s), shrubland, young second growth fesidential, fenced pasture, park, consopen pasture, row cropping, mining, consopen second growth fermions of the second pasture, row cropping, mining, consopen pasture, row cropping, mining, consopen pasture, row cropping, mining, consopen growth fermions of the second pasture, row cropping, mining, consopen growth fermions of the second pasture, row cropping, mining, consopen growth fermions of the second pasture, row cropping, mining, consopen growth fermions of the second pasture are second pasture.	erimeter (7) I wetland perimeter (4) and wetland perimeter (1) and perimeter (0) average. dlife area, etc. (7) forest. (5) servation tillage, new fal	
9.5	14.5	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surfine Perennial surface water (I)  3c. Maximum water depth. Select of Source (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in)  ✓ <0.4m (<15.7in) (1)	at apply.  Sace water (3) ake or stream) (5) only one and assign score.  a) (2) gic regime. Score one or double che	Part of wetland/u Part of riparian of puration inundation/sa Semi- to perman Regularly inundation/sa Seasonally inundation/sa Seasonally saturock and average.	ain (1) /lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) turation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3)
		Recovered (7) Recovering (3) Recent or no recovery (1)	√ ditch tile	point source (no  √ filling/grading  road bed/RR trad dredging other_	·
6	20.5		Iteration and Develo	pment.	
max 20 pts.	subtotal	<ul> <li>4a. Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)</li> <li>4b. Habitat development. Select or Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)</li> <li>4c. Habitat alteration. Score one or</li> </ul>	) nly one and assign score.		
SI	20.5	None or none apparent (9 Recovered (6) Recovering (3) Recent or no recovery (1)	✓ mowing grazing	shrub/sapling rei herbaceous/aqui sedimentation dredging farming nutrient enrichm	atic bed removal

Site: FirstEnergy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, J.Freer	Date: 5/15/2018
20.5			w-mdt-5/15/2018-05
subtotal first page			
0 20.5 Metric 5. Special Wetlar	nds.		
max 10 pts. subtotal 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 hyd	drology (10)	
Lake Erie coastal/tributary wetland-	-	logy (5)	
Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10)	nings) (10)		
Known occurrence state/federal three	eatened or end	angered species (10)	
Significant migratory songbird/water		• , , ,	
Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	
-1 19.5 Metric 6 Plant commun	itioo int	aranarajan miara	tonography
Wietric o. Flant commun	-	•	topograpny.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	vegetation 0	Community Cover Scale Absent or comprises < 0.1ha (0	2471 acres) contiguous area
Aquatic bed	1	Present and either comprises s	
1 Emergent		vegetation and is of moderate	
Shrub Forest	2	significant part but is of low questions and either comprises s	
Mudflats	2		e quality or comprises a small
Open water		part and is of high quality	
Other	3	Present and comprises signific	
<ol><li>6b. horizontal (plan view) Interspersion.</li><li>Select only one.</li></ol>		vegetation and is of high qua	lity
High (5)	Narrative D	escription of Vegetation Quality	/
Moderately high(4)	low	Low spp diversity and/or predo	
Moderate (3)  Moderately low (2)	mod	disturbance tolerant native sp  Native spp are dominant comp	
Low (1)	mou	although nonnative and/or dis	_
✓ None (0)		can also be present, and spe	•
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generall threatened or endangered sp	
or deduct points for coverage	high	A predominance of native spec	
Extensive >75% cover (-5)		and/or disturbance tolerant n	
Moderate 25-75% cover (-3)		absent, and high spp diversit	
Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threater	led, or endangered spp
Absent (1)	Mudflat and	d Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	1	Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 to 9.4	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
Standing dead >25cm (10in) dbh			
Amphibian breeding pools	Microtopog 0	Absent	
	1	Present very small amounts or	if more common
		of marginal quality	
-t 1	2	Present in moderate amounts,	_
ategory 1	3	quality or in small amounts of Present in moderate or greater	
40.5		and of highest quality	
19.5 GRAND TOTAL (max 100 pts)			

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer,	J.Freer	<b>Date:</b> 5/15/2018
0	0	Metric 1. Wetland A	Area (size).		w-mdt-5/15/2018-04
max 6 pts.	subtotal	Select one size class and assign sc  >50 acres (>20.2ha) (6 pt  25 to <50 acres (10.1 to <  10 to <25 acres (4 to <10.  3 to <10 acres (1.2 to <4h  0.3 to <3 acres (0.12 to <  0.1 to <0.3 acres (0.04 to  ✓ <0.1 acres (0.04ha) (0 pts)	ore. s) :20.2ha) (5 pts) .1ha) (4 pts) :a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
5	5	Metric 2. Upland b	uffers and surround	ding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width.  WIDE. Buffers average 5  MEDIUM. Buffers average  NARROW. Buffers average  VERY NARROW. Buffers  2b. Intensity of surrounding land us  VERY LOW. 2nd growth  ↓ LOW. Old field (>10 year  MODERATELY HIGH. Re	Select only one and assign score.  Om (164ft) or more around wetland pe 25m to <50m (82 to <164ft) arounge 10m to <25m (32ft to <82ft) aroungs average <10m (<32ft) around wetlas	Do not double check. perimeter (7) d wetland perimeter (4) und wetland perimeter (1) and perimeter (0) average. ildlife area, etc. (7) forest. (5) aservation tillage, new fallo	
12.5	17.5	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  ✓ Seasonal/Intermittent surfine Perennial surface water (I)  3c. Maximum water depth. Select of Source (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in)	race water (3) ake or stream) (5) only one and assign score.	Part of wetland/up  Part of riparian or  Duration inundation/satu  Semi- to permane  Regularly inundat  ✓ Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3) ated (2)
		<ul> <li>✓ &lt;0.4m (&lt;15.7in) (1)</li> <li>3e. Modifications to natural hydrolo</li> <li>None or none apparent (1</li> <li>✓ Recovered (7)</li> <li>✓ Recovering (3)</li> <li>Recent or no recovery (1)</li> </ul>	2) Check all disturbances observe ditch tile	eck and average.	,
6	23.5	Metric 4. Habitat A	Iteration and Devel	opment.	
max 20 pts.	subtotal	<ul> <li>4a. Substrate disturbance. Score of None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)</li> <li>4b. Habitat development. Select or Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)</li> <li>4c. Habitat alteration. Score one of</li> </ul>	one or double check and average. ) Inly one and assign score.		
ā	23.5	None or none apparent (9 Recovered (6) ✓ Recovering (3) Recent or no recovery (1)	Check all disturbances observe mowing grazing	shrub/sapling rem herbaceous/aqua dredging farming nutrient enrichme	tic bed removal

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-54
Site: FirstEnergy Holloway-Knox 138kV Rater(	<b>s):</b> M. The	omayer, J.Freer	<b>Date:</b> 5/15/2018
23.5 subtotal first page			w-mdt-5/15/2018-04
0 23.5 Metric 5. Special Wetlan	ds.		
max 10 pts. subtotal 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-re Lake Plain Sand Prairies (Oak Opening Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water in Category 1 Wetland. See Question of	nrestricted hydro estricted hydro ings) (10) atened or enda fowl habitat or	ngered species (10) usage (10)	
0 23.5 Metric 6. Plant communi			topography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.	-	Community Cover Scale	topograpity.
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	.2471 acres) contiguous area
Aquatic bed 1 Emergent Shrub	1	Present and either comprises s vegetation and is of moderate significant part but is of low q	e quality, or comprises a
Forest Mudflats Open water	2	Present and either comprises s	
Other 6b. horizontal (plan view) Interspersion.	3	Present and comprises signific vegetation and is of high qua	
Select only one.	Name Care B		
High (5)  Moderately high(4)	low	escription of Vegetation Quality Low spp diversity and/or predo	
Moderate (3)	IOW	disturbance tolerant native sp	
Moderately low (2)	mod	Native spp are dominant comp	
Low (1)	moa	although nonnative and/or dis	_
✓ None (0)		can also be present, and spe	
6c. Coverage of invasive plants. Refer		moderately high, but general	y w/o presence of rare
to Table 1 ORAM long form for list. Add		threatened or endangered sp	
or deduct points for coverage	high	A predominance of native spec	• •
Extensive >75% cover (-5)		and/or disturbance tolerant na	
✓ Moderate 25-75% cover (-3)		absent, and high spp diversit	
Sparse 5-25% cover (-1)		the presence of rare, threater	ned, or endangered spp
Nearly absent <5% cover (0)			
Absent (1)		Open Water Class Quality	
6d. Microtopography.  Score all present using 0 to 3 scale.	<u>0</u>	Absent <0.1ha (0.247 acres)	agrag)
1 Vegetated hummucks/tussucks	2	Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 to 9.4	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	oo acres)
Standing dead >25cm (10in) dbh		Tringit Tita (0.00 acres) of filore	
1 Amphibian breeding pools	Microtopog	raphy Cover Scale	
Li I ankanasan araasing paara	0	Absent	
	1	Present very small amounts or	if more common
	÷	of marginal quality	<del> </del>
1 4	2	Present in moderate amounts,	but not of highest
ategory 1	_	quality or in small amounts of	
	3	Present in moderate or greater	
		and of highest quality	
23.5 GRAND TOTAL (max 100 pts)			

Site: FirstEnergy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer Date: 5/15/2018				
0	0	Metric 1. Wetland Area (size).	w-mdt-5/15/2018-03	
max 6 pts.	subtotal	Select one size class and assign score.    50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)		
11	11	Metric 2. Upland buffers and surrounding land use.		
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)	
12.5	23.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	<ul> <li>✓ Precipitation (1)</li> <li>✓ Seasonal/Intermittent surface water (3)</li> <li>✓ Perennial surface water (lake or stream) (5)</li> <li>3c. Maximum water depth. Select only one and assign score.</li> <li>✓ Semi- to permaner segularly inundation.</li> <li>✓ Seasonally inundation.</li> <li>✓ Seasonally inundation.</li> </ul>	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3)	
	00.5	None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)  None or none apparent (12) Check all disturbances observed ditch tile dike weir stormwater input  Check all disturbances observed filling/grading road bed/RR trace dredging other	, i	
6 max 20 pts.	29.5	Metric 4. Habitat Alteration and Development.  4a. Substrate disturbance. Score one or double check and average.		
пах 20 різ.	Subtotal	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.		
si	29.5	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)  Check all disturbances observed  wowing grazing grazing clearcutting selective cutting woody debris removal toxic pollutants  Check all disturbances observed shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	ttic bed removal	

ORAM v. 5.0 Field F	Form Quantitative Rating		Wetland NI
Site: FirstEne	rgy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, J.Freer Date: 5/15/2018
29.5	age		w-mdt-5/15/2018
0 29.5	Metric 5. Special Wetlar	nds.	
max 10 pts. subtotal	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-u Lake Erie coastal/tributary wetland-r Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water	restricted hydro nings) (10) eatened or enda	angered species (10)
0 29.5	Category 1 Wetland. See Question  Metric 6. Plant commun	1 Qualitative R	erspersion, microtopography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous are
	Aquatic bed	1	Present and either comprises small part of wetland's
	1 Emergent		vegetation and is of moderate quality, or comprises a
	Shrub Forest	2	significant part but is of low quality  Present and either comprises significant part of wetland's
		2	
	Mudflats		vegetation and is of moderate quality or comprises a small
	Open water		part and is of high quality
	Other	3	Present and comprises significant part, or more, of wetland
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high quality
	High (5)	Norrativa D	escription of Vegetation Quality
		low	Low spp diversity and/or predominance of nonnative or
	Moderately high(4) Moderate (3)	IOW	disturbance tolerant native species
			·
	Moderately low (2)	mod	Native spp are dominant component of the vegetation,
	Low (1)  None (0)		although nonnative and/or disturbance tolerant native sp
	6c. Coverage of invasive plants. Refer		can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare
	to Table 1 ORAM long form for list. Add		threatened or endangered spp
	or deduct points for coverage	high	A predominance of native species, with nonnative spp
	Extensive >75% cover (-5)	riigir	and/or disturbance tolerant native spp absent or virtually
	✓ Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
	Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
			the processes of fare, threatened, or oridangered opp
	Nearly absent <5% cover (0)	Mudflat and	Open Water Class Quality
	Nearly absent <5% cover (0) Absent (1)	Mudflat and	Open Water Class Quality Absent <0.1ha (0.247 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography.		Absent <0.1ha (0.247 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.	0	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	0	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	0 1 2	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	0 1 2 3	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent
	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common
tegory 1	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0 1	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality
itegory 1	Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	0 1 2 3 <b>Microtopog</b> 0 1	Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  raphy Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer, J.Free	<b>Date:</b> 5/15/2018	
0	0	1		w-mdt-5/15/2018-	-02
0	0	Metric 1. Wetland A			
max 6 pts.	subtotal	Select one size class and assign so >50 acres (>20.2ha) (6 pt 25 to <50 acres (10.1 to < 10 to <25 acres (4 to <10. 3 to <10 acres (1.2 to <4h 0.3 to <3 acres (0.12 to < 0.1 to <0.3 acres (0.04 to	s) 20.2ha) (5 pts) 1ha) (4 pts) a) (3 pts) 1.2ha) (2pts) <0.12ha) (1 pt)		
12	12	Metric 2. Upland bu	uffers and surrounding	and use.	
max 14 pts.	subtotal	2a. Calculate average buffer width.  ✓ WIDE. Buffers average 5  MEDIUM. Buffers averag  NARROW. Buffers avera  VERY NARROW. Buffers  2b. Intensity of surrounding land us  VERY LOW. 2nd growth  ✓ LOW. Old field (>10 year  MODERATELY HIGH. Re	Select only one and assign score. Do not of the condition	ouble check. r (7) d perimeter (4) ind perimeter (1) neter (0) a, etc. (7) in tillage, new fallow field. (3)	
12.5	24.5	Metric 3. Hydrolog	y.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  ✓ Seasonal/Intermittent surfine Perennial surface water (Is so. Maximum water depth. Select of 20.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in)  ✓ <0.4m (<15.7in) (1)	ace water (3) ake or stream) (5) only one and assign score.  action (3) action (4) action (5) action (5) action (6) action (7) actio	ctivity. Score all that apply.  100 year floodplain (1)  Between stream/lake and other human use (Part of wetland/upland (e.g. forest), complex Part of riparian or upland corridor (1)  In inundation/saturation. Score one or dbl closemi- to permanently inundated/saturated (4)  Regularly inundated/saturated (3)  Beasonally inundated (2)  Beasonally saturated in upper 30cm (12in) (12)  Beaverage.  Doint source (nonstormwater)  illing/grading	(1) heck. 4)
	00.5	Recent or no recovery (1)	dike weir	oad bed/RR track dredging other	
6 max 20 pts.	30.5	Metric 4. Habitat A  4a. Substrate disturbance. Score of	Iteration and Development	ent.	
πων Συ μισ.	SUNCE	None or none apparent (4  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select or  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one of	nly one and assign score.		
si	30.5	None or none apparent (9 Recovered (6) Recovering (3) Recent or no recovery (1)	✓ mowing     grazing     clearcutting     ✓ selective cutting     woody debris removal	shrub/sapling removal nerbaceous/aquatic bed removal sedimentation dredging arming nutrient enrichment	

RAM v. 5.0 Field	Form Quantitative Rating			Wetland NH
Site: FirstEn	ergy Holloway-Knox 138kV	ater(s): M. Th	omayer, J.Freer	<b>Date:</b> 5/15/2018
20.7	7			w-mdt-5/15/2018-
30.5				
subtotal first	7			
30.5	Metric 5. Special We	tlands.		
nax 10 pts. subtotal	Check all that apply and score as indicated Bog (10)	ted.		
	Fen (10)			
	Old growth forest (10)  Mature forested wetland (5)			
	Lake Erie coastal/tributary wet	land-unrestricted hy	drology (10)	
	Lake Erie coastal/tributary wet		ology (5)	
	Lake Plain Sand Prairies (Oak Relict Wet Prairies (10)	Openings) (10)		
	Known occurrence state/feder	al threatened or end	angered species (10)	
	Significant migratory songbird			
	Category 1 Wetland. See Que	estion 1 Qualitative F	Rating (-10)	
-2 28.5	]			
20.0	I wettic o. Flant comm	-	-	otopography.
ax 20 pts. subtotal	S .		Community Cover Scale	(0.0474
	Score all present using 0 to 3 scale.  Aquatic bed	0	Present and either comprises	(0.2471 acres) contiguous area
	1 Emergent	'	vegetation and is of moder	
	Shrub		significant part but is of low	v quality
	Forest	2	· ·	s significant part of wetland's
	Mudflats		_	ate quality or comprises a smal
	Open water Other	3	part and is of high quality  Present and comprises signi	ficant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.		vegetation and is of high q	
	Select only one.			
	High (5)		Description of Vegetation Qual	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or pred disturbance tolerant native	
	Moderately low (2)	mod	Native spp are dominant con	
	Low (1)		although nonnative and/or	disturbance tolerant native spp
	None (0)		· ·	pecies diversity moderate to
	<ol> <li>Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add</li> </ol>		moderately high, but gener threatened or endangered	
	or deduct points for coverage	high	A predominance of native sp	
	✓ Extensive >75% cover (-5)	-	and/or disturbance tolerant	native spp absent or virtually
	Moderate 25-75% cover (-3)			sity and often, but not always,
	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threa	tened, or endangered spp
	Absent (1)	Mudflat an	d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres	)
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.4	
	1 Vegetated hummucks/tussuck		Moderate 1 to <4ha (2.47 to	
	Coarse woody debris >15cm ( Standing dead >25cm (10in) of	,	High 4ha (9.88 acres) or more	<u>e                                      </u>
			graphy Cover Scale	
	<ol> <li>Amphibian breeding pools</li> </ol>		Absent	
	1 Amphibian breeding pools	0		
	1 Amphibian breeding pools	1	Present very small amounts	or if more common
	1 Amphibian breeding pools	1	Present very small amounts of marginal quality	
tegory 1	1 Amphibian breeding pools		Present very small amounts of marginal quality Present in moderate amount	s, but not of highest
tegory 1	1 Amphibian breeding pools	1	Present very small amounts of marginal quality	s, but not of highest of highest quality

Site: FirstEnergy Holloway-Knox 138kV Rater(s): M. Thomayer, J.Freer Date: 5/15/2018					
0	0	1	w-mdt-5/15/2018-01		
0	0	Metric 1. Wetland Area (size).			
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)			
11	11	Metric 2. Upland buffers and surrounding la	and use.		
max 14 pts.	subtotal	<ul> <li>2a. Calculate average buffer width. Select only one and assign score. Do not do WIDE. Buffers average 50m (164ft) or more around wetland perimeter (MEDIUM. Buffers average 25m to &lt;50m (82 to &lt;164ft) around wetland NARROW. Buffers average 10m to &lt;25m (32ft to &lt;82ft) around wetland VERY NARROW. Buffers average &lt;10m (&lt;32ft) around wetland perime 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, LOW. Old field (&gt;10 years), shrubland, young second growth forest. (5) ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation HIGH. Urban, industrial, open pasture, row cropping, mining, construction.</li> </ul>	(7) perimeter (4) d perimeter (1) ster (0) etc. (7) tillage, new fallow field. (3)		
12.5	23.5	Metric 3. Hydrology.			
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ (0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic regime. Score one or double check and available.  None or none apparent (12)  ✓ Recovered (7)  ✓ Recovering (3)  Recent or no recovery (1)  3b. Connect  10  8c  10  10  10  10  10  10  10  10  10  1	ivity. Score all that apply.  10 year floodplain (1)  10 year floodplain (1)  11 ert of wetland/upland (e.g. forest), complex (1)  12 art of riparian or upland corridor (1)  13 inundation/saturation. Score one or dbl check  14 eric of riparian or upland corridor (2)  15 inundation/saturation. Score one or dbl check  16 eric of riparian or upland corridor (3)  17 inundation/saturated (3)  18 eric of riparian or upland corridor (1)  18 eric of riparian or upland corridor (1)  19 eric of riparian or upland (2)  19 eric of riparian or upland (1)  10 eric of riparian or upland (1)  11 eric of riparian or upland (1)  12 eric of riparian or upland (1)  13 eric of riparian or upland (1)  14 eric of riparian or upland (1)  15 eric of riparian or upland (1)  16 eric of riparian or upland (1)  17 eric of riparian or upland (1)  18 eric of riparian or upland (1)  19 eric of riparian or upland (1)  19 eric of riparian or upland corridor (1)  10 eric of riparian or upland corridor (1)  11 eric of riparian or upland corridor (1)  12 eric of riparian or upland corridor (1)  13 eric of riparian or upland corridor (1)  14 eric of riparian or upland corridor (1)  16 eric of riparian or upland corridor (1)  17 eric of riparian or upland corridor (1)  18 eric of riparian or upland corridor (1)  19 eric of riparian or upland corridor (1)  19 eric of riparian or upland corridor (1)  10 eric of riparian or upland corridor (1)  10 eric of riparian or upland corridor (1)  11 eric of riparian or upland corridor (1)  11 eric of riparian or upland corridor (1)  12 eric of riparian or upland corridor (1)  13 eric of riparian or upland corridor (1)  14 eric of riparian or upland corridor (1)  16 eric of riparian or upland corridor (1)  17 eric of riparian or upland corridor (1)  18 eric of riparian or upland corridor (1)  18		
6.5	30	Metric 4. Habitat Alteration and Developme	nt.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  ✓ Recovering (3)  Recent or no recovery (1)  Check all disturbances observed  ✓ mowing  grazing  grazing  clearcutting  ✓ selective cutting  woody debris removal	rub/sapling removal rbaceous/aquatic bed removal dimentation edging rming		
SU	ubtotal this pa	toxic pollutants nu	trient enrichment		

DRAM v. 5.0 Field Form Quantitative Rating		Wetlar	nd NH-
Site: FirstEnergy Holloway-Knox 138kV Rater	(s): M. Th	omayer, J.Freer <b>Date:</b> 5/15/	2018
30 subtotal first page		w-mdt-5/15	/2018-0
Metric 5. Special Wetlar Check all that apply and score as indicated.	nds.		
Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5)			
Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10)	restricted hydro		
Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question	r fowl habitat or	usage (10)	
	-	erspersion, microtopography	/.
hax 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.		Community Cover Scale Absent or comprises <0.1ha (0.2471 acres) contigu	oue erec
Aquatic bed  Emergent Shrub	<u>0</u> 1	Present and either comprises small part of wetland' vegetation and is of moderate quality, or comprise significant part but is of low quality	S
Forest Mudflats Open water	2	Present and either comprises significant part of wet vegetation and is of moderate quality or comprise part and is of high quality	
Other 6b. horizontal (plan view) Interspersion. Select only one.	3	Present and comprises significant part, or more, of vegetation and is of high quality	wetland's
High (5)  Moderately high(4)  Moderate (3)	Narrative D	Low spp diversity and/or predominance of nonnative disturbance tolerant native species	
Moderately low (2) Low (1) None (0)	mod	Native spp are dominant component of the vegetati although nonnative and/or disturbance tolerant na can also be present, and species diversity moders	ative spp ate to
<ol> <li>Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add</li> </ol>		moderately high, but generally w/o presence of ra threatened or endangered spp	re
or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high	A predominance of native species, with nonnative s and/or disturbance tolerant native spp absent or v absent, and high spp diversity and often, but not a	rirtually always,
Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)	Mudflat and	the presence of rare, threatened, or endangered s  Open Water Class Quality	spp
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)	
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more	
1 Amphibian breeding pools	Microtopog 0	raphy Cover Scale Absent	_
	1	Present very small amounts or if more common of marginal quality	_
ategory 1	3	Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts	_
28 GRAND TOTAL (max 100 pts)		and of highest quality	-

Site: F	irstEne	ergy Holloway-Knox 138kV <b>Rater(s):</b> M. Thomayer, B. Rob	ertson <b>Date:</b> 5/10/2018
4	4	1	w-mdt-5/10/2018-02
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
12	13	Metric 2. Upland buffers and surrounding la	and use.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not do  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland  VERY NARROW. Buffers average <10m (<32ft) around wetland perime  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation  HIGH. Urban, industrial, open pasture, row cropping, mining, construction	uble check. (7) perimeter (4) d perimeter (1) eter (0) etc. (7) tillage, new fallow field. (3)
14.5	27.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3d. Duration  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 available of the control of th	ivity. Score all that apply.  10 year floodplain (1)  11 etween stream/lake and other human use (1)  12 art of wetland/upland (e.g. forest), complex (1)  13 art of riparian or upland corridor (1)  14 inundation/saturation. Score one or dbl check  15 emi- to permanently inundated/saturated (4)  16 egularly inundated/saturated (3)  17 easonally inundated (2)  18 easonally saturated in upper 30cm (12in) (1)  18 errage.  19 int source (nonstormwater)  19 ing/grading  20 ad bed/RR track  21 edging  22 her
6	33.5	Metric 4. Habitat Alteration and Developme	nt.
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) ✓ Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) ✓ Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Check all disturbances observed	
SI	33.5	Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Recent or no recovery (1)  Recovering (3) Clearcutting V selective cutting Woody debris removal toxic pollutants	urub/sapling removal prbaceous/aquatic bed removal edimentation edging rming utrient enrichment

Site: FirstEnergy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/10/2018
			ht madt E/10/2010 01
33.5			w-mdt-5/10/2018-02
subtotal first page			
0 33.5 Metric 5. Special Wetlar	nds		
inotitie of operation violation	ias.		
max 10 pts. subtotal Check all that apply and score as indicated.  Bog (10)			
Fen (10)			
Old growth forest (10)			
Mature forested wetland (5)	unroctricted by	drology (10)	
Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland-		=	
Lake Plain Sand Prairies (Oak Oper			
Relict Wet Prairies (10)			
Known occurrence state/federal thre		. , ,	
Significant migratory songbird/water  Category 1 Wetland. See Question			
Category 1 Wetland. See Question	i Qualitative i	tailing (-10)	
-2 31.5 Metric 6. Plant commun	ities int	erspersion microt	onogranhy
max 20 pts. subtotal 6a. Wetland Vegetation Communities.		Community Cover Scale	opograpny.
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.3	2471 acres) contiguous area
Aquatic bed	1	Present and either comprises sr	
1 Emergent		vegetation and is of moderate	
Shrub		significant part but is of low qu	
Forest Mudflats	2	Present and either comprises si vegetation and is of moderate	
Open water		part and is of high quality	quality of complices a small
Other	3	Present and comprises significa	ant part, or more, of wetland's
6b. horizontal (plan view) Interspersion.		vegetation and is of high quali	ty
Select only one.	Norrativa D	accription of Vagatation Quality	
High (5)  Moderately high(4)	low	escription of Vegetation Quality Low spp diversity and/or predon	
Moderate (3)		disturbance tolerant native spo	
Moderately low (2)	mod	Native spp are dominant compo	_
Low (1)		although nonnative and/or dist	• • • • • • • • • • • • • • • • • • • •
✓ None (0) 6c. Coverage of invasive plants. Refer		can also be present, and spec moderately high, but generally	•
to Table 1 ORAM long form for list. Add		threatened or endangered spp	•
or deduct points for coverage	high	A predominance of native speci-	es, with nonnative spp
Extensive >75% cover (-5)		and/or disturbance tolerant na	
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threaten	
Nearly absent <5% cover (0)		the presence of fare, threaten	ca, or chaangered 3pp
Absent (1)	Mudflat and	d Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 to 4.45)	
1 Vegetated hummucks/tussucks 1 Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	oo acres)
Standing dead >25cm (10in) dbh		The second secon	
Amphibian breeding pools	Microtopog	raphy Cover Scale	
<del></del>	0	Absent	
	1	Present very small amounts or i of marginal quality	t more common
	2	Present in moderate amounts, b	out not of highest
or 2 gray zone	_	quality or in small amounts of	_
or 2 gray zone	3	Present in moderate or greater a	
21.5		and of highest quality	
31.5 GRAND TOTAL (max 100 pts)			

Site: F	irstEne	rgy Holloway-Knox 138	V Rater(s): M. Thomayer, B. Robertson	<b>Date:</b> 5/10/2018
0	0			w-mdt-5/10/2018-01
0	0	Metric 1. Wetlar	• •	
max 6 pts.	subtotal	Select one size class and assi    >50 acres (>20.2ha)   25 to <50 acres (10.   10 to <25 acres (4 to   3 to <10 acres (1.2 to   0.3 to <3 acres (0.12   0.1 to <0.3 acres (0.42)   <0.1 acres (0.04ha)	6 pts) to <20.2ha) (5 pts) <10.1ha) (4 pts) <4ha) (3 pts) to <1.2ha) (2pts) 4 to <0.12ha) (1 pt)	
11	11	Metric 2. Upland	buffers and surrounding land u	se.
max 14 pts.	subtotal	2a. Calculate average buffer v  ✓ WIDE. Buffers aver  MEDIUM. Buffers a  NARROW. Buffers  VERY NARROW. E  Intensity of surrounding la  VERY LOW. 2nd gr  ✓ LOW. Old field (>10  ✓ MODERATELY HIG	dth. Select only one and assign score. Do not double checing 50m (164ft) or more around wetland perimeter (7) erage 25m to <50m (82 to <164ft) around wetland perimeter verage 10m to <25m (32ft to <82ft) around wetland perimeter (8) double check and average (10m (<32ft) around wetland perimeter (9) double. Select one or double check and average. With or older forest, prairie, savannah, wildlife area, etc. (7) vears), shrubland, young second growth forest. (5) Residential, fenced pasture, park, conservation tillage, ne ial, open pasture, row cropping, mining, construction. (1)	k. (4) er (1)
9.5	20.5	Metric 3. Hydrol	oav.	
max 30 pts.	subtotal	3a. Sources of Water. Score  High pH groundwater (  ✓ Precipitation (1)  Seasonal/Intermitter  Perennial surface w  3c. Maximum water depth. So  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to  ✓ 0.4m (<15.7in) (1)	Il that apply.  (5)  (5)  (6)  (7)  (8)  (9)  (9)  (10)  (10)  (10)  (10)  (10)  (10)  (11)  (11)  (12)  (12)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (18)  (18)  (19)  (19)  (19)  (10)  (10)  (10)  (10)  (11)  (12)  (12)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (18)  (19)  (19)  (19)  (10)  (10)  (10)  (11)  (12)  (12)  (13)  (14)  (15)  (15)  (16)  (17)  (17)  (18)  (19)  (19)  (10	ream/lake and other human use (1) and/upland (e.g. forest), complex (1) rian or upland corridor (1) on/saturation. Score one or dbl check. rmanently inundated/saturated (4) nundated/saturated (3) inundated (2) saturated in upper 30cm (12in) (1) e (nonstormwater)
		Kecent of no recove	dike road bed/RI dredging stormwater input other	\ liack
6	26.5	Metric 4. Habita	Alteration and Development.	
max 20 pts.	subtotal	None or none appart Recovered (3) Recovering (2) Recent or no recove 4b. Habitat development. Sel Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	v (1)	
sı	26.5	None or none appar Recovered (6) ✓ Recovering (3) Recent or no recove	mowing shrub/saplir grazing herbaceous	vaquatic bed removal on

DRAM v. 5.0 Field F	Form Quantitative Rating			Wetland NH
Site: FirstEne	rgy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/10/2018
	1			w-mdt-5/10/2018-
26.5				
subtotal first pa	age			
26.5	<b></b>			
20.5	Metric 5. Special Wetlar	nds.		
nax 10 pts. subtotal	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-			
	Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Ope		ology (5)	
	Relict Wet Prairies (10)	Tilligs) (TO)		
	Known occurrence state/federal thr	eatened or end	angered species (10)	
	Significant migratory songbird/wate			
	Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	
<b>-3</b> 23.5	Matric C. Dlant commun	.:4: :(		
0 20.0	Metric 6. Plant commun		- · · · · · · · · · · · · · · · · · · ·	otopograpny.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	0.0474
	Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha ( Present and either comprises	
	1 Emergent		vegetation and is of modera	
	Shrub		significant part but is of low	
	Forest	2	Present and either comprises	_
	Mudflats		_	te quality or comprises a sma
	Open water	3	part and is of high quality  Present and comprises signifi	agent part or mare of wetland
	Other  6b. horizontal (plan view) Interspersion.	3	vegetation and is of high qu	•
	Select only one.		Togotation and to or mgir qu	S
	High (5)	Narrative D	escription of Vegetation Quali	
	Moderately high(4)	low	Low spp diversity and/or pred	
	Moderate (3) Moderately low (2)	mod	disturbance tolerant native s  Native spp are dominant com	
	Low (1)	mod		ponent of the vegetation, listurbance tolerant native spp
	✓ None (0)		can also be present, and sp	
	6c. Coverage of invasive plants. Refer		moderately high, but genera	
	to Table 1 ORAM long form for list. Add		threatened or endangered s	
	or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native spe	
	Moderate 25-75% cover (-3)			native spp absent or virtually ity and often, but not always,
	Sparse 5-25% cover (-1)	<u> </u>	the presence of rare, threate	
	Nearly absent <5% cover (0)			
	Absent (1)		d Open Water Class Quality	
	6d. Microtopography.  Score all present using 0 to 3 scale.	0	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.4	7 acres)
	1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 2.47	
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in) dbh			
	Amphibian breeding pools		raphy Cover Scale	
		0	Absent	ar if more common
		1	Present very small amounts of marginal quality	or in more common
		2	Present in moderate amounts	, but not of highest
egory 1			quality or in small amounts	of highest quality
tegory 1		3	quality or in small amounts  Present in moderate or greate and of highest quality	

		g	
Site: F	irstEne	rgy Holloway-Knox 138kV <b>Rater(s):</b> M. Thomayer, B. Robertson	<b>Date:</b> 5/09/2018
		1	w-bcr-5/09/2018-04
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   ✓ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
11	13	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  ✓ MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallo HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
14.5	27.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  Between stream/la  Part of wetland/up  Part of riparian or  3d. Duration inundation/satu  Semi- to permane  Regularly inundate  Seasonally inundate	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
10	37.5	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  ✓ None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  ✓ Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  ✓ Recovering (3)  Check all disturbances observed  mowing  shrub/sapling rem herbaceous/aquat	
SI	37.5	Recent or no recovery (1)    I	nt

Site: FirstEnergy Holloway-Knox 138kV Rater(	( <b>s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/09/2018
37.5			w-bcr-5/09/2018-04
subtotal first page			
0 37.5 Metric 5. Special Wetlan	ds		
max 10 pts. subtotal 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-u	inrestricted hy	drology (10)	
Lake Erie coastal/tributary wetland-re	estricted hydro		
Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10)	ings) (10)		
Known occurrence state/federal thre			
Significant migratory songbird/water Category 1 Wetland. See Question			
	1 Quantative 1	tuning ( 10)	
4 41.5 Metric 6. Plant communi	ities, int	erspersion, microf	topography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.		Community Cover Scale	0.474
Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha (0. Present and either comprises s	
1 Emergent		vegetation and is of moderate	e quality, or comprises a
Shrub Forest	2	significant part but is of low queries and either comprises significant part but is of low queries.	
Mudflats	_	vegetation and is of moderate	-
Open water		part and is of high quality	ant northornors of watlandla
Other  6b. horizontal (plan view) Interspersion.	3	Present and comprises signification vegetation and is of high qual	
Select only one.			
High (5)  Moderately high(4)	Narrative D	Low spp diversity and/or predor	
Moderate (3)		disturbance tolerant native sp	ecies
Moderately low (2) Low (1)	mod	Native spp are dominant compo although nonnative and/or dis	=
✓ None (0)		can also be present, and spec	
6c. Coverage of invasive plants. Refer		moderately high, but generally	
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered spp A predominance of native speci	
Extensive >75% cover (-5)		and/or disturbance tolerant na	
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threaten	•
Nearly absent <5% cover (0)			
✓ Absent (1) 6d. Microtopography.	Mudflat and	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	acres)
2 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9.8 High 4ha (9.88 acres) or more	38 acres)
Standing dead >25cm (10in) dbh		Triigit 4tia (9.00 acres) of thore	
Amphibian breeding pools		graphy Cover Scale	
	<u>0</u> 1	Absent  Present very small amounts or	if more common
		of marginal quality	
odified 2	2	Present in moderate amounts, be quality or in small amounts of	=
	3	Present in moderate or greater	
41.5 GRAND TOTAL (max 100 pts)		and of highest quality	
I I I I V I VI NOTO I V I NOTO I UTILI			

Site: F	irstEne	rgy Holloway-Knox 138kV	Rater(s): M. Thomayer, B. Robertson	<b>Date:</b> 5/09/2018
4	4			w-bcr-5/09/2018-01
max 6 pts.	1 subtotal	Metric 1. Wetland Ard Select one size class and assign score.		
		>50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2) 10 to <25 acres (4 to <10.1ha 3 to <10 acres (1.2 to <4ha) ( 0.3 to <3 acres (0.12 to <1.2h  ✓ 0.1 to <0.3 acres (0.04 to <0. <0.1 acres (0.04ha) (0 pts)	a) (4 pts) (3 pts) na) (2pts)	
11	12	Metric 2. Upland buff	fers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Se  ✓ WIDE. Buffers average 50m  MEDIUM. Buffers average 2000  NARROW. Buffers average 2000  VERY NARROW. Buffers average 2000  VERY LOW. 2000  ✓ LOW. Old field (>10 years), 300  ✓ MODERATELY HIGH. Resident	elect only one and assign score. Do not double check. (164ft) or more around wetland perimeter (7) 5m to <50m (82 to <164ft) around wetland perimeter (4) 10m to <25m (32ft to <82ft) around wetland perimeter (1) rerage <10m (<32ft) around wetland perimeter (0) Select one or double check and average. Older forest, prairie, savannah, wildlife area, etc. (7) shrubland, young second growth forest. (5) dential, fenced pasture, park, conservation tillage, new faller pasture, row cropping, mining, construction. (1)	
14.5	26.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that ap High pH groundwater (5) Other groundwater (3)  ✓ Precipitation (1) ✓ Seasonal/Intermittent surface Perennial surface water (lake 3c. Maximum water depth. Select only >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2 ✓ <0.4m (<15.7in) (1)	a water (3)  a or stream) (5)  b one and assign score.  2)  100 year floodpla Between stream/ Part of wetland/u Part of riparian or  3d. Duration inundation/sate Semi- to permane Regularly inundation/sate Seasonally inundation/sate	in (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3)
10	20.5	Recovered (7) Recovering (3) Recent or no recovery (1)	ditch tile dike weir stormwater input   point source (nor filling/grading road bed/RR traced dredging other	· I
10 max 20 pts.	36.5	Metric 4. Habitat Alte 4a. Substrate disturbance. Score one	eration and Development.	
		Ab. Substrate distributions. Score one of the substrate distributions. Score one of the substrate distributions of the substrate distribution of the su	one and assign score.	
sı	36.5	None or none apparent (9)  Recovered (6)  Recovering (3)  Recent or no recovery (1)	Check all disturbances observed  mowing grazing clearcutting woody debris removal toxic pollutants  Check all disturbances observed shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed removal

ORAM v. 5.0 Field Form Quantitative Rating			Wetland NH-61
	<b>s):</b> M. Tho	omayer, B. Robertson	<b>Date:</b> 5/09/2018
36.5			w-bcr-5/09/2018-01
0 36.5 Metric 5. Special Wetlan	ds.		
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-re  Lake Plain Sand Prairies (Oak Openi  Relict Wet Prairies (10)  Known occurrence state/federal threa  Significant migratory songbird/water is  Category 1 Wetland. See Question 2	nrestricted hyd estricted hydrol ings) (10) atened or enda fowl habitat or	ngered species (10) usage (10)	
3 39.5 Metric 6. Plant communi	ties, int	erspersion, microt	opography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	Vegetation 0	Community Cover Scale Absent or comprises < 0.1ha (0.2)	2471 acres) contiguous area
Aquatic bed  1 Emergent Shrub	1	Present and either comprises so vegetation and is of moderate significant part but is of low qu	nall part of wetland's quality, or comprises a
Forest Mudflats Open water	2	Present and either comprises sig vegetation and is of moderate part and is of high quality	gnificant part of wetland's
Other 6b. horizontal (plan view) Interspersion.	3	Present and comprises significative vegetation and is of high quality	
Select only one.	Nametice D	and the set Variation Ovality	
High (5)  Moderately high(4)  Moderate (3)	low	Low spp diversity and/or predom disturbance tolerant native spe	ecies
Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	mod	Native spp are dominant comportant although nonnative and/or dist can also be present, and specimoderately high, but generally threatened or endangered spp	urbance tolerant native spp ies diversity moderate to w/o presence of rare
or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)	high	A predominance of native species and/or disturbance tolerant nat absent, and high spp diversity the presence of rare, threatened	es, with nonnative spp rive spp absent or virtually and often, but not always,
Nearly absent <5% cover (0)  ✓ Absent (1)	Mudflat and	Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	1	Low 0.1 to <1ha (0.247 to 2.47 a Moderate 1 to <4ha (2.47 to 9.8	
Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	o acres)
Standing dead >25cm (10in) dbh		. 5 (*	
Amphibian breeding pools		raphy Cover Scale	
	1	Absent  Present yeary small amounts or if	more commen
	ı	Present very small amounts or if of marginal quality	more common
	2	Present in moderate amounts, b	ut not of highest
lodified 2	3	quality or in small amounts of l	nighest quality
39.5 GRAND TOTAL (max 100 pts)		and of highest quality	anounts

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomaye	er, B. Robertson	<b>Date:</b> 5/09/2018
4		1		w-bcr-5/09/2018-02
1	1	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)		
11	12	Metric 2. Upland buffers and surrour	nding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score  ✓ WIDE. Buffers average 50m (164ft) or more around wetlan  MEDIUM. Buffers average 25m to <50m (82 to <164ft) aro  NARROW. Buffers average 10m to <25m (32ft to <82ft) aro  VERY NARROW. Buffers average <10m (<32ft) around we  2b. Intensity of surrounding land use. Select one or double check ar  VERY LOW. 2nd growth or older forest, prairie, savannah,  ✓ LOW. Old field (>10 years), shrubland, young second grow  MODERATELY HIGH. Residential, fenced pasture, park, c  HIGH. Urban, industrial, open pasture, row cropping, minin	e. Do not double check. d perimeter (7) und wetland perimeter (4) round wetland perimeter (1) etland perimeter (0) nd average. wildlife area, etc. (7) rth forest. (5) onservation tillage, new fall	
14.5	26.5	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  ✓ Seasonal/Intermittent surface water (3)	Part of wetland/u  Part of riparian of rip	ain (1) //lake and other human use (1) //lake and other human
10	36.5	Metric 4. Habitat Alteration and Deve	elopment.	
max 20 pts.	subtotal	<ul> <li>4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)</li> <li>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)</li> <li>4c. Habitat alteration. Score one or double check and average.</li> <li>Check all disturbances obser</li> </ul>	·	
SI	36.5	Recovered (6) Recovering (3) Recent or no recovery (1)  Recent or no recovery (1)  Recovered (6) Recovering (3) Recovering (3) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (5) Recovering (6) Recovering (7) R	shrub/sapling rer herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed removal

RAM v. 5.0 Field F	Form Quantitative Rating			Wetland NH
<b>Site:</b> FirstEne	ergy Holloway-Knox 138kV Rate	r(s): M. Th	omayer, B. Robertson	<b>Date:</b> 5/09/2018
00.5	1			w-bcr-5/09/2018-0
36.5				
subtotal first p	age			
36.5	Metric 5. Special Wetla	nds.		
nax 10 pts. subtotal	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 hy	drology (10)	
	Lake Erie coastal/tributary wetland	-	ology (5)	
	Lake Plain Sand Prairies (Oak Ope Relict Wet Prairies (10)	enings) (10)		
	Known occurrence state/federal thi		• , , ,	
	Significant migratory songbird/water Category 1 Wetland. See Question			
3 39.5	1			_
39.5	Metric 6. Plant commur	-	•	topography.
ax 20 pts. subtotal	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	Vegetation 0	Community Cover Scale Absent or comprises <0.1ha (0	.2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises s	mall part of wetland's
	1 Emergent		vegetation and is of moderate	
	Shrub Forest	2	significant part but is of low q  Present and either comprises s	
	Mudflats		vegetation and is of moderate	_
	Open water		part and is of high quality	
	Other  6b. horizontal (plan view) Interspersion.	3	Present and comprises signific vegetation and is of high qua	
	Select only one.		vogotation and to or night qua	ity
	High (5)		escription of Vegetation Quality	
	Moderately high(4) Moderate (3)	low	Low spp diversity and/or predor disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant comp	
	Low (1)		although nonnative and/or dis	• • • • • • • • • • • • • • • • • • • •
	None (0)		can also be present, and spe	
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generall threatened or endangered sp	
	or deduct points for coverage	In the In-		
		high	A predominance of native spec	
	Extensive >75% cover (-5)	nign	A predominance of native spec and/or disturbance tolerant na	ative spp absent or virtually
	Extensive >75% cover (-5) Moderate 25-75% cover (-3)	nign	and/or disturbance tolerant na absent, and high spp diversity	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)	nign	and/or disturbance tolerant na	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)		and/or disturbance tolerant nations absent, and high spp diversity the presence of rare, threater to the Dopen Water Class Quality	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	Mudflat and	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater distance Quality  Absent <0.1ha (0.247 acres)	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)		and/or disturbance tolerant nations absent, and high spp diversity the presence of rare, threater to the Dopen Water Class Quality	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater distribution of the presence of t	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater distributed Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41 High 4ha (9.88 acres) or more	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater description of the presence of the presence of the presence of the presence of the presentation of the presence of the	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater discovering discoveri	ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres) 88 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0 1	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater di Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41 High 4ha (9.88 acres) or more  Absent Present very small amounts or of marginal quality	ative spp absent or virtually and often, but not always, ned, or endangered spp  acres) 88 acres)  if more common
dified 2	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater distributed of the present of	acres) 88 acres)  if more common  but not of highest
dified 2	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3 Microtopog 0 1	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater di Open Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41 High 4ha (9.88 acres) or more  Absent Present very small amounts or of marginal quality	acres)  if more common  but not of highest in highest quality

Site: F	irstEne	rgy	Holloway	-Knox 138kV	′	Rater(s): M. Thomay	er, B.	Robertson	<b>Date:</b> 5/09/2	2018
4		1							w-bcr-5/09/2	2018-03
1	1	-				rea (size).				
max 6 pts.	subtotal	Sele	>50 ac 25 to - 10 to - 3 to < 0.3 to ✓ 0.1 to	class and assign cres (>20.2ha) (6 <50 acres (10.1 to <25 acres (4 to <10 acres (1.2 to < 3 acres (0.12 to < 0.3 acres (0.04 acres (0.04)) (0 pc)	pts 0 <2 10.1 4ha <1 to <	) (0.2ha) (5 pts) ha) (4 pts) (3 pts) 2ha) (2pts)				
11	12	l <sub>M</sub> e	etric 2.	Upland I	bu	iffers and surrou	ındin	a land use.		
max 14 pts.	subtotal	2a.	Calculate av  WIDE  MEDII  NARR  VERY  Intensity of  VERY  LOW.  MODE	verage buffer widt . Buffers average .UM. Buffers aver .OW. Buffers aver .NARROW. Buff .surrounding land .LOW. 2nd grow .Old field (>10 ye .ERATELY HIGH.	h. e 50 erag ers use th o	Select only one and assign scr m (164ft) or more around wetk 25m to <50m (82 to <164ft) a e 10m to <25m (32ft to <82ft) average <10m (<32ft) around . Select one or double check r older forest, prairie, savanna ), shrubland, young second gro sidential, fenced pasture, park ben pasture, row cropping, mir	ore. Do rand pering round we around we wetland pand aver h, wildlife bowth fore conservers.	not double check. neter (7) tetland perimeter (4) wetland perimeter (1) perimeter (0) rage. e area, etc. (7) set. (5) ration tillage, new falle		
14.5	26.5	Me	etric 3.	Hydrolo	gy	<b>'.</b>				
max 30 pts.	subtotal	3a. 3c.	Sources of High p Other Precip Seaso Peren Maximum w >0.7 ( 0.4 to V <0.4m Modification	Water. Score all by groundwater (5 groundwater (3) bitation (1) bitation (1) bitation (1) brial surface water ater depth. Select (27.6in) (3) 0.7m (15.7 to 27.1 (<15.7in) (1)	urfar (la ct or	ce water (3) ke or stream) (5) hly one and assign score.  (2) ic regime. Score one or double	3d. Du	Part of wetland/u Part of riparian o Iration inundation/sat Semi- to perman Regularly inunda Seasonally inunda Seasonally saturi	ain (1) lake and other hum pland (e.g. forest), r upland corridor (1 uration. Score one ently inundated/sat ted/saturated (3)	complex (1) ) e or dbl check. curated (4)
9	35.5	1	Recov Recov Recer	vered (7) vering (3) nt or no recovery (	(1)	ditch tile dike weir stormwater input	,	point source (nor filling/grading road bed/RR trac dredging other	,	
max 20 pts.	subtotal	-1				teration and Dev	_	ment.		
		4b.	None Recov Recer Habitat dev Excell Very of Good Model Fair (3	or none apparent vered (3) vering (2) at or no recovery (elopment. Select ent (7) good (6) (5) rately good (4) 8) o fair (2) 1)	(4) (1) onl	y one and assign score.  double check and average.				
SI	35.5	age	Recov ✓ Recov	or none apparent vered (6) vering (3) it or no recovery (	. ,	Check all disturbances obs mowing grazing clearcutting selective cutting woody debris removal toxic pollutants		shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme	atic bed removal	

PRAM v. 5.0 Field Form Quantitative Rating			Wetland NH-6
Site: FirstEnergy Holloway-Knox 138kV Rater	(s): M. Th	omayer, B. Robertson	<b>Date:</b> 5/09/2018
35.5			w-bcr-5/09/2018-03
subtotal first page			
35.5 Metric 5. Special Wetlar	nds.		
ax 10 pts. subtotal Check all that apply and score as indicated.			
Bog (10) Fen (10)			
Old growth forest (10)			
Mature forested wetland (5)	unrectricted by	drology (10)	
Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland-		=	
Lake Plain Sand Prairies (Oak Ope	-	legy (e)	
Relict Wet Prairies (10)			
Known occurrence state/federal thro			
Significant migratory songbird/wate			
Category 1 Wetland. See Question	i i Qualitative r	kating (-10)	
1 36.5 Metric 6 Plant commun	itios int	orenoreion micro	topography
ivietric o. Flant commun		- ·	nopograpny.
ax 20 pts. subtotal 6a. Wetland Vegetation Communities.	_	Community Cover Scale	2471 cores) contiguous area
Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha (0 Present and either comprises	
1 Emergent	•	vegetation and is of moderat	
Shrub		significant part but is of low	
Forest	2	Present and either comprises	significant part of wetland's
Mudflats		_	te quality or comprises a small
Open water		part and is of high quality	pont nort or more of watlands
Other6b. horizontal (plan view) Interspersion.	3	vegetation and is of high qua	cant part, or more, of wetland's
Select only one.		vogotation and to or riight que	anty .
High (5)	Narrative D	escription of Vegetation Qualit	у
Moderately high(4)	low	Low spp diversity and/or predo	
Moderate (3)		disturbance tolerant native s	•
Moderately low (2)	mod	Native spp are dominant comp	•
Low (1)  √ None (0)		can also be present, and spe	sturbance tolerant native spp
6c. Coverage of invasive plants. Refer		moderately high, but general	*
to Table 1 ORAM long form for list. Add		threatened or endangered sp	
or deduct points for coverage	high	A predominance of native spec	
Extensive >75% cover (-5)		and/or disturbance tolerant r	
Moderate 25-75% cover (-3)  ✓ Sparse 5-25% cover (-1)		absent, and high spp diversition the presence of rare, threate	
Nearly absent <5% cover (0)		The presence of fare, threate	rica, or charigered app
Absent (1)	Mudflat and	d Open Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	<u> </u>
1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9	<u> </u>
Standing dead >25cm (10in) dbh		High 4ha (9.88 acres) or more	
Amphibian breeding pools	Microtopoo	raphy Cover Scale	
	0	Absent	
	1	Present very small amounts or	r if more common
		of marginal quality	
lified 2	2	Present in moderate amounts,	=
·····	3	quality or in small amounts of Present in moderate or greater	
	3	and of highest quality	i amounto
36.5 GRAND TOTAL (max 100 pts)		transport quanty	

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): M. Thomayer, B. Robertson Da	nte: 5/08/2018
4	4	W-r	mdt-5/08/2018-01
1	1	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
12	13	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal		eld. (3)
14.5	27.5	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  100 year floodplain (1) Part of wetland/upland Part of wetland/upland Part of riparian or upla 3d. Duration inundation/saturation Regularly inundated/saturation Semi- to permanently Regularly inundated/saturation Seasonally inundated	and other human use (1) (e.g. forest), complex (1) nd corridor (1) n. Score one or dbl check inundated/saturated (4) aturated (3) (2) n upper 30cm (12in) (1)
6.5	34	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  Recovered (6)  Recovering (3)  Recent or no recovery (1)  Recent or no recovery (1)  Recent or no recovery (1)	ed removal
SI	34 ubtotal this pa	selective cutting woody debris removal toxic pollutants dredging farming nutrient enrichment	

RAM v. 5.0 Field	Form Quantitative Rating			Wetland NH
Site: FirstEne	ergy Holloway-Knox 138kV Rater	<b>(s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
0.4	7			w-mdt-5/08/2018-
34				
subtotal first p	page			
34	Metric 5. Special Wetlar	nds.		
nax 10 pts. subtotal	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-u	uprostricted by	drology (10)	
	Lake Erie coastal/tributary wetland-r			
	Lake Plain Sand Prairies (Oak Oper			
	Relict Wet Prairies (10)	atonad ar and	angered energies (10)	
	Known occurrence state/federal three Significant migratory songbird/water		• , , ,	
	Category 1 Wetland. See Question			
1 35	1			_
1 35	」Metric 6. Plant commun	-	•	topography.
nax 20 pts. subtotal	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	Vegetation 0	Community Cover Scale Absent or comprises <0.1ha (0	2471 acros) contiguous area
	Aquatic bed	1	Present and either comprises s	
	1 Emergent		vegetation and is of moderate	
	Shrub		significant part but is of low q	· · · · · · · · · · · · · · · · · · ·
	Forest Mudflats	2	Present and either comprises s vegetation and is of moderate	-
	Open water		part and is of high quality	quality of complicate a circuit
	Other	3	Present and comprises signification	
	6b. horizontal (plan view) Interspersion. Select only one.		vegetation and is of high qual	ity
	High (5)	Narrative D	escription of Vegetation Quality	,
	Moderately high(4)	low	Low spp diversity and/or predor	
	Moderate (3)  Moderately low (2)	mod	disturbance tolerant native sp  Native spp are dominant compo	
	Low (1)	mou	although nonnative and/or dis	•
	✓ None (0)		can also be present, and spe	•
	6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		moderately high, but generall	
	to rable i ORAW long form for list. Add		threatened or endangered sp	
	or deduct points for coverage	high	A predominance of native spec	ies, with hornative spp
	or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native spec and/or disturbance tolerant na	ative spp absent or virtually
	Extensive >75% cover (-5) Moderate 25-75% cover (-3)	high	and/or disturbance tolerant na absent, and high spp diversity	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)	high	and/or disturbance tolerant na	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5) Moderate 25-75% cover (-3)		and/or disturbance tolerant na absent, and high spp diversity	ative spp absent or virtually y and often, but not always,
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	Mudflat and	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)	ative spp absent or virtually y and often, but not always, ned, or endangered spp
	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.	Mudflat and	and/or disturbance tolerant not absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47	ative spp absent or virtually and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	Mudflat and	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)	ative spp absent or virtually and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater downward Dopen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.48)  High 4ha (9.88 acres) or more	ative spp absent or virtually and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater discovered Department of the presence of rare, threater discovered Department of the presence of rare, threater discovered Department of the presence of the present of the presence of the present of the presence of the pr	ative spp absent or virtually and often, but not always, ned, or endangered spp
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater downward Dopen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.48)  High 4ha (9.88 acres) or more	ative spp absent or virtually and often, but not always, ned, or endangered spp  acres)  88 acres)
	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3  Microtopog 0 1	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater described Depen Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41) High 4ha (9.88 acres) or more praphy Cover Scale  Absent  Present very small amounts or of marginal quality	ative spp absent or virtually and often, but not always, ned, or endangered spp  acres) 88 acres)
dified 2	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  praphy Cover Scale  Absent  Present very small amounts or of marginal quality  Present in moderate amounts,	acres) 88 acres)  if more common  but not of highest
dified 2	Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3  Microtopog 0 1	and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater described Depen Water Class Quality  Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41) High 4ha (9.88 acres) or more praphy Cover Scale  Absent  Present very small amounts or of marginal quality	acres)  acres)  if more common  but not of highest highest quality

Site: F	irstEne	ergy Holloway-Knox 138kV Rater(s): M. Thomayer, B. Robertson	<b>Date:</b> 5/08/2018
0		1	w-mdt-5/08/2018-02
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
12	12	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	w field. (3)
10	22	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all that apply.  100 year floodplair  Part of wetland/upl  Part of riparian or	n (1) ake and other human use (1) land (e.g. forest), complex (1) upland corridor (1) ration. Score one or dbl check. ntly inundated/saturated (4) ed/saturated (3) tted (2) ted in upper 30cm (12in) (1)
5	27	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovered (6) Recovering (3)  None or none apparent (9) Recovering (3)	
ę.	27	Recent or no recovery (1)    clearcutting	nt

RAM v. 5.0 Field F	Form Quantitative Rating			Wetland NH
Site: FirstEne	ergy Holloway-Knox 138kV Rat	er(s): M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
0.7	1			w-mdt-5/08/2018-
27	J			
subtotal first p	age <b>1</b>			
) 27	Metric 5. Special Wetl	ands.		
nax 10 pts. subtotal	Check all that apply and score as indicated	d.		
	Bog (10) Fen (10)			
	Old growth forest (10)			
	Mature forested wetland (5)	nd uproprieted by	dralagy (10)	
	Lake Erie coastal/tributary wetla  Lake Erie coastal/tributary wetla	•		
	Lake Plain Sand Prairies (Oak C		37-97 (-)	
	Relict Wet Prairies (10)			
	Known occurrence state/federal		• • • •	
	Significant migratory songbird/w Category 1 Wetland. See Ques			
	1	Quantanto i	tag ( 10)	
-1 26	Metric 6. Plant commu	unities, inf	terspersion, micro	topography.
ax 20 pts. subtotal	6a. Wetland Vegetation Communities.	•	Community Cover Scale	1 0 1 7
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	
	Aquatic bed	1	Present and either comprises	
	1 Emergent Shrub		vegetation and is of moderate significant part but is of low of the significant part but is of moderate significant part but is of low of the significant part but is of low of lo	
	Forest	2	Present and either comprises	
	Mudflats			te quality or comprises a smal
	Open water		part and is of high quality	
	Other	3	Present and comprises signific	
	<ol><li>6b. horizontal (plan view) Interspersion.</li><li>Select only one.</li></ol>		vegetation and is of high qua	anty
	High (5)	Narrative D	Description of Vegetation Qualit	У
	Moderately high(4)	low	Low spp diversity and/or predo	minance of nonnative or
	Moderate (3)		disturbance tolerant native s	<u>'</u>
	Moderately low (2)	mod	Native spp are dominant comp	•
	Low (1)  ✓ None (0)		can also be present, and spe	sturbance tolerant native spp
	6c. Coverage of invasive plants. Refer		moderately high, but genera	
	to Table 1 ORAM long form for list. Add		threatened or endangered sp	•
	or deduct points for coverage	high	A predominance of native spec	
	Extensive >75% cover (-5)		and/or disturbance tolerant r	
	✓ Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)		absent, and high spp diversi the presence of rare, threate	
	Nearly absent <5% cover (0)		the precented or raile; amount	riou, or oriumingorou opp
	Absent (1)		d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	7.0000
	Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	1	Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9	
	Coarse woody debris >15cm (6ii		High 4ha (9.88 acres) or more	-
	Standing dead >25cm (10in) dbh			
	Amphibian breeding pools		graphy Cover Scale	
		0	Absent  Procent yery small amounts of	r if more common
		1	Present very small amounts or of marginal quality	ii more common
				but not of highest
		2	Present in moderate amounts.	
tegory 1		2	Present in moderate amounts, quality or in small amounts of	=
tegory 1		3		of highest quality

Site: F	irstEne	gy Holloway-Knox 138kV Rater(s): M.	Thomayer, B. Robertson	<b>Date:</b> 5/08/2018
4	4			w-mdt-5/08/2018-03
1	1	Metric 1. Wetland Area (size).		
max 6 pts.	subtotal	Select one size class and assign score.		
12	13	Metric 2. Upland buffers and s	urrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and WIDE. Buffers average 50m (164ft) or more an MEDIUM. Buffers average 25m to <50m (82 to NARROW. Buffers average 10m to <25m (32ft) VERY NARROW. Buffers average <10m (<32ft) VERY NARROW. Buffers average <10m (<32ft) VERY LOW. 2nd growth or older forest, prairie ✓ LOW. Old field (>10 years), shrubland, young some MODERATELY HIGH. Residential, fenced pas HIGH. Urban, industrial, open pasture, row cro	assign score. Do not double check. ound wetland perimeter (7) <164ft) around wetland perimeter (4) it to <82ft) around wetland perimeter (1) t) around wetland perimeter (0) ble check and average. , savannah, wildlife area, etc. (7) second growth forest. (5) ture, park, conservation tillage, new falle	
12	25	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign some select only one and assign	Part of wetland/u Part of riparian o 3d. Duration inundation/sat core. Semi- to perman Regularly inunda Seasonally inund V Seasonally satura e or double check and average.	ain (1) //lake and other human use (1) //lake and corridor (1) //lake and other human use (1) //lake and other
6.5	31.5	stormwater	<del></del>	
max 20 pts.	subtotal	## Additional Authoritisms   ## Additional Authoritisms   ## Additional Authoritisms   ## Authoritism	rerage.  ances observed  shrub/sapling rer herbaceous/aqua sedimentation dredging	
SI	ubtotal this pa	toxic polluta		ent

Site: FirstEnergy Holloway-Knox 138kV Rate	<b>r(s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
31.5			w-mdt-5/08/2018-03
subtotal first page			
0 31.5 Metric 5. Special Wetla	nds.		
max 10 pts. subtotal 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	l-unrestricted hy	drology (10)	
Lake Erie coastal/tributary wetland	•	ology (5)	
Lake Plain Sand Prairies (Oak Operation Relict Wet Prairies (10)	enings) (10)		
Known occurrence state/federal th			
Significant migratory songbird/wate Category 1 Wetland. See Questio			
1 20.5			
-1 30.5 Metric 6. Plant commu	-	•	topography.
max 20 pts. subtotal 6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	Vegetation 0	Community Cover Scale Absent or comprises <0.1ha (0.	2471 acros) contiguous area
Aquatic bed	1	Present and either comprises s	
1 Emergent		vegetation and is of moderate	
Shrub Forest	2	significant part but is of low question Present and either comprises s	
Mudflats		vegetation and is of moderate	-
Open water Other	3	part and is of high quality  Present and comprises signification	ant part or more of wetland's
6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	
Select only one.			
High (5)  Moderately high(4)	low	Low spp diversity and/or predor	
Moderate (3)		disturbance tolerant native sp	ecies
Moderately low (2) Low (1)	mod	Native spp are dominant composition although nonnative and/or dis	=
✓ None (0)		can also be present, and spe	
6c. Coverage of invasive plants. Refer		moderately high, but generally	•
to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered sp A predominance of native spec	
Extensive >75% cover (-5)	· ·	and/or disturbance tolerant na	ative spp absent or virtually
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity the presence of rare, threater	•
Nearly absent <5% cover (0)		and production of railog amounts	iou, oi ciidaiigeiou opp
Absent (1) 6d. Microtopography.	Mudflat and	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	acres)
1 Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.	88 acres)
Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	3	High 4ha (9.88 acres) or more	
Amphibian breeding pools	Microtopog	graphy Cover Scale	
	0	Absent Present very small amounts or	if more common
	'	of marginal quality	ii more common
or 2 gray 7000	2	Present in moderate amounts,	_
or 2 gray zone	3	quality or in small amounts of Present in moderate or greater	
20.5		and of highest quality	
30.5 GRAND TOTAL (max 100 pts)		<del></del>	_

Site: F	irstEne	gy Holloway-Knox 138kV Rater(s): M	1. Thomayer, B. Robertson	<b>Date:</b> 5/08/2018
	0			w-mdt-5/08/2018-04
0	0	Metric 1. Wetland Area (size)		
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)		
12	12	Metric 2. Upland buffers and	surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one ar  ✓ WIDE. Buffers average 50m (164ft) or more  MEDIUM. Buffers average 25m to <50m (82  NARROW. Buffers average 10m to <25m (32  VERY NARROW. Buffers average <10m (<32  2b. Intensity of surrounding land use. Select one or of the surrounding land use.	and assign score. Do not double check. a around wetland perimeter (7) a to <164ft) around wetland perimeter (4) a2ft to <82ft) around wetland perimeter (1) a2ft) around wetland perimeter (0) double check and average. arie, savannah, wildlife area, etc. (7) ag second growth forest. (5) assture, park, conservation tillage, new faller	
12	24	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign  >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	Part of wetland/u Part of riparian o 3d. Duration inundation/sat Semi- to perman Regularly inunda Seasonally inunda Seasonally satura one or double check and average.  urbances observed point source (nor filling/grading road bed/RR trace dredging	ain (1) //ake and other human use (1) //ake and other human use (1) //ake and other human use (1) //apland (e.g. forest), complex (1) r upland corridor (1) //arration. Score one or dbl check ently inundated/saturated (4) //ated/saturated (3) //ated (2) //ated in upper 30cm (12in) (1)  //pastormwater)
6.5	30.5	Metric 4. Habitat Alteration a	nd Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign  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  None or none apparent (9)  Recovered (6)  Recovering (3)  Recent or no recovery (1)  Check all disturation.  Check all disturation.  Recovering (3)  Recent or no recovery (1)	average.  average.  urbances observed  herbaceous/aquasedimentation dredging  cutting	
SI	30.5	woody de toxic polli	ebris removal farming	ent

ORAM v. 5.0 Field F	orm Quantitative Rating			Wetland NH
<b>Site:</b> FirstEne	rgy Holloway-Knox 138kV Rater(	( <b>s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
00.5				w-mdt-5/08/2018-
30.5				
subtotal first pa	ge			
30.5	Motric E Special Wetlan	de		
	Metric 5. Special Wetlan	us.		
max 10 pts. subtotal	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-u	nrestricted hyd	drology (10)	
	Lake Erie coastal/tributary wetland-re	-		
	Lake Plain Sand Prairies (Oak Open	ings) (10)		
	Relict Wet Prairies (10) Known occurrence state/federal thre	atened or enda	angered species (10)	
	Significant migratory songbird/water		0 1 ( )	
	Category 1 Wetland. See Question	1 Qualitative R	ating (-10)	
<b>-1</b> 29.5				
-1 29.5	Metric 6. Plant commun	-	•	topography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	0.474
	Score all present using 0 to 3 scale.  Aquatic bed	0	Absent or comprises <0.1ha (0. Present and either comprises s	
	1 Emergent	•	vegetation and is of moderate	
	Shrub		significant part but is of low quality	
	Forest Mudflats	2	Present and either comprises s vegetation and is of moderate	-
	Open water		part and is of high quality	quality of comprises a smar
	Other	3	Present and comprises significa	
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	ity
	Select only one.  High (5)	Narrative D	escription of Vegetation Quality	,
	Moderately high(4)	low	Low spp diversity and/or predor	minance of nonnative or
	Moderate (3)		disturbance tolerant native sp	
	Moderately low (2) Low (1)	mod	Native spp are dominant compo although nonnative and/or dis	=
	✓ None (0)		can also be present, and spec	• • • • • • • • • • • • • • • • • • • •
	6c. Coverage of invasive plants. Refer		moderately high, but generall	
	to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered sp A predominance of native speci	
	Extensive >75% cover (-5)	riigir	and/or disturbance tolerant na	
	✓ Moderate 25-75% cover (-3)		absent, and high spp diversity	•
	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threater	ned, or endangered spp
	Absent (1)	Mudflat and	d Open Water Class Quality	
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47	
	1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	3	Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more	88 acres)
	Standing dead >25cm (10in) dbh		Triigit 4tta (9.00 acres) of filore	
	Amphibian breeding pools	Microtopog	raphy Cover Scale	
	<del></del>	0	Absent	7
		1	Present very small amounts or of marginal quality	it more common
		2	Present in moderate amounts,	but not of highest
tegory 1			quality or in small amounts of	highest quality
		3	Present in moderate or greater	amounts
			and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, B. Robertson	<b>Date:</b> 5/08/2018
0	0		w-mdt-5/08/2018-05
0 may 6 ata	O	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
12	12	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallowed the first park industrial, open pasture, row cropping, mining, construction. (1)	
12	24	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all 100 year floodpla  Between stream/I  ✓ Part of wetland/up  Part of riparian or  Semi- to permane  Regularly inundat  Seasonally inundat	in (1) lake and other human use (1) pland (e.g. forest), complex (1) rupland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) red/saturated (3) ated (2) ated in upper 30cm (12in) (1)
7	31	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9)  Recovered (6)  Recovering (3)  Recent or no recovery (1)  Check all disturbances observed  Recovering (3)  Recent or no recovery (1)  Check all disturbances observed  Arbitat alteration of the properties	
Q1	31 ubtotal this pa	woody debris removal farming toxic pollutants nutrient enrichme	nt

AM v. 5.0 Field Form Quantitative Rating			Wetland NH-
ite: FirstEnergy Holloway-Knox 138kV Rater	<b>′(s):</b> M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
31			w-mdt-5/08/2018-0
subtotal first page			
31 Metric 5. Special Wetlar	nds.		
10 pts. subtotal 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- Lake Erie coastal/tributary wetland-		=	
Lake Plain Sand Prairies (Oak Ope		nogy (o)	
Relict Wet Prairies (10)			
Known occurrence state/federal thro			
Significant migratory songbird/water Category 1 Wetland. See Question			
<del></del> ··			
<sup>1</sup> 30 Metric 6. Plant commun	nities. int	erspersion, micro	topography.
20 pts. subtotal 6a. Wetland Vegetation Communities.	-	Community Cover Scale	
Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0	
Aquatic bed	1	Present and either comprises s	
1 Emergent		vegetation and is of moderate	
Shrub Forest	2	significant part but is of low q  Present and either comprises s	
Mudflats	_	-	e quality or comprises a small
Open water		part and is of high quality	
Other	3	Present and comprises signific	
<ol><li>6b. horizontal (plan view) Interspersion.</li><li>Select only one.</li></ol>		vegetation and is of high qua	lity
·			
High (5)	Narrative D	escription of Vegetation Quality	,
High (5) Moderately high(4)	Narrative D	escription of Vegetation Quality Low spp diversity and/or predor	
Moderately high(4) Moderate (3)		Low spp diversity and/or predor disturbance tolerant native sp	minance of nonnative or pecies
Moderately high(4) Moderate (3) Moderately low (2)		Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant comp	minance of nonnative or pecies on the vegetation,
Moderately high(4) Moderate (3) Moderately low (2) Low (1)	low	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant comp although nonnative and/or dis	minance of nonnative or pecies onent of the vegetation, sturbance tolerant native spp
Moderately high(4) Moderate (3) Moderately low (2)	low	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant comp	minance of nonnative or pecies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to
Moderately high(4) Moderate (3) Moderately low (2) Low (1) V None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add	low	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp	minance of nonnative or pecies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p
Moderately high(4) Moderate (3) Moderately low (2) Low (1) V None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage	low	Low spp diversity and/or predo disturbance tolerant native sp Native spp are dominant compo- although nonnative and/or dis can also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native spec	minance of nonnative or pecies ponent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp
Moderately high(4) Moderate (3) Moderately low (2) Low (1) V 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)	low	Low spp diversity and/or predordisturbance tolerant native sp Native spp are dominant composition although nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant native	minance of nonnative or becies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually
Moderately high(4) Moderate (3) Moderately low (2) Low (1) V None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage	low	Low spp diversity and/or predo disturbance tolerant native sp Native spp are dominant compo- although nonnative and/or dis can also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native spec	minance of nonnative or becies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually y and often, but not always,
Moderately high(4)  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)	high	Low spp diversity and/or predordisturbance tolerant native sp.  Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp.  A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threaten	minance of nonnative or becies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually y and often, but not always,
Moderately high(4)  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)	high	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater	minance of nonnative or becies onent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually y and often, but not always,
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	high  Mudflat and	Low spp diversity and/or predoind disturbance tolerant native sponsor although nonnative and/or discant also be present, and spenderately high, but generall threatened or endangered spond/or disturbance tolerant native spectand/or disturbance tol	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.	high  Mudflat and 0 1	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater dopen Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47)	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.	high  Mudflat and	Low spp diversity and/or predoind disturbance tolerant native sponsor although nonnative and/or discant also be present, and spenderately high, but generall threatened or endangered spond/or disturbance tolerant native spectand/or disturbance tol	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)
Moderately high(4)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	Low spp diversity and/or predor disturbance tolerant native sp. Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp. A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater dominance of native special	minance of nonnative or becies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)
Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)	high  Mudflat and 0 1 2 3	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 to 9.	minance of nonnative or becies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare p ies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 High 4ha (9.88 acres) or more properties of the presence of the control of the con	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)  88 acres)
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	Low spp diversity and/or predor disturbance tolerant native sp Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater A Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 to 9.	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)  88 acres)
Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3	Low spp diversity and/or predor disturbance tolerant native sp.  Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp.  A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threatened of the presence of the control o	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres) 88 acres)
Moderately high(4)  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 (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	high  Mudflat and 0 1 2 3  Microtopog 0 1	Low spp diversity and/or predor disturbance tolerant native sp. Native spp are dominant compalthough nonnative and/or discan also be present, and spe moderately high, but generall threatened or endangered sp. A predominance of native speciand/or disturbance tolerant nabsent, and high spp diversity the presence of rare, threater dominated of the control of the cont	minance of nonnative or pecies conent of the vegetation, sturbance tolerant native spp cies diversity moderate to y w/o presence of rare peies, with nonnative spp ative spp absent or virtually y and often, but not always, ned, or endangered spp  acres)  88 acres)  if more common  but not of highest f highest quality

Site: F	irstEne	rgy Holloway-Knox 138kV Rater(s): M. Thomayer, B. Robertson	<b>Date:</b> 5/08/2018
0	0		w-mdt-5/08/2018-06
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   ✓ <0.1 acres (0.04ha) (0 pts)	
12	12	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  ✓ LOW. Old field (>10 years), shrubland, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new falled HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
12	24	Metric 3. Hydrology.	
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply.  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  3b. Connectivity. Score all 100 year floodpla  Between stream/  Part of wetland/u  Part of riparian or  3d. Duration inundation/sate  Semi- to permane  Regularly inundation/sate  Seasonally inundation/sate	sin (1)  lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
6	30	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal 30	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)  Recent or no recovery (1)  Check all disturbances observed ✓ shrub/sapling ren herbaceous/aqua selective cutting ✓ sedimentation dredging woody debris removal	
sı	ubtotal this pa	toxic pollutants nutrient enrichme	ent

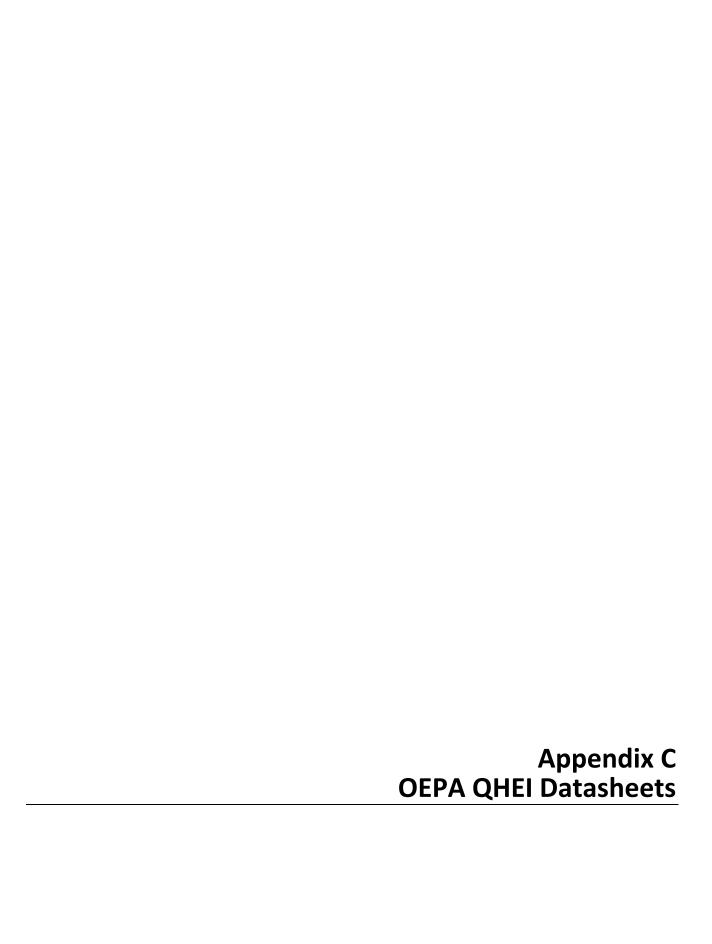
ORAM v. 5.0 Field F	orm Quantitative Rating			Wetland NH-
		Rater(s): M. Th	omayer, B. Robertson	<b>Date:</b> 5/08/2018
30				w-mdt-5/08/2018-0
subtotal first pa	ge			
30	Metric 5. Special W	etlands		
x 10 pts. subtotal	Check all that apply and score as indi-			
	Bog (10)			
	Fen (10) Old growth forest (10)			
	Mature forested wetland (5)			
	Lake Erie coastal/tributary v			
	Lake Erie coastal/tributary v	•	logy (5)	
	Relict Wet Prairies (10)	an openinge, (10)		
	Known occurrence state/fed			
	Significant migratory songbi			
	Category 1 Wetland. See C	question 1 Qualitative R	ating (-10)	
1 29	Metric 6. Plant com	munities int	arenarsian micro	otonogranhy
20 pts. subtotal	6a. Wetland Vegetation Communities	-	Community Cover Scale	nopograpny.
20 pts. Subtotal	Score all present using 0 to 3 scale.	0 vegetation		0.2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises	
	1 Emergent		vegetation and is of modera	
	Shrub		significant part but is of low	
	Forest Mudflats	2	Present and either comprises	significant part of wetland's te quality or comprises a small
	Open water		part and is of high quality	te quality of comprises a small
	Other	3		cant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion	n.	vegetation and is of high qua	ality
	Select only one.  High (5)	Norrativa D	escription of Vegetation Qualit	h.
	Moderately high(4)	low	Low spp diversity and/or predo	
	Moderate (3)		disturbance tolerant native s	
	Moderately low (2)	mod	Native spp are dominant comp	•
	Low (1)  ✓ None (0)		_	isturbance tolerant native spp
	6c. Coverage of invasive plants. Refe	er	can also be present, and spe moderately high, but genera	
	to Table 1 ORAM long form for list. A		threatened or endangered s	
	or deduct points for coverage	high	A predominance of native spe	
	Extensive >75% cover (-5)			native spp absent or virtually
	✓ Moderate 25-75% cover (-3 Sparse 5-25% cover (-1)	)	the presence of rare, threate	ity and often, but not always,
	Nearly absent <5% cover (0	))	the procence of fare, throate	oned, or oridarigored opp
	Absent (1)		Open Water Class Quality	
	6d. Microtopography.  Score all present using 0 to 3 scale.	0	Absent <0.1ha (0.247 acres)	7 ooroo)
	1 Vegetated hummucks/tussu		Low 0.1 to <1ha (0.247 to 2.47)  Moderate 1 to <4ha (2.47 to 9)	
	Coarse woody debris >15cn		High 4ha (9.88 acres) or more	
	Standing dead >25cm (10in	,		
	Amphibian breeding pools		raphy Cover Scale	
		0	Absent Present very small amounts o	r if more common
		1	of marginal quality	i ii iiioio cominion
		2	Present in moderate amounts	, but not of highest
gory 1			quality or in small amounts of	
97		3	Present in moderate or greate	er amounts
29 GRAN	ID TOTAL (max 100 pts)		and of highest quality	

Site: F	irstEne	rgy Holloway-Knox 138kV Rat	t <b>er(s):</b> B. Robertson, T. Qualio	<b>Date:</b> 6/26/2018
4	4			w-bcr-06/26/2018-01
1	1	Metric 1. Wetland Area	ı (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha)  10 to <25 acres (4 to <10.1ha) (4  3 to <10 acres (1.2 to <4ha) (3 pt)  0.3 to <3 acres (0.12 to <1.2ha) (  ✓ 0.1 to <0.3 acres (0.04 to <0.12ha)  <0.1 acres (0.04ha) (0 pts)	rpts) is) (2pts)	
3	4	Metric 2. Upland buffer	rs and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select WIDE. Buffers average 50m (16- MEDIUM. Buffers average 25m in NARROW. Buffers average 10m VERY NARROW. Buffers average 10m VERY LOW. 2nd growth or older LOW. Old field (>10 years), shru MODERATELY HIGH. Residenti	conly one and assign score. Do not double check. 4ft) or more around wetland perimeter (7) to <50m (82 to <164ft) around wetland perimeter (4) to <25m (32ft to <82ft) around wetland perimeter (1) ge <10m (<32ft) around wetland perimeter (0)	ow field. (3)
6	10	Metric 3. Hydrology.		
max 30 pts.	subtotal	3a. Sources of Water. Score all that apply High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface wa Perennial surface water (lake or s 3c. Maximum water depth. Select only one >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)    Vo.4m (<15.7in) (1) 3e. Modifications to natural hydrologic reginaters	ter (3) stream) (5) e and assign score.  100 year floodplai Between stream/l Part of wetland/up Part of riparian or Semi- to permane Regularly inundat Seasonally inundat	in (1) ake and other human use (1) bland (e.g. forest), complex (1) upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ed/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
8	18	Metric 4. Habitat Altera	ation and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or d None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one 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	and assign score.  a check and average.  a check and average.  a check all disturbances observed mowing shrub/sapling rem herbaceous/aqua sedimentation dredging woody debris removal farming	tic bed removal
SL	ubtotal this pa	ge	toxic pollutants Iaming nutrient enrichme	nt

	rgy Holloway-Knox 138kV <b>Rater</b>	(s): B. Ro	bertson, T. Qualio	<b>Date:</b> 6/26/2018
18				w-bcr-06/26/201
subtotal first pa	ige			
0 18	Metric 5. Special Wetlar	nds.		
max 10 pts. subtotal	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 hy	drology (10)	
	Lake Erie coastal/tributary wetland-			
	Lake Plain Sand Prairies (Oak Oper	-		
	Relict Wet Prairies (10)	<b>3</b> / (		
	Known occurrence state/federal three	eatened or end	angered species (10)	
	Significant migratory songbird/water	r fowl habitat or	rusage (10)	
	Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	
<b>F</b> 00				
5 23	Metric 6. Plant commun	ities. int	terspersion, micro	topography.
max 20 pts. subtotal	6a. Wetland Vegetation Communities.	•	Community Cover Scale	
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.	2471 acres) contiguous ar
	Aquatic bed	1	Present and either comprises s	
	1 Emergent		vegetation and is of moderate	•
	1 Shrub		significant part but is of low q	uality
	Forest	2	Present and either comprises s	
	Mudflats		vegetation and is of moderate	e quality or comprises a sn
	Open water		part and is of high quality	
	Other	3	Present and comprises signification	
	6b. horizontal (plan view) Interspersion.		vegetation and is of high qual	ity
	Select only one.	Name di ca		
	High (5) Moderately high(4)	low	Low spp diversity and/or predor	
	Moderate (3)	IOW	disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant compo	
	✓ Low (1)	11100	although nonnative and/or dis	_
	None (0)		can also be present, and spe	
	6c. Coverage of invasive plants. Refer		moderately high, but generall	
				•
	to Table 1 ORAM long form for list. Add		threatened or endangered sp	ρ
	to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered sp A predominance of native spec	
	or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native spec and/or disturbance tolerant na	ies, with nonnative spp ative spp absent or virtually
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity	ies, with nonnative spp ative spp absent or virtually and often, but not always
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)	high	A predominance of native spec and/or disturbance tolerant na	ies, with nonnative spp ative spp absent or virtually and often, but not always
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)		A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater	ies, with nonnative spp ative spp absent or virtually and often, but not always
	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)	Mudflat and	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater	ies, with nonnative spp ative spp absent or virtually and often, but not always
	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.	Mudflat and	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater d Open Water Class Quality Absent <0.1ha (0.247 acres)	ies, with nonnative spp ative spp absent or virtually v and often, but not always ned, or endangered spp
	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.	Mudflat and	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  1 Vegetated hummucks/tussucks	Mudflat and 0 1 2	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.41 High 4ha (9.88 acres) or more	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)	Mudflat and 0 1 2 3	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 t	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  graphy Cover Scale  Absent	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres) 88 acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9.47 t	ies, with nonnative spp ative spp absent or virtually and often, but not always ned, or endangered spp acres) 88 acres)
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  graphy Cover Scale  Absent  Present very small amounts or	ies, with nonnative spp ative spp absent or virtually and often, but not always aed, or endangered spp acres) 88 acres)
itegory 1	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3  Microtopog 0 1	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  graphy Cover Scale  Absent  Present very small amounts or of marginal quality	ies, with nonnative spp ative spp absent or virtually and often, but not always, aed, or endangered spp acres) 88 acres)  if more common but not of highest
ategory 1	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh	Mudflat and 0 1 2 3  Microtopog 0 1	A predominance of native spec and/or disturbance tolerant na absent, and high spp diversity the presence of rare, threater  d Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 Moderate 1 to <4ha (2.47 to 9. High 4ha (9.88 acres) or more  graphy Cover Scale  Absent  Present very small amounts or of marginal quality  Present in moderate amounts,	ies, with nonnative spp ative spp absent or virtually and often, but not always, ned, or endangered spp acres) 88 acres)  if more common but not of highest highest quality

Site: W-MJA	\-050420-01	Rater(s): MJA	JFW	<b>Date:</b> 05/04/2020
2.0 2.0	Metric 1. Wetland	Area (size).		
max 6 pts. subtotal	Select one size class and assign s  >50 acres (>20.2ha) (6)  25 to <50 acres (10.1 to  10 to <25 acres (4 to <1)  3 to <10 acres (1.2 to <1)  0.3 to <3 acres (0.12 to  0.1 to <0.3 acres (0.04 to  <0.1 acres (0.04ha) (0 p	ots) <20.2ha) (5 pts) 0.1ha) (4 pts) 4ha) (3 pts) <1.2ha) (2pts) o <0.12ha) (1 pt)		
1.0 3.0	Metric 2. Upland b	ouffers and surrou	nding land use	
max 14 pts. subtotal	2a. Calculate average buffer widtl WIDE. Buffers average MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growt LOW. Old field (>10 ye MODERATELY HIGH.	n. Select only one and assign sco 50m (164ft) or more around wetle age 25m to <50m (82 to <164ft) ar rage 10m to <25m (32ft to <82ft) ers average <10m (<32ft) around v	ore. Do not double check. and perimeter (7) round wetland perimeter (4) around wetland perimeter (1) wetland perimeter (0) and average. n, wildlife area, etc. (7) with forest. (5) conservation tillage, new fal	)
11.0 14.0	Metric 3. Hydrolog	gy.		
max 30 pts. subtotal	3a. Sources of Water. Score all t  High pH groundwater (5)  ✓ Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent su  Perennial surface water  3c. Maximum water depth. Select  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.0 column (15.7 to 27.0 colu	hat apply. ) urface water (3) (lake or stream) (5) t only one and assign score. Sin) (2)	Part of wetland/u Part of riparian of a semi- to permar Regularly inundation/sa Seasonally inundation/sa seasonally sature check and average.	lain (1)  n/lake and other human use (1)  upland (e.g. forest), complex (1)  or upland corridor (1)  uturation. Score one or dbl check  nently inundated/saturated (4)  ated/saturated (3)
	None or none apparent Recovered (7) Recovering (3) Recent or no recovery (	ditch tile	point source (no filling/grading road bed/RR tra dredging other	·
12.0 26.0			-	
max 20 pts. subtotal	<ul> <li>4a. Substrate disturbance. Score</li> <li>None or none apparent</li> <li>✓ Recovered (3)</li> <li>Recovering (2)</li> <li>Recent or no recovery (</li> <li>4b. Habitat development. Select</li> <li>Excellent (7)</li> <li>Very good (6)</li> <li>Good (5)</li> <li>Moderately good (4)</li> <li>✓ Fair (3)</li> <li>Poor to fair (2)</li> </ul>	(4)	<b>}.</b>	
	Poor (1) 4c. Habitat alteration. Score one	or double check and average.		
26.0	None or none apparent Recovered (6) Recovering (3) Recent or no recovery (	(9) Check all disturbances obs mowing grazing	shrub/sapling re herbaceous/aqu sedimentation dredging	latic bed removal

Site:W-MJA-050420-01	Rater(s): MJA	JFW	Date: 05/04/2020
26.0 subtotal first page  0.0 26.0 max 10 pts. subtotal  Check all that apply and score as in Bog (10)			
Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributa Lake Erie coastal/tributa Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state, Significant migratory sor Category 1 Wetland. Se	ry wetland-unrestricted hydro ry wetland-restricted hydro s (Oak Openings) (10) /federal threatened or enda ngbird/water fowl habitat or ree Question 1 Qualitative R	angered species (10) usage (10) ating (-10)	
1 27 Metric 6. Plant co	•	•	otopography.
max 20 pts. subtotal 6a. Wetland Vegetation Communi		Community Cover Scale	(0.0474
Score all present using 0 to 3 scale  O Aquatic bed Emergent	<u>0</u> 1	Present and either comprises vegetation and is of modern	ate quality, or comprises a
1 Shrub O Forest O Mudflats	2	significant part but is of low Present and either comprises vegetation and is of moder	
O Open water Other 6b. horizontal (plan view) Interspe	3	part and is of high quality  Present and comprises signification and is of high quality.	ficant part, or more, of wetland's
Select only one.			
High (5)  Moderately high(4)	Narrative Do	Low spp diversity and/or pred	dominance of nonnative or
Moderate (3)  ✓ Moderately low (2)  Low (1)	mod	disturbance tolerant native  Native spp are dominant com although nonnative and/or	•
None (0)  6c. Coverage of invasive plants. If to Table 1 ORAM long form for list.		can also be present, and s moderately high, but gener threatened or endangered	
or deduct points for coverage  ✓ Extensive >75% cover (-  Moderate 25-75% cover  Sparse 5-25% cover (-1)	high 5) (-3)	A predominance of native sp and/or disturbance tolerant	ecies, with nonnative spp native spp absent or virtually sity and often, but not always,
Nearly absent <5% cove Absent (1)		LOnen Water Class Quality	
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
Score all present using 0 to 3 scale		Low 0.1 to <1ha (0.247 to 2.4	
1 Vegetated hummucks/tu		Moderate 1 to <4ha (2.47 to	
Ocarse woody debris >1	5cm (6in) 3	High 4ha (9.88 acres) or mor	
Standing dead >25cm (1			
1 Amphibian breeding poo		raphy Cover Scale	
Category 1	<u> </u>	Absent  Present very small amounts of marginal quality	or if more common
	2	Present in moderate amount quality or in small amounts	
	3	Present in moderate or great and of highest quality	
27   GRAND TOTAL (max 100 pts	<u> </u>		





QHEI Score:

42.75
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Fair

Stream & Locatio	<b>n:</b> Crabapple Cre	ek/Holloway-Knox 138	kV Transmission L	ine	_ <i>RM:</i>	<i>Date:</i> 05_	17_ <b>/</b> 18_
s-bao-05172018-02				ame & Affiliation			
River Code:	<u></u>	_ <i>STORET #:</i>		Long.: 40 1	31 /80.98 <sup>2</sup>	11 _	Office verified location ☑
1] SUBSTRATE	neck ONLY Two su	ubstrate TYPE BOXES every type present	;	Check	ONE (Or 2 & a	overage)	
BEST TYPE  BLDR /SLABS [ BOULDER [9]	S POOL RIFFLE	OTHER TYPE  HARDPAN [4	J	ORIGIN  LIMESTONE [1]  TILLS [1]	SILT	QUALITY  HEAVY [-2]  MODERATE	
☐☐ COBBLE [8] ☐☐ GRAVEL [7] ☐☐ SAND [6] ☐☐ BEDROCK [5]	30 30	☐ ☐ MUCK [2] ☐ ☐ SILT [2] ☐ ☐ ARTIFICIAL [	_	<ul> <li>□ WETLANDS [0]</li> <li>☑ HARDPAN [0]</li> <li>□ SANDSTONE [0]</li> <li>□ RIP/RAP [0]</li> </ul>	& DDEON.	☐ NORMAL [0] ☐ FREE [1] ☐ EXTENSIVE ☐ MODERATE ☐ NORMAL [0] ☐ NONE [1]	[-2] 5
NUMBER OF BES	T TYPES: 4	or more [2] sludge fr	I substrates; ignore om point-sources)			S NORMAL [0]	Maximum 20
Comments		or less [0]		☐ SHALE [-1] ☐ COAL FINES [-2]		□ NONE [1]	
SHALLOWS (IN	quality; <b>2-</b> M ity in moderate or able, well develope	oderate amounts, but greater amounts (e.g., ed rootwad in deep / fa  1 POOLS > 7  ROOTWAD	not of highest qual very large boulde st water, or deep, v  com [2] O  S [1] A	ity or in small amount rs in deep or fast wate	s of highest Cer, large Cal pools.	AMOUN heck ONE (Or 2 of EXTENSIVE >75 MODERATE 25- SPARSE 5-<25% NEARLY ABSEN	& average) 5% [11] 75% [7] 6 [3]
Comments [1]							cover imum 20
3] CHANNEL MOR	PHOLOGY Ch			ge) STABILITY			
☐ HIGH [4] ☐ MODERATE [3] ☐ LOW [2]	EXCELLENT [7] GOOD [5] FAIR [3]	NONE [6]  ☐ RECOVERED ☐ RECOVERING	[4] G [3]	☐ HIGH [3] ☑ MODERATE [2 ☐ LOW [1]	1	Ch	annel
☐ NONE [1] [ Comments	POOR [1]	☐ RECENT OR I	NO RECOVERY [1	ı			rimum 20
4] BANK EROSIO		IAN ZONE Check (		ory for <i>EACH BANK</i> (10 DD PLAIN QUAL		average)	
EROSION  NONE / LITTLE  MODERATE [2]  HEAVY / SEVER	[3]	5 > 50m [4] ERATE 10-50m [3] ROW 5-10m [2] MARROW < 5m [1]	FOREST, SI SHRUB OR RESIDENTIA FENCED PA	WAMP [3] OLD FIELD [2] AL, PARK, NEW FIEL	D [1] O MI	DNSERVATION T RBAN OR INDUS NING / CONSTRI Dredominant land om riparian. Ric	TRIAL [0] JCTION [0]
Comments					,	,	imum 10 4.25
5] POOL / GLIDE A	TH CH	ANNEL WIDTH		RENT VELOCITY	Y	Recreation Po	- 11
Check <b>ONE</b> ( <i>ONLY</i>	POOL WIE	ONE (Or 2 & average) OTH > RIFFLE WIDTH OTH = RIFFLE WIDTH OTH < RIFFLE WIDTH	[2] TORRENT [1] VERY FAS	eck ALL that apply IAL [-1]  SLOW [1] IT [1]  INTERST	ITIAL [-1]	Primary Co Secondary C (circle one and comme	ontact
☐ 0.2-<0.4m [1] ☐ < 0.2m [0]				<b>TE [1]</b> $\Box$ <b>EDDIES I</b> for reach - pools and $\Box$			Pool / g
Comments	ow at time of surv	ev	maicate	ioi reaeir - pools and l	inics.		imum 12
Indicate for fu of riffle-obliga RIFFLE DEPTH	te species:		st be large en k ONE (Or 2 & ave FFLE / RUN SI	erage).		on <u>☑NO RIFI</u> EMBEDDEDI	FLE [metric=0]
BEST AREAS > 10ci	n [2]	JM > 50cm [2] ☐ ST/ JM < 50cm [1] ☐ MO	ABLE (e.g., Cobbl D. STABLE (e.g.,	e, Boulder) [2]	□ NOI ☑ LO\ □ MO	NE [2] <i>N</i> [1] DERATE [0]	Riffle /
Comments	-				L] EX1	TENSIVE [-1] Max	kimum 8
6] GRADIENT ( 2.2		ERY LOW - LOW [2-4	1	%POOL:	) %GLIDE:	Gra	adient
DRAINAGE AR		IODERATE [6-10] IIGH - VERY HIGH [10	9-6]	%RUN: (100	)%RIFFLE:(		ximum 8

s-bao-05172018-03 FI MEASUREMENTS bankfull max. depth floodprone x<sup>2</sup> width bankfull x depth x bankfull width entrench. ratio Comment RE: Reach consistency/Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc Legacy Tree: max. depth W/D ratio x depth x width HARDENED/URBAN/DIRT&GRIME LOGGING / IRRIGATION / COOLING FALSE BANK / MANURE / LAGOON BMPs-CONSTRUCTION-SEDIMENT NATURAL / WETLAND / STAGNANT WWTP / CSO / NPDES / INDUSTRY WASH H<sub>2</sub>0 / TILE / H<sub>2</sub>0 TABLE ACID / MINE / QUARRY / FLOW ATMOSPHERE / DATA PAUCITY **BANK / EROSION / SURFACE** PARK / GOLF / LAWN / HOME **CONTAMINATED / LANDFILL** El ISSUES Circle some & COMMENT FLOOD CONTROL / DRAINAGE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MODIFIED / DIPPED OUT / NA MOVING-BEDLOAD-STABLE IMPOUNDED / DESICCATED YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED RELOCATED / CUTOFFS DI MAINTENANCE **ARMOURED / SLUMPS** LEVEED / ONE SIDED ISLANDS / SCOURED beaver dam INVASIVE MACROPHYTES ☐ SLUDGE DEPOSITS ☐ CSOs/SSOs/OUTFALLS **BI AESTHETICS EXCESS TURBIDITY** POOL: □>100ft²□>3ft ☐ NUISANCE ALGAE AREA DEPTH **NUISANCE ODOR** OHWM = 25', TOB = 30' DISCOLORATION TRASH / LITTER Perennial flow regime. FOAM / SCUM **OIL SHEEN** CJ RECREATION CH CI ☐ SECCHI DEPTH☐ ☐ HIGH ☐ ☐ UP ☐ ☐ NORMAL ☐ ☐ LOW ☐ ☐ DRY ☐ ☐ DRY 1st -sample pass- 2nd --sample pass--□ > 70 cm/ CTB CLARITY STAGE □ 20-<40 cm Stream Drawing AJ SAMPLED REACH □ 40-70 cm Check ALL that apply < 20 cm T-Line ROW ☐ 10%-<30% ☐ <10%- CLOSED ✓ > 85%- OPEN

☐ 55%-<85%
</p> CANOPY 30%-<55% DISTANCE 0.15 Km 0.12 Km METHOD □ BOAT
□ WADE
□ L. LINE
□ OTHER 0.5 Km 0.2 Km OTHER meters 37 



**ChieEPA** 

Stream NH-12

Fair

#### Qualitative Habitat Evaluation Index and Use Assessment Field Sheet QHEI Score: 56.75

Stream & Location: W	Vheeling Creek/Holloway-Knox 13	8kV Transmission Line	RM: Da	<b>ate:</b> 05   21   18
s-tmq-05212018-01		Scorers Full Name & Affiliatio		
River Code:	<i>STORET #:</i>	Lat./Long.: 40.11	2, -80.9672	Office verified location ☑
1] SUBSTRATE Check	ONLY Two substrate TYPE BOXE	S:		
BEST TYPES P	te % or note every type present OOL RIFFLE	POOL RIFFLE [4]  [3]  10  10  10  10  SANDSTONE [1]  SANDSTONE [6]  RIP/RAP [0]	I HEAN I MOD I NORI I FREE  OI DEON EXTE I MOD I NORI I NONI I HEAN I MOD I NORI I NONI I HEAN I MOD I NORI I NONI I NONI I HEAN I MOD I NORI I HEAN I HEAN I MOD I NORI I NONI I NONI I NONI I NONI I NONI I NONI I HEAN	ERATE [-1] Substrate MAL [0]
21 INSTREAM COVER	Indicate presence 0 to 3: <b>0</b> -Abs	ent; 1-Very small amounts or if more com	mon of marginal	MOUNT
quality; <b>3</b> -Highest quality in	quality; 2-Moderate amounts, but moderate or greater amounts (e.gwell developed rootwad in deep / [1] POOLS > GETATION [1] ROOTWA	the not of highest quality or in small amougle, very large boulders in deep or fast was fast water, or deep, well-defined, function to the company of the co	nts of highest ater, large Check ON Che	E (Or 2 & average)  SIVE >75% [11]  ATE 25-75% [7]  E 5-<25% [3]  / ABSENT <5% [1]  Cover
Comments				Maximum 11
SINUOSITY         DEVI           □ HIGH [4]         □ EX           □ MODERATE [3]         ☑ GG           ☑ LOW [2]         □ FA	CELLENT [7] □ NONE [6]  DOD [5] □ RECOVERE  AIR [3] □ RECOVERI	LIZATION STABILITY  HIGH [3]  D [4] MODERATE	[2]	Channel Maximum 20
River right looking downstrear  EROSION  NONE / LITTLE [3]  MODERATE [2]		CONE in each category for EACH BANK FLOOD PLAIN QUA FOREST, SWAMP [3] SHRUB OR OLD FIELD [2] FENCED PASTURE [1] OPEN PASTURE, ROWCROP	LITY  CONSERVA  URBAN OR  Indicate predomina	ATION TILLAGE [1] R INDUSTRIAL [0] ONSTRUCTION [0] ant land use(s)  A. Riparian
Comments				Maximum 4.25
MAXIMUM DEPTH  Check ONE (ONLY!)  □ > 1m [6] □ 0.7-<1m [4]	O RIFFLE / RUN QUALITY CHANNEL WIDTH Check ONE (Or 2 & average POOL WIDTH > RIFFLE WIDTI POOL WIDTH = RIFFLE WIDTI POOL WIDTH < RIFFLE WIDTI	H[2] ☐ TORRENTIAL [-1] ☐ SLOW   H[1] ☐ VERY FAST [1] ☐ INTERS	Prima [1] Second (circle one a) MITTENT [-2] S [1]	tion Potential ary Contact dary Contact and comment on back  Pool / Current Maximum  3
				12
Indicate for function of riffle-obligate is RIFFLE DEPTH  ☑ BEST AREAS > 10cm [2] ☐ BEST AREAS 5-10cm [1] ☐ BEST AREAS < 5cm [metric=0]  Comments	RUN DEPTH         R           MAXIMUM > 50cm [2]         ✓ S           ✓ MAXIMUM < 50cm [1]	nust be large enough to suppo eck ONE ( <i>Or</i> 2 & average). RIFFLE / RUN SUBSTRATE R TABLE (e.g., Cobble, Boulder) [2] IOD. STABLE (e.g., Large Gravel) [1] NSTABLE (e.g., Fine Gravel, Sand) [0]	ort a population  ☐  IFFLE / RUN EMBEI ☐ NONE [2] ☐ LOW [1] ☐ MODERATE ☐ EXTENSIVE	ro1 Riffle
<b>6] GRADIENT</b> ( 1.98	ft/mi) VERY LOW - LOW [2	-4] %POOL: 30	) %GLIDE:( 10	) Gradient
DRAINAGE AREA	MODERATE [6-10]	761 3321	)%RIFFLE:( 50	) Maximum

ess directions, etc.				FJ MEASUREMENTS  \overline{x} width \overline{x} depth max. depth \overline{x} bankfull width bankfull \overline{x} depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Legacy Tree:		pools
Comment RE: Reach consistency/Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc. Perennial flow regime. wheeling creek				EJISSUES WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY		road road
n/Observed - Inferred, <i>Other</i>				Circle some & COMMENT		crabapple road
reach typical of steam?, <i>Recreatior</i> eek				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	cow pasture	Littles
Comment RE: Reach consistency/ Is rea Perennial flow regime. wheeling creek	muskrat or similar observed	OHWM = 25', TOB = 30'		BJ AESTHETICS  □ NUISANCE ALGAE □ INVASIVE MACROPHYTES □ EXCESS TURBIDITY □ DISCOLORATION □ FOAM / SCUM □ OIL SHEEN □ OIL SHEEN □ TRASH / LITTER □ NUISANCE ODOR □ SLUDGE DEPOSITS □ SLUDGE DEPOSITS □ CSOS/SSOS/OUTFALLS POOL: □>100ft²□>3ft		
AJ SAMPLED REACH Check ALL that apply	METHOD STAGE	☐ L. LINE ☐ UP ☐	DISTANCE   LOW	0.5 km	Stream Drawing:	





**QHEI Score:** 51.5

Stream & Location: Progue	Run/Holloway-Knox 138kV Trans	mission Line	RM: Dat	<b>!e:</b> 05 <b>/</b> 21 <b>_/</b> 18_
s-tmq-05212018-03	Scol	rers Full Name & Affiliatio	n: T.Qualio, J.Freer-CH2N	1 HILL
River Code:	STORET #:	Lat./Long.: 40.09	46, -80.9492	Office verified location ☑
1] SUBSTRATE Check ONLY	Two substrate TYPE BOXES;	,	ck ONE (Or 2 & average)	
BEST TYPES POOL	r note every type present  OTHER TYPES  P	ORIGIN	( ,	ALITY
BLDR /SLABS [10]	HARDPAN [4]	OOL RIFFLE LIMESTONE [1		
BOULDER [9]	DETRITUS [3]	TILLS [1]	50.1	RATE [-1] Substrate
☐ COBBLE [8]	10			[4]
□ SAND [6]	ARTIFICIAL [0]	SANDSTONE [	0] CDDEA EXTEN	NSIVE [-2]
□□ BEDROCK [5]	(Score natural sub	estrates; ignore RIP/RAP [0]	0] GODEON □ EXTEN  □ MODE □ MODE □ NORM □ NONE	RATE [-1] Maximum
NUMBER OF BEST TYPES	5: 4 or more [2] sludge from p 3 or less [0]	point-sources) LACUSTURINE	[0] ☐ VORM	AL [0] 20
Comments	☑ 3 or less [U]		2]	ניו
max pool depth: 8 inches				
2] INSTREAM COVER Indicated	ate presence 0 to 3: <b>0-</b> Absent; <b>1-</b>	Very small amounts or if more com of highest quality or in small amou	nmon of marginal AM	IOUNT
quality, 3-Highest quality in mode	rate or greater amounts (e.g., ver	y large boulders in deep or fast wa	ater, large Check ONE	(Or 2 & average)
diameter log that is stable, well de UNDERCUT BANKS [1]		ater, or deep, well-defined, function [2] 1 OXBOWS, BACKWA		VE >75% [11] TE 25-75% [7]
OVERHANGING VEGETAT				5-<25% [3]
SHALLOWS (IN SLOW WA				ABSENT <5% [1]
ROOTMATS [1]				Cover
Comments				Maximum 10
01 011444151 4405514040	<b>91</b> / 01 1 01/5: 1 1	(0.00		
3] CHANNEL MORPHOLOG SINUOSITY DEVELOR				
☐ HIGH [4] ☐ EXCELL				
☐ MODERATE [3] ☐ GOOD [		☑ MODERATE	[2]	
☐ LOW [2] ☐ FAIR [3]				Channel
□ NONE [1] □ POOR [1]  Comments	1] RECENT OR NO F	RECOVERY [1]		Maximum 15
Comments				20
4] BANK EROSION AND R	ZIPARIAN ZONE Check ONE	in each category for <b>EACH BANK</b>	((Or 2 per bank & average)	
River right looking downstream	RIPARIAN WIDTH	FLOOD PLAIN QUA		
		FOREST, SWAMP [3]		TION TILLAGE [1]
		SHRUB OR OLD FIELD [2]	URBAN OR	
		☐ RESIDENTIAL, PARK, NEW FIE ☐ FENCED PASTURE [1]	Indicate predominar	NSTRUCTION [0]
	NONE [0]	OPEN PASTURE, ROWCROP	[0] past 100m riparian.	Riparian
Comments				<sub>Maximum</sub> 5.5
				10
5] POOL / GLIDE AND RIF		CURRENT VELOCI	Tv Recreati	ion Potential
MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL WIDTH Check ONE (Or 2 & average)	CURRENT VELOCI Check ALL that apply		ry Contact
	OL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1] ☐ SLOW		ary Contact
	OL WIDTH = RIFFLE WIDTH [1]	☐ VERY FAST [1] ☐ INTERS	STITIAL [-1] (circle one and	d comment on back)
☑ 0.4-<0.7m [2] ☐ PO ☐ 0.2-<0.4m [1]	OL WIDTH < RIFFLE WIDTH [0]	☐ FAST [1] ☐ INTER! ☐ MODERATE [1] ☐ EDDIES	MITTENT [-2]	Pool /
☐ < 0.2m [0]		Indicate for reach - pools an	d riffles.	Current 6
Comments				Maximum 12
Indicate for functional	riffles: Rost areas must l	be large enough to suppo	ort a nonulation	12
of riffle-obligate speci		NE (Or 2 & average).		O RIFFLE [metric=0]
RIFFLE DEPTH		- ·	IFFLE / RUN EMBED	DEDNESS
	MAXIMUM > 50cm [2] ☐ STABL		☐ NONE [2]	
☐ BEST AREAS 5-10cm [1] ☐ M ☐ BEST AREAS < 5cm	MAXIMUM < 50cm [1] ☑ MOD. S	STABLE (e.g., Large Gravel) [1] BLE (e.g., Fine Gravel, Sand) [0]	☐ LOW [1] ☑ MODERATE [	nı Riffle /
[metric=0]	L UNSTA	DEE (c.g., I file Graver, Sanu) [0]	EXTENSIVE [	
Comments				Maximum 8
6] GRADIENT (2.73 ft/mi)	✓ VERY LOW - LOW [2-4]	<b>%POOL</b> : 30	%GLIDE: 10	Gradient
DRAINAGE AREA	MODERATE [6-10]	$\succ$	$\prec$	Maximum 4
( 2.04 <b>mi²</b> )	☐ HIGH - VERY HIGH [10-6]	<b>%RUN</b> : ( <sup>20</sup>	<b>)%RIFFLE:</b> ( 40 )	10

FI MEASUREMENTS culvert farm road bankfull max. depth floodprone x<sup>2</sup> width bankfull x depth x bankfull width entrench. ratio Comment RE: Reach consistency/Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc egacy Tree: max. depth W/D ratio x depth x width HARDENED/URBAN/DIRT&GRIME **LOGGING / IRRIGATION / COOLING** FALSE BANK / MANURE / LAGOON BMPs-CONSTRUCTION-SEDIMENT NATURAL / WETLAND / STAGNANT WWTP / CSO / NPDES / INDUSTRY WASH H<sub>2</sub>0 / TILE / H<sub>2</sub>0 TABLE ACID / MINE / QUARRY / FLOW ATMOSPHERE / DATA PAUCITY **BANK / EROSION / SURFACE** PARK / GOLF / LAWN / HOME **CONTAMINATED / LANDFILL** El ISSUES backwater Circle some & COMMENT FLOOD CONTROL / DRAINAGE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MOVING-BEDLOAD-STABLE MODIFIED / DIPPED OUT / NA SPRAY / SNAG / REMOVED IMPOUNDED / DESICCATED YOUNG-SUCCESSION-OLD RELOCATED / CUTOFFS DI MAINTENANCE **ARMOURED / SLUMPS** LEVEED / ONE SIDED ISLANDS / SCOURED Perennial flow regime. progue creek INVASIVE MACROPHYTES ☐ SLUDGE DEPOSITS ☐ CSOS/SSOS/OUTFALLS **BI AESTHETICS EXCESS TURBIDITY** CXCESS TURBIDITY
DISCOLORATION
FOAM / SCUM
OIL SHEEN
TRASH / LITTER
NUISANCE ODOR ☐ NUISANCE ALGAE POOL: □>100ft²□>3ft AREA DEPTH fallow field wetland OHWM = 5 TOB = 7 CJ RECREATION E CI ☐ SECCHI DEPTH☐ ☐ HIGH ☐ ☐ UP ☐ ☐ NORMAL ☐ ☐ LOW ☐ ☐ DRY ☐ ☐ DRY 1st -sample pass- 2nd --sample pass--CLARITY □ > 70 cm/ CTB STAGE □ 20-<40 cm Stream Drawing: AJ SAMPLED REACH □ 40-70 cm Check ALL that apply < 20 cm ✓ > 85%- OPEN

☐ 55%-<85%
</p> ☐ 10%-<30% ☐ <10%- CLOSED CANOPY 30%-<55% DISTANCE 0.15 Km 0.12 Km METHOD □ BOAT
□ WADE
□ L. LINE
□ OTHER 0.5 Km 0.2 Km OTHER meters 37 



QHEI Score:

48	

Fair

Stream & Location: Little McMahon Creek/Holloway-Knox 138kV Transmi	ssion Line RM:	Date:05   17   18
s-mdt-5/17/2018-02 Scorers Full I	Name & Affiliation: M. Tho	omayer, J.Freer; Jacobs
	/Long.: 40.0709, -80.9	255 Office verified location □
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present  BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLI  BLDR /SLABS [10]	☐ LIMESTONE [1] ☐ TILLS [1] ☐ WETLANDS [0] ☐ HARDPAN [0]	QUALITY  HEAVY [-2]  MODERATE [-1] Substrate
OVERHANGING VEGETATION [1] ROOTWADS [1]	ality or in small amounts of high lers in deep or fast water, large	Check ONE ( <i>Or 2 &amp; average</i> )  ☐ EXTENSIVE >75% [11]  ☐ MODERATE 25-75% [7]  ☐ SPARSE 5-<25% [3]
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average and average a	STABILITY  HIGH [3]  MODERATE [2]  LOW [1]	Channel Maximum 20
EROSION	DOD PLAIN QUALITY  SWAMP [3]  R OLD FIELD [2]  TIAL, PARK, NEW FIELD [1]  PASTURE [1]	CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] MINING / CONSTRUCTION [0] licate predominant land use(s) st 100m riparian.  Riparian Maximum 10  6.5
Check ONE (ONLY!)    > 1m [6]	I INTERMITTENT [- ATE [1] DEDDIES [1] e for reach - pools and riffles. enough to support a pop	Pool / Current Maximum 12
of riffle-obligate species:  RIFFLE DEPTH  BEST AREAS > 10cm [2]  BEST AREAS 5-10cm [1]  BEST AREAS < 5cm [metric=0]  Comments  Check ONE (Or 2 & a RIFFLE / RUN S  RIFFLE / RUN S  RIFFLE / RUN S  RIFFLE / RUN S  I MAXIMUM > 50cm [2]  MAXIMUM > 50cm [1]  MOD. STABLE (e.g., Find the comments)  Comments  GRADIENT (2.26 ft/mi) ✓ VERY LOW - LOW [2-4]	SUBSTRATE RIFFLE / I ble, Boulder) [2] [, Large Gravel) [1] [ ine Gravel, Sand) [0]	NO RIFFLE [metric=0]  RUN EMBEDDEDNESS  NONE [2]  LOW [1]  MODERATE [0]  EXTENSIVE [-1]  Maximum  8  IDE: 0  Gradient
DRAINAGE AREA	%RUN: (60 )%RIFI	Maurina   4

FI MEASUREMENTS T-Line ROW bankfull max. depth floodprone x<sup>2</sup> width bankfull x depth x bankfull width entrench. ratio Comment RE: Reach consistency/Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc. egacy Tree: max. depth W/D ratio x depth x width HARDENED/URBAN/DIRT&GRIME **LOGGING / IRRIGATION / COOLING** FALSE BANK / MANURE / LAGOON BMPs-CONSTRUCTION-SEDIMENT NATURAL / WETLAND / STAGNANT WWTP / CSO / NPDES / INDUSTRY WASH H<sub>2</sub>0 / TILE / H<sub>2</sub>0 TABLE ACID / MINE / QUARRY / FLOW ATMOSPHERE / DATA PAUCITY **BANK / EROSION / SURFACE** PARK / GOLF / LAWN / HOME **CONTAMINATED / LANDFILL** El ISSUES slope Circle some & COMMENT slope s-mdt-5/17/2018-0 FLOOD CONTROL / DRAINAGE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MOVING-BEDLOAD-STABLE MODIFIED / DIPPED OUT / NA IMPOUNDED / DESICCATED SPRAY / SNAG / REMOVED YOUNG-SUCCESSION-OLD RELOCATED / CUTOFFS DI MAINTENANCE **ARMOURED / SLUMPS** LEVEED / ONE SIDED ISLANDS / SCOURED **PEM** wetland INVASIVE MACROPHYTES ☐ SLUDGE DEPOSITS ☐ CSOs/SSOs/OUTFALLS **BI AESTHETICS EXCESS TURBIDITY** ☐ NUISANCE ALGAE POOL: □>100ft²□>3ft AREA DEPTH **NUISANCE ODOR** DISCOLORATION OHWM = 7', TOB = 10' TRASH / LITTER Perennial flow regime. **FOAM / SCUM** Recreation inferred. **OIL SHEEN** gravel road CJ RECREATION 15" MPD □ > 70 cm/ CTB □ SECCHI DEPTH□ E CI ☐ HIGH ☐ UP ☐ NORMAL ☐ LOW ☐ DRY ☐ DRY 1st -sample pass- 2nd --sample pass--CLARITY STAGE □ 20-<40 cm Stream Drawing: AJ SAMPLED REACH □ 40-70 cm Check ALL that apply < 20 cm T-Line ROW □ 10%-<30% □ <10%- CLOSED CANOPY 30%-<55% DISTANCE □ BOAT
□ WADE
□ L. LINE
□ OTHER 0.15 Km 0.12 Km METHOD 0.5 Km 0.2 Km OTHER meters 



### **ChicEPA**

## Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:

65.5	

Stream & Location: Holloway-Knox	138kV Transmission Line		RM: L	Date: 05   10   18
s-mdt-05/10/2018-03; McMahon Creek	Scorer	s Full Name & Affiliation		bertson; Jacobs
River Code:	_STORET #:	Lat./Long.: 40.008	86, -80.8647	Office verified location ✓
1] SUBSTRATE Check ONLY Two su	ibstrate TYPE BOXES;	,	k ONE ( <i>Or 2 &amp; average</i> )	
estimate % or note of BEST TYPES POOL RIFFLE	OTHER TYPES	. DIESTE ORIGIN		UALITY
BLDR /SLABS [10]	☐ ☐ HARDPAN [4]	LIMESTONE [1]	□ HE	AVY [-2]
□□ BOULDER [9] <u>10</u>	☐ ☐ DETRITUS [3]	TILLS [1]	SILL _	DERATE [-1] Substrate
✓ □ COBBLE [8]     10     60       □ GRAVEL [7]     15     30	☐ ☐ MUCK [2]  ☑ ☐ SILT [2]  20		ПЕРЕ	RMAL [0] EE [1] 17
SAND [6] 55	ARTIFICIAL [0]	SANDSTONE [0	DEN EXT	TENSIVE [-2]
BEDROCK [5]	(Score natural substra	ates; ignore RIP/RAP [0] nt-sources) LACUSTURINE	DEON DEXT	DERATE [-1] Maximum
	or more [2] sludge from poir or less [0]	SHALE [-1]	UNOI □ NOI	RMAL [U] 20 NE [1]
Comments	o. 1000 [0]	☐ COAL FINES [-2	2]	
	01.0.0.1			
	oderate amounts, but not of h	ighest quality or in small amour	nts of highest	AMOUNT
quality; 3-Highest quality in moderate or diameter log that is stable, well develope	greater amounts (e.g., very la	rge boulders in deep or fast wa r or deep well-defined function		NE ( <i>Or 2 &amp; average</i> ) <b>ISIVE &gt;75% [11]</b>
UNDERCUT BANKS [1]	1 POOLS > 70cm [2	OXBOWS, BACKWA	_	RATE 25-75% [7]
OVERHANGING VEGETATION [1		AQUATIC MACROPH		SE 5-<25% [3]
SHALLOWS (IN SLOW WATER) [ ROOTMATS [1]	1] BOULDERS [1]	LOGS OR WOODY D	DERKIS [1]   NEAKI	LY ABSENT <5% [1]
Comments	_			Cover Maximum 5
				20
3] CHANNEL MORPHOLOGY Ch		r 2 & average)		
SINUOSITY DEVELOPMEN				
☐ HIGH [4] ☐ EXCELLENT [7] ☐ MODERATE [3] ☐ GOOD [5]	]	☐ HIGH [3] ☑ MODERATE [	(2)	
	RECOVERING [3]	✓ MODERATE [	[2]	
□ NONE [1] □ POOR [1]	☐ RECENT OR NO REC	COVERY [1]		Channel 14
Comments				Maximum 14
4] BANK EROSION AND RIPAR	IAN ZONE Check ONE in a	each category for <b>FACH RANK</b>	(Or 2 per hank & average	(9)
	ARIAN WIDTH	FLOOD PLAIN QUA		<del>6</del> )
LR EROSION WIDE	> 50m [4]	OREST, SWAMP [3]	CONSER	VATION TILLAGE [1]
	ERATE 10-50m [3] 🛮 🗘 S	SHRUB OR OLD FIELD [2]		OR INDUSTRIAL [0]
	ROW 5-10m [2] $\square$ ROW 5-10m $\square$ R	RESIDENTIAL, PARK, NEW FIE ENCED PASTURE [1]	LD [1] ☐ ☐ MINING / ( Indicate predomin	CONSTRUCTION [0]
		PEN PASTURE, ROWCROP [	past 100m riparia	an. Riparian
Comments				Maximum 8.5
				10
5] POOL / GLIDE AND RIFFLE / MAXIMUM DEPTH CH/	<i>RUN QUALITY</i> Annel Width	CURRENT VELOCIT	Recre	ation Potential
_	ONE (Or 2 & average)	Check ALL that apply	· •	nary Contact
	OTH > RIFFLE WIDTH [2]	TORRENTIAL [-1] SLOW [	1] Seco	ndary Contact
	OTH = RIFFLE WIDTH [1] DTH < RIFFLE WIDTH [0]	VERY FAST [1] ☐ INTERS FAST [1] ☐ INTERM	TITIAL [-1] (circle one	e and comment on back)
0.2-<0.4m [1]		MODERATE [1] ☐ EDDIES	[1]	Pool /
□ < 0.2m [0]		Indicate for reach - pools and	riffles.	Current Maximum 5
Comments High flow at time of surve	∌V			12
Indicate for functional riffle			rt a population	NO PIEELE [motric=0]
of riffle-obligate species: RIFFLE DEPTH RUN		(Or 2 & average).	_	NO RIFFLE [metric=0]
	JM > 50cm [2] ☑ STABLE (6		FFLE / RUN EMBE □ NONE [2]	בטוועםט
☐ BEST AREAS 5-10cm [1] ☐ MAXIMU	JM < 50cm [1] ☐ MOD. STA	BLE (e.g., Large Gravel) [1]	✓ LOW [1]	5.00
☐ BEST AREAS < 5cm [metric=0]	UNSTABL	E (e.g., Fine Gravel, Sand) [0]	MODERAT	E [0] Riffle / 6
Comments			⊔ EXTENSIV	E [-1] Run 6
	ERY LOW - LOW [2-4]	%POOL: 20	) %GLIDE: (20	Gradient 40
	IODERATE [6-10]	%RUN: (40	)%RIFFLE: 20	Maximum 10
( 54.3 mi²) ∐ H	IGH - VERY HIGH [10-6]	MIUN. ( TO	//OIXII I <b>LL.</b> ( 20	10

FI MEASUREMENTS bankfull max. depth floodprone x<sup>2</sup> width bankfull x depth x bankfull width entrench. ratio Comment RE: Reach consistency/Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc Legacy Tree: max. depth W/D ratio x width x depth J-Line ROW HARDENED/URBAN/DIRT&GRIME **LOGGING / IRRIGATION / COOLING** FALSE BANK / MANURE / LAGOON BMPs-CONSTRUCTION-SEDIMENT NATURAL / WETLAND / STAGNANT WWTP / CSO / NPDES / INDUSTRY WASH H<sub>2</sub>0 / TILE / H<sub>2</sub>0 TABLE **ACID / MINE / QUARRY / FLOW** ATMOSPHERE / DATA PAUCITY **BANK / EROSION / SURFACE** PARK / GOLF / LAWN / HOME CONTAMINATED / LANDFILL El ISSUES Circle some & COMMENT FLOOD CONTROL / DRAINAGE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA MOVING-BEDLOAD-STABLE MODIFIED / DIPPED OUT / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED IMPOUNDED / DESICCATED RELOCATED / CUTOFFS DI MAINTENANCE **ARMOURED / SLUMPS** LEVEED / ONE SIDED ISLANDS / SCOURED PEM wetland 16" mpd, OHWM = 66', TOB = 70' INVASIVE MACROPHYTES ☐ SLUDGE DEPOSITS ☐ CSOS/SSOS/OUTFALLS **BI AESTHETICS EXCESS TURBIDITY** CXCESS TURBIDITY
DISCOLORATION
FOAM / SCUM
OIL SHEEN
TRASH / LITTER
NUISANCE ODOR POOL: □>100ft²□>3ft ☐ NUISANCE ALGAE AREA DEPTH Perennial flow regime. Recreation inferred road CJ RECREATION T-Line ROW □ > 70 cm/ CTB □ SECCHI DEPTH□ E --sample pass-- 2nd CI ☐ HIGH ☐ UP ☐ NORMAL ☐ ☐ LOW ☐ ☐ DRY ☐ ☐ DRY 1st -sample pass- 2nd CLARITY STAGE □ 20-<40 cm Stream Drawing: AJ SAMPLED REACH □ 40-70 cm Check ALL that apply < 20 cm ☐ 10%-<30% ☐ <10%- CLOSED ✓ > 85%- OPEN

☐ 55%-<85%
</p> CANOPY 30%-<55% DISTANCE □ BOAT
□ WADE
□ L. LINE
□ OTHER 0.15 Km 0.12 Km METHOD 0.5 Km 0.2 Km OTHER meters 



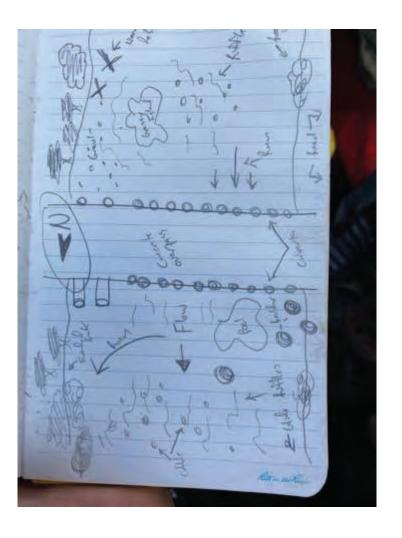
QHEI Score:

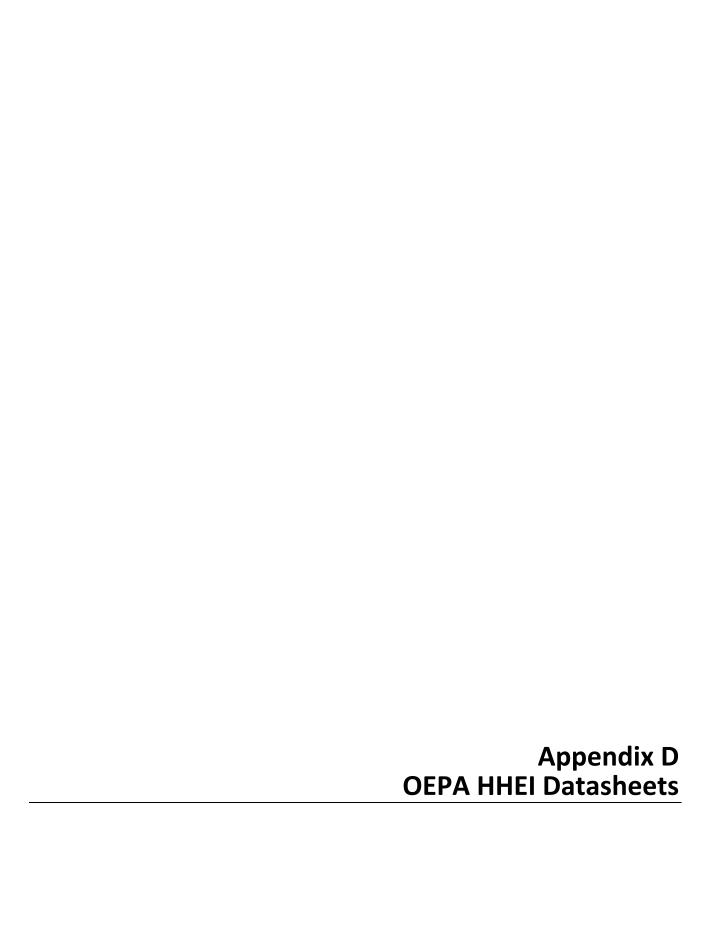
	72	
-	13	
•		

Stream & Location:	S-MJA-050420-	05, Lower McMahon Cr	eek		. <i>RM:</i> 11.17	<b>Date:</b> 05	/04/2020
Matt Abbott				me & Affiliation:	Jacobs Engine		
River Code: 05030100		STORET #:	<b>Lat./ L</b> (NAD 83 - c	Long.: 40.00854	<b>/</b> -80.868 <sup>2</sup>	19	Office verified location
1] SUBSTRATE Cheestir  BEST TYPES  BEST TYPES  BEDR /SLABS [10  BOULDER [9]  GRAVEL [7]  SAND [6]  BEDROCK [5]  NUMBER OF BEST  Comments	POOL RIFFLE  20 10 20 50 20 30 10 10  TYPES: 24	rery type present OTHER TYPES HARDPAN [4] DETRITUS [3] MUCK [2] SILT [2] ARTIFICIAL [0] (Score natural s	30 0	ORIGIN  LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0]	SILT [	erage) QUALITY QUALITY HEAVY [-2] MODERATE NORMAL [0] FREE [1] EXTENSIVE MODERATE NORMAL [0] NONE [1]	[-1] Substrate
quality; 3-Highest quality diameter log that is stable UNDERCUT BANI OVERHANGING VERHANGING VERHANG	quality; 2-Mo in moderate or g e, well developed KS [1] 'EGETATION [1]	derate amounts, but no reater amounts (e.g., v rootwad in deep / fast POOLS > 700 ROOTWADS	of highest qualities of highest qualities of highest qualities water, or deep,	tv or in small amounts	of highest, large Ch pools. ERS [1] Ch TES [		& average) 5% [11] -75% [7] % [3]
HIGH [4]       □         MODERATE [3]       □         LOW [2]       □	HOLOGY Che VELOPMENT EXCELLENT [7] GOOD [5] FAIR [3] POOR [1]		ATION  [1] [3]	STABILITY  HIGH [3]  MODERATE [2]  LOW [1]			nannel ximum 20
4] BANK EROSION River right looking downstr EROSION NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE	eam RIPA RIPA WIDE:	RIAN WIDTH  50m [4]  RATE 10-50m [3]  DW 5-10m [2]  VARROW < 5m [1]	FLOG  RESIDENTIA  RESIDENTIA  FENCED PA	OD PLAIN QUALI NAMP [3] OLD FIELD [2] AL. PARK, NEW FIELD	TY CONDUCTOR	NSERVATION T BAN OR INDUS IING / CONSTR edominant land riparian. Rij	STRIAL [0] UCTION [0]
5] POOL / GLIDE AI MAXIMUM DEPTH Check ONE (ONLY!)	CHA Check O POOL WIDT	RUN QUALITY NNEL WIDTH NE (Or 2 & average) TH > RIFFLE WIDTH [2] TH = RIFFLE WIDTH [1] TH < RIFFLE WIDTH [0]	Ch  TORRENT VERY FAS FAST [1] MODERAT	RENT VELOCITY eck ALL that apply IAL [-1] SLOW [1] IT [1] INTERSTIT INTERMIT FOR TRACE FOR TRACE  RENT STATE FOR TRACE  RENT VELOCITY  FOR TRACE FOR TRACE  RENT VELOCITY  STATE FOR TRACE F	FIAL [-1] FENT [-2]	C	ontact
Indicate for fund of riffle-obligate RIFFLE DEPTH  BEST AREAS > 10cm   BEST AREAS 5-10cm   BEST AREAS < 5cm   [metric=	e species: RUN I [2]	DEPTH RIFF M > 50cm [2]	ONE (Or 2 & ave FLE / RUN SU BLE (e.g., Cobbl . STABLE (e.g.,	rage). JBSTRATE RIFF e, Boulder) [2]	FLE / RUN E	□NO RIF	FLE [metric=0]
6] GRADIENT ( 19 DRAINAGE ARE ( 54.6	A MC	RY LOW - LOW [2-4] DDERATE [6-10] GH - VERY HIGH [10-6		%POOL: 15 %RUN: 30	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		adient 8

ons, etc.	FJ MEASUREMENTS  X width 70 X depth max. depth X bankfull width 85 bankfull X depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Legacy Tree:
cess directi	FJ MEASURE  X width 70 X depth max. depth 3 X bankfull widt bankfull X dept W/D ratio bankfull max. of floodprone x <sup>2</sup> v entrench. ratio
Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc. Perennial stream, reach consistent with stream as a whole. Recreation inferred.	EJISSUES  WWYTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPs - CONSTRUCTION - SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H20 / TILE / H20 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY
<i>ion/</i> Observed - Inferred, O <i>ther/</i> n inferred.	Circle some & COMMENT
s reach typical of steam?, <i>Recrea</i> with stream as a whole. Recreatio	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 / SCOURED IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE
Comment RE: Reach consistency/Is reach typical of steam?, Recreation/Obsel Perennial stream, reach consistent with stream as a whole. Recreation inferred.	ARITY  BJAESTHETICS  ple pass 2nd   NUISANCE ALGAE  cm
AJ SAMPLED REACH Check ALL that apply METHOD STAGE SWADE CHICH CHOP CHICH CHOP	CL. 1stsam 1stsam 20 < 20 < 20 < 44 < 40 < 70 < 70 < 70 < 70 < 70 < 7
AJ SAMPLI Check / METHOD BOAT WADE C. UNE C. LINE COTHER DISTANCE	0.5 Km 0.2 Km 0.15 Km 0.15 Km 0.12 Km C OTHER C OTHER C ANOPY C > 85%-0PEN C 55%-<85% 0 30%-<55% 0 10%-<30% 0 <10%-CLOSE

# Stream Drawing:





### ChicEPA Primary Headwater Habitat Evaluation Form

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

25
25

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-051520	18-01
SITE NUMBER NH-01 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 336 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER BAO, TMQ COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING riparian cut and channelized	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 8). Final metric score is sum of boxes A & B.  TYPE  SILT [3 pt]  SILT [3 pt]  LEAF PACK/WOODY DEBRIS [3 pts]  O%  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Substrate Percentage Check  100%  (B)	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
A 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]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS Ohwm 1ft AVERAGE BANKFULL WIDTH Feet 3.00	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m Mature Forest, Wetland Conservation Tillage    Moderate 5-10m   Field   Urban or Industrial    Narrow <5m   Residential, Park, New Field   Open Pasture, Row Crown Comments	pp
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  COMMENTS phemeral	) <u> </u>
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  0.5  1.0  2.0  3.0  3.0  >3.0  >3.0	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must	t Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream
	HE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Flushing	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison	Township / City: Athens
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation	. 05/14/18 Quantity: 0.36
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open):	100%
Were samples collected for water chemistry? (Y/N): (No	ote lab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	If not, please explain:
Additional comments/description of pollution impacts:	
Additional comments/description of politicism impacts.	
ID number. Include appropriate field Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamand	oucher collections optional. NOTE: all voucher samples must be labeled with the sit ld data sheets from the Primary Headwater Habitat Assessment Manual)  lers Observed? (Y/N)
Include important landmarks and other features of interesting	TION OF STREAM REACH (This <u>must</u> be completed): est for site evaluation and a narrative description of the stream's location
FLOW  hh-bao-5/15/2018-01  T-Line C Inter	Wetland  Old field  T-Li he ROW Edge
. 2.110 0	



### **ChieFP** Primary Headwater Habitat Evaluation Form

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

37
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	18-02
SITE NUMBER NH-02 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 352 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER BAO, TMQ COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Culverted and riparian cleared	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] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  Tatal of Parantages of the substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 8). Final metric score is sum of boxes A & B.  PERCENT TYPE SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] O% CLAY or HARDPAN [0 pt] O% ARTIFICIAL [3 pts] O% SAND (<2 mm) [6 pts]  Tatal of Parantages of the state of the substrate present. Check ONLY two predominant substrate TYPE boxes Type percent. Check ONLY two predominant substrate TYPE boxes Type percent. Check ONLY two predominant substrate TYPE boxes Type percent. Check ONLY two predominant substrate TYPE boxes Type percent. Check ONLY two predominant substrate TYPE boxes Type percent. Check ONLY two predominant substrate TYPE boxes percent. Check ONLY two predominant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  Type percent	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10.00% (Score of two most predominate substrate types: 12 Substrate Percentage 100% TOTAL NUMBER OF SUBSTRATE TYPES: 5	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IWIAX = 30
> 22.5 - 30 cm [30 pts]       < 5 cm [5 pts]	0
COMMENTS MAXIMUM POOL DEPTH Inches 0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 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] \( \leq 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm 2ft  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30 20
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm 2ft  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row Cru  None  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  None water (Ephemeral)	Width Max=30 20

ADDITIONAL STREAM INFORMATION (This Information Must Als	so be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	
EWH Name:	Distance from Evaluated Stream
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Flushing	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Harrison Town	nship / City:Athens
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	<b>05/14/18</b> Quantity: <b>0.36</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 10	0%
Were samples collected for water chemistry? (Y/N): (Note I	ab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If no	ot, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field da Fish Observed? (Y/N)  N  Voucher? (Y/N)  N  Salamanders	ner collections optional. NOTE: all voucher samples must be labeled with the site at a sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N) N Voucher?
	N OF STREAM REACH (This must be completed): for site evaluation and a narrative description of the stream's location  pasture  wooded
	hh-bao5/15/2018-02  T-Li he ROW Edge  I Form Page - 2
October 24, 2002 Revision	Save as pdf Reset Form

Outcan N	1 00
Chief Primary Headwater Habitat Evaluation Form	
HHEI Score (sum of metrics 1, 2, 3):	37
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-0516201	8-03
SITE NUMBER NH-03 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 343 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER BAO, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	NEDV.
MODIFICATIONS	JVERY
starts as base of drainage area along berm, flows into wooded area outside ROW	
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.	HHEI Metric
TYPE         PERCENT         TYPE         PERCENT           □ □ □ BLDR SLABS [16 pts]         0%         □ □ ✓ SILT [3 pt]         35%	Points
BOULDER (>256 mm) [16 pts] 10% LEAF PACK/WOODY DEBRIS [3 pts] 0%	
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrate
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	17
SAND (<2 mm) [6 pts] 10% ARTIFICIAL [3 pts] 0%	''
Total of Percentages of 25.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check	ATD
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS tob:2 ohwm:1 AVERAGE BANKFULL WIDTH Feet : 2.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	

		RIPARIAN ZONE AND FLO	ODPLAIN QUAL	ITY S≵NOTE: Ri	ver Left (L) and Right (R	) as look	king downstream ☆
		RIPARIAN WIDTH	FLOODP	LAIN QUALITY			
	L R	(Per Bank)	<u>L R</u>	(Most Predominant	per Bank) <u>L</u> F	₹	
		Wide >10m		Mature Forest, Wetl	and $\Box$	<b>]</b> c	onservation Tillage
		Moderate 5-10m		Immature Forest, SI Field	nrub or Old	J U	rban or Industrial
	1	Narrow <5m		Residential, Park, N	ew Field	」 °	pen Pasture, Row Crop
		None	<b>✓ ✓</b>	Fenced Pasture		_ M	lining or Construction
		COMMENTS connects to	s-tmq-051620	18-02 downstrean	n just before foreste	d area	
	<b>✓</b>	FLOW REGIME (At Time of Stream Flowing Subsurface flow with isolated COMMENTS_ephemeral	, ,			•	, no flow (Intermittent) meral)
	<b>✓</b>	<b>SINUOSITY</b> (Number of ben None 0.5	ds per 61 m (200 1.0 1.5	) ft) of channel) (Ch	eck ONLY one box): 2.0 2.5		3.0 >3
FI	STRE at (0.5 ft/	AM GRADIENT ESTIMATE	e Mode	rate (2 ft/100 ft)	Moderate to Severe		Severe (10 ft/100 ft)

QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Distance from Evaluated Stream	_
CWH Name: Distance from Evaluated Stream	_
EWH Name: Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Flushing NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Belmont Township / City: Wheeling	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/15/18 Quantity: 0.02	
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
is the sampling reach representative of the stream (1/14) in not, please explain.	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Vou	the sit
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):	
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's locat	ion
N T-Line ROV Edge	
s-tmq-05162018-02	
FLOW shrub cover	
Sinus Gover	
Slope T-Line C nterline	



SITE NAME/LOCATION   FirstEnergy Holloway-Knox 138kV Transmission Line   Field ID: s-bao-051620	018-02
SITE NUMBER NH-04 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 77 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER BAO, TMQ COMMENTS intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:  starts at palustrine emergent wetland, flows into wooded area outside ROW	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]  BEDROCK [16 pt]  D'A  D'B  D'B  D'B  D'B  D'B  D'B  D'B	Substrat Max = 40
COBBLE (65-256 mm) [12 pts]	IVIAX = 41
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%  0%	15
Total of Percentages of Cook (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	^+5
<ol> <li>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):</li> </ol>	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
	Bankful
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]	Bankful Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  AVERAGE BANKFULL WIDTH Feet : 3.00  This information must also be completed	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Wide >10m Mature Forest, Wetland    Moderate 5-10m   Moderate 5-10m   Moderate Forest, Shrub or Old   Urban or Industrial Field   Open Pasture Pow Open Pasture	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY %NOTE: River Left (L) and Right (R) as looking downstream % RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  Wide >10 m  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) Wide >10m Wide >10m Mature Forest, Wetland    Moderate 5-10m   Moderate 5-10m   Moderate Forest, Shrub or Old   Urban or Industrial Field   Open Pasture Pow Open Pasture	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  *NOTE: River Left (L) and Right (R) as looking downstream*  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m  Wide >10 m  Wide >10 m  FloodPLAIN QUALITY  Mature Forest, Wetland  Wide >10 m  Immature Forest, Wetland  Wide >10 m  Narrow <5 m  Residential, Park, New Field  None  COMMENTS downstream has wide riparian width within forested area	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream notes and the second process. The second process is a second process is a second process. The second process is a second process is a second process is a second process. The second process is a second process is a second process is a second process. The second process is a second process. The second process is a second proc	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  ELOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Wide >10 m  Moderate 5-10 m  Narrow <5 m  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  None  COMMENTS downstream has wide riparian width within forested area  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH  L R (Per Bank) Wide >10m Wide >10m Wide >10m Wide >10m Residential, Park, New Field  Narrow <5m Residential, Park, New Field  None COMMENTS downstream has wide riparian width within forested area  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  L R (Per Bank)  Wide > 10 m  Wide > 10 m  Moderate 5-10 m  Residential, Park, New Field  Narrow < 5 m  Residential, Park, New Field  None  COMMENTS downstream has wide riparian width within forested area  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0  Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  **NOTE: River Left (L) and Right (R) as looking downstream **X  RIPARIAN WIDTH  L R (Per Bank)  Wide >10 m  Wide >10 m  Wide >10 m  Narrow <5 m  None  COMMENTS downstream has wide riparian width within forested area  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  3.0  3.0  3.0  3.0  3.0  3	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob:3 ohwm:2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  L R (Per Bank)  Wide > 10 m  Wide > 10 m  Moderate 5-10 m  Residential, Park, New Field  Narrow < 5 m  Residential, Park, New Field  None  COMMENTS downstream has wide riparian width within forested area  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0  Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0	Width Max=30  5

ADDITIONAL STREAM INFORMATION (This Information Must A	ulso be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: CWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Flushing	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont To	wnship / City:Wheeling
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	<b>05/15/18</b> Quantity: <b>0.02</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 7	70%
Were samples collected for water chemistry? (Y/N): Note	lab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If r	not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field of Fish Observed? (Y/N) N Voucher? (Y/N) N Salamander	cher collections optional. NOTE: all voucher samples must be labeled with the sit data sheets from the Primary Headwater Habitat Assessment Manual) s Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION	ON OF STREAM REACH (This <u>must</u> be completed):
	for site evaluation and a narrative description of the stream's location
T-Line ROV Edge  FLOW  PEM wetland	M M M S S S S S S S S S S S S S S S S S
Slope T-Line C interline	T-Line ROW Edge

### ChicEPA Primary Headwater Habitat Evaluation Form

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

41
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SITE NUMBER NH-05 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	18-01
SITE NUMBER NH-05 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 403 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER BAO, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Upstream filled in from farm pasture	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  PERCENT  TYPE  PERCENT	HHEI   Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 30%	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 40% MUCK [0 pts] 0%	16
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  30.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 3	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (< 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS tob:6 ohwm:3 AVERAGE BANKFULL WIDTH Feet : 6.00	20
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\primex\nOTE: River Left (L) and Right (R) as looking downstream \$\primex\$	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage	
L R (Per Bank) Wide >10m Moderate 5-10m  L R (Most Predominant per Bank) Mature Forest, Wetland D Conservation Tillage Immature Forest, Shrub or Old Field  Urban or Industrial	ND.
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field  Narrow <5m  L R (Most Predominant per Bank) L R Conservation Tillage Urban or Industrial Open Pasture, Row Cri	qı
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Marrow <5m Narrow <5m None  L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage L R (Most Predominant per Bank) L R (Most	qc
L R (Per Bank) Wide >10m Mature Forest, Wetland Immature Forest, Shrub or Old Field  Narrow <5m Residential, Park, New Field  None COMMENTS downstream wide riparian width and forested  L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage Urban or Industrial Open Pasture, Row Cre Mining or Construction	- qc
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Marrow <5m Narrow <5m None  L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage L R (Most Predominant per Bank) L R (Most	-
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crow Mining or Construction COMMENTS downstream wide riparian width and forested  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial)  L R (Most Predominant per Bank) L R (Most Predominant	-
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crow Mining or Construction COMMENTS downstream wide riparian width and forested  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral	-
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Moderate 5-10m Residential, Park, New Field Open Pasture, Row Crow Mining or Construction COMMENTS downstream wide riparian width and forested  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial)  L R (Most Predominant per Bank) L R (Most Predominant	-
L R (Per Bank) Wide >10m Mature Forest, Wetland Dry channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)  L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Open Pasture, Row Cn Penced Pasture Mining or Construction COMMENTS downstream wide riparian width and forested  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	-
L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Mod	- ) <u> </u>
L R (Most Predominant per Bank) Wide >10m Mature Forest, Wetland Urban or Industrial Immature Forest, Shrub or Old Immature Forest, Shrub or Old Urban or Industrial Urban or Industrial Open Pasture, Row Crown Field  None COMMENTS downstream wide riparian width and forested  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None  1.0 2.0 3.0 2.5 3.0 3.0 2.5	- ) <u> </u>

ADDITIONAL STREAM INFORMATION (This Information Must Als	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	_ Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream _
_	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Flushing	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Town	ship / City:Wheeling
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N Date of last precipitation:	<b>05/14/18</b> Quantity: <b>0.36</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note la	b sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not	, please explain:
(, <u>)</u>	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Vouch	er collections optional. NOTE: all voucher samples must be labeled with the sit
· /	a sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders (	Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aqua	tic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
	r site evaluation and a narrative description of the stream's location
and said important land and said is to the said is	
bedrock, steep	slope
T-Line ROW Edge	//
/ V Y Y Y	
FLOW -	
FLOW	7+3
000	<b>^</b>
$\mathcal{G} \mathcal{M}$	isolated pools
	7
	T-Li te ROW Edge
Slope T-Line C	
-	Form Page - 2



NILL OC OFFICIAL OCCUPA	18-01
SITE NUMBER NIT-UO RIVER BASIN USUSU1 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 149 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/18/18 SCORER TMQ, JF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:  upstream braided low throughout wetland, loses flow until donstream	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.	HHEI
TYPE  PERCENT  TYPE  PERCENT  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	15
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10.00% (A) Substrate Percentage Check 100%	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX = 3
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
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]	Bankful Width
	widii
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS tob: 3 ohwm:1.5  AVERAGE BANKFULL WIDTH Feet : 3.00	
	Max=30
COMMENTS tob: 3 ohwm:1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Max=30
COMMENTS tob: 3 ohwm:1.5 AVERAGE BANKFULL WIDTH Feet : 3.00	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  AVERAGE BANKFULL WIDTH  Feet  3.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  LR (Per Bank)  Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Immature Forest Shrub or Old  AVERAGE BANKFULL WIDTH Feet  3.00  3.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  Feet  3.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Urban or Industrial  Field	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  PLOODPLAIN QUALITY  Note: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row Crossing Completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Open Pasture, Row Crossing Completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Field  Open Pasture, Row Crossing Completed  RIPARIAN WIDTH  Field  Open Pasture, Row Crossing Completed  RIPARIAN WIDTH  Floodplain Quality  And Right (R) as looking downstream And Conservation Tillage  Urban or Industrial  Open Pasture, Row Crossing Completed	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  Feet  3.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Urban or Industrial  Field	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS mining fallow field  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	<b>5</b>
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{RIPARIAN WIDTH} FLOODPLAIN QUALITY}  L R (Per Bank) L R (Most Predominant per Bank) L R (Per Bank) Urban or Industrial Field Urban or Industrial Field Urban or Industrial Field Open Pasture, Row Crown None Residential, Park, New Field Open Pasture, Row Crown None Residential Pasture Forest, Shrub or Old Mining or Construction COMMENTS mining fallow field Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)	<b>5</b>
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  □ NOTE: River Left (L) and Right (R) as looking downstream □  RIPARIAN WIDTH  □ (Per Bank)  □ Wide >10m  □ Mature Forest, Wetland  □ Moderate 5-10m  □ Mature Forest, Shrub or Old  □ Urban or Industrial  □ Narrow <5m  □ Residential, Park, New Field  □ Open Pasture, Row Cro  □ None  □ Residential, Park, New Field  □ Open Pasture, Row Cro  □ None  □ Residential, Park, New Field  □ Open Pasture, Row Cro  None  □ None  □ Fenced Pasture  □ Mining or Construction  COMMENTS mining fallow field  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  □ COMMENTS ephemeral, just rained	<b>5</b>
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	<b>5</b>
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Per Bank  Pried  Open Pasture, Row Cro  None  COMMENTS mining fallow field  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral, just rained  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	<b>5</b>

ADDITIONAL STREAM INFORMATION (This Information Must Also be Complete	<u>ed):</u>
QHEI PERFORMED? - Yes No QHEI Score (If Yes	, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: CWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERS	SHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Harrisville NRCS Soil M	1 Ap Page: NRCS Soil Map Stream Order
County: Belmont Township / City: W	
MISCELLANEOUS  Base Flow Conditions? (Y/N):_Y  Date of last precipitation: 05/15/18	Quantity: 0.04
Base Flow Conditions? (Y/N): Date of last precipitation: U5/15/18  Photograph Information: 3 photos	Quantity: U.U4
	<u> </u>
Elevated Turbidity? (Y/N): Canopy (% open): 50%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. o	r id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.L	J.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain	n:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREA	M REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation	on and a narrative description of the stream's location
T-Line ROV Edge	CUNVERTS ON
FLOW WET MA	
Slope T-Line C Interline	T-Li he ROW Edge

# **ChieFP** Primary Headwater Habitat Evaluation Form

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

24
<b>4</b> 7

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-051720	18-01
SITE NUMBER NH-07 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 41 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER BAO, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Upstream filled in from mining	COVERY
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  PERCENT  TYPE  PERCENT	HHEI
BLDR SLABS [16 pts] 0% SILT [3 pt] 90%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]	14
SAND (<2 mm) [6 pts] 0% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 0.00% (A) Substrate Percentage Check 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 2	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 4.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS tob:1.5 ohwm:1 AVERAGE BANKFULL WIDTH Feet 1.50	5
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH 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	
Narrow <5m ✓ Residential, Park, New Field ☐ Open Pasture, Row Cr	op
✓ None ☐ Fenced Pasture ☐ Mining or Construction	
COMMENTS mining fallow field	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Subsurface flow with isolated pools (Interstitial) Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral)	t)
COMMENTS_ephemeral, jut rained	1
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 0.5 1.5 2.5 >3	
<u> </u>	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/	100 (4)
	100 11)

ADDITIONAL STREAM INFORMATION (This Information Must Also I	be Completed):
QHEI PERFORMED? - Yes / No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	NRCS Soil Map Stream OrderNRCS Soil Map Stream Order
County: Belmont Townsh	ip / City:Wheeling
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_N Date of last precipitation:_	<b>05/15/18</b> Quantity: <b>0.04</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
N.	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, p	olease explain:
Additional comments/description of pollution impacts:	
Additional comments/description of politicion impacts.	
ID number. Include appropriate field data s Fish Observed? (Y/N) N Salamanders Ob	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual) served? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)
	OF STREAM REACH (This must be completed): site evaluation and a narrative description of the stream's location
include important landmarks and other readures of interest for s	site evaluation and a narrative description of the stream's location
T-Line ROV Edge	
_	W
FLOW	, A
<b>^</b>	
Slope T-Line C nterline	T-Li ne ROW Edge



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-0517201	8-03
SITE NUMBER NH-09 RIVER BASIN 050301060301 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 163 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER BAO, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERING RECOVERIN	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25  TOTAL NUMBER OF SUBSTRATE TYPES: 4	HHEI Metric Points Substrate Max = 40 29
<ul> <li>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):</li> </ul>	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 3	
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]	Bankfull Width Max=30
COMMENTS ohwm: 3 ToB: 6 AVERAGE BANKFULL WIDTH Feet : 6.00	20
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♣  RIPARIAN WIDTH 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  Narrow <5m Residential, Park, New Field Open Pasture, Row Crown None Fenced Pasture Mining or Construction  COMMENTS	р
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None 1.0 2.0 3.0	
None 2.0 3.0 3.0 5 1.5 2.5	

ADDITIONAL STREAM INFORMATION (This Information Must Also be	e Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name:	_ Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream
	IRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Harrisville	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Townshi	p / City:_ Wheeling
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	05/15/18 Quantity: 0.04
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab s	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
<b>v</b>	lease explain:
is the sampling reach representative of the stream (1714)	ево скринт.
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data s Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders Observed?	collections optional. NOTE: all voucher samples must be labeled with the site theets from the Primary Headwater Habitat Assessment Manual)  served? (Y/N) N Voucher? (Y/N) N Vou
	OF STREAM REACH (This <u>must</u> be completed):  site evaluation and a natrative description of the stream's location
THE STATE OF THE S	
FLOW	Stream NH
- Cleured	RDW.
PHWH Fo	rm Page - 2

**Reset Form** 

Save as pdf

October 24, 2002 Revision

### **ChieFP** Primary Headwater Habitat Evaluation Form

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

_	<b>!</b> 5

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bao-0517201	8-04
SITE NUMBER NH-10 RIVER BASIN 050301060302 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 1,400 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER BAO, TMQ COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ctions
STREAM CHANNEL	VERY
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.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts]	i Oiiit3
BEDROCK [16 pt]  0%  FINE DETRITUS [3 pts]	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	IVIAX = 40
GRAVEL (2-64 mm) [9 pts]  25%  MUCK [0 pts]  0%  ARTIFICIAL [3 pts]  0%	15
SAND (<2 mm) [6 pts]	
Total of Percentages of 5.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH Inches 5	25
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS OHWM: 2.5, TOB: 3  AVERAGE BANKFULL WIDTH Feet 3.00	5
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH 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	
Field — Onen Pasture Row Cror	)
Narrow <5m Residential, Park, New Field J	•
None Fenced Pasture Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing  Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated pools (Interstitial)  COMMENTS_intermittent  Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)		
WWH Name: Distance from Evaluated Stream		
CWH Name: Distance from Evaluated Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION		
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order		
County: Belmont Township / City: Wheeling		
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/15/18 Quantity: 0.04		
Photograph Information: 3 photos		
N Acces		
Elevated Talbiany: (1774).		
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:		
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) PH (S.U.) Conductivity (µmhos/cm)		
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 optional. NOTE: all voucher samples must be labeled with the site		
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)		
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc		
Comments Regarding Biology:		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location		
FLOW		
Pa sturic / Intokly		
igl		

# **ChieFP** Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-0517201	8-05
SITE NUMBER NH-11 RIVER BASIN 050301060302 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 280 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER BAO, TMQ COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECOVERING RECENT OR NO RECOVERING	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ппеі
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	HHEI Metric
□ BLDR SLABS [16 pts] □ ✓ SILT [3 pt] 55%	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] 30% MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0%	15
Ortito (*2 mm) [o pto]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	45
	15
COMMENTS MAXIMUM POOL DEPTH Inches 5	
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]	Bankfull Width
≥ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS OHWM: 1 , TOB: 2 AVERAGE BANKFULL WIDTH Feet 2.00	5
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH 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	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	р
None Fenced Pasture Mining or Construction	
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing  Moist Channel, isolated pools, no flow (Intermittent)  Subsurface flow with isolated pools (Interstitial)  Dry channel, no water (Ephemeral)	
COMMENTS ephemeral	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 4 3.0 0.5 1.5 2.5 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate  Moderate (2 ft/100 ft) Moderate to Severe  Severe (10 ft/10	0 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  St Clairsville
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/15/18 Quantity: 0.04
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 45%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher?
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Bedrock
FLOW shrub cover / tree line





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SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-05212	2018-04
SITE NUMBER NH-13 RIVER BASIN 050301060303 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 462 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/21/18 SCORER TMQ, JF COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inc.	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO R MODIFICATIONS: Cleared ROW, filling/grading	ECOVERY
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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Bldr Slabs, Boulder, Cobble, Bedrock  20.00%  (A)  Substrate Percentage  100%  Check  (B)	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
<ul> <li>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):</li> <li>&gt; 30 centimeters [20 pts]</li> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS tob: 4 ohwm:3 AVERAGE BANKFULL WIDTH Feet : 4.00	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  Residentian per Bank)  Residentian per Bank  Residentian pe	ent)
Flat (0.5 ft/100 ft) Flat to Moderate Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10	ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Towns	hip / City:Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	05/19/18 Quantity: 0.20
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 80%	6
Were samples collected for water chemistry? (Y/N): N (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N) N Salamanders O	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual)  bserved? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STDEAM DEACH (This must be completed).
	OF STREAM REACH (This <u>must</u> be completed):  site evaluation and a narrative description of the stream's location
T-Line ROV Edge  FLOW	Wetland
Slope T-Line C nterline	T-Line ROW Edge



### Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmg-05212018-02 RIVER BASIN 050301060303 SITE NUMBER NH-15 DRAINAGE AREA (mi2) LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE DATE **05/21/18 COMMENTS** ephemeral flow regime SCORER TMQ, JF NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** upstream braided low throughout wetland, loses definition downstream SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 55% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 45% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: 2 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 COMMENTS MAXIMUM POOL DEPTH Inches BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS tob: 3 ohwm:2 AVERAGE BANKFULL WIDTH Feet 3.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS pasture FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS ephemeral SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3

Severe (10 ft/100 ft)

Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

STREAM GRADIENT ESTIMATE

Flat to Moderate

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Att	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map	Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richla	and
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y _ Date of last precipitation: 05/19/18	Quantity: 0.20
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 75%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Programmer of Tadpoles Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation a	
T-Line ROV Edge pasture	etland
Slope T-Line C interline	T-Li te ROW Edge



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-052220	18-02
SITE NUMBER NH-16 RIVER BASIN 050301060303 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 350 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/22/18 SCORER TMQ, JF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:  MODIFICATIONS: stream within horse pasture, surrounded by wetland flows into pond	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] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts]  O% CLAY or HARDPAN [0 pt] O% O% OM	HHEI Metric Points Substrate Max = 40
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 Substrate Percentage 100% (B) TOTAL NUMBER OF SUBSTRATE TYPES: 2	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]  > 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	Pool Depth Max = 30
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y 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] ≤ 1.0 m (<=3' 3") [5 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTS tob: 2 ohwm:1 AVERAGE BANKFULL WIDTH Feet 2.00	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m Mature Forest, Wetland Conservation Tillage  Immature Forest, Shrub or Old Urban or Industrial  Field Open Pasture, Row Cro	qc
None Fenced Pasture Mining or Construction COMMENTS horse pasture	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS_ephemeral  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	-    -
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  3.0  3.0  3.0  3.0	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/10	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/21/18 Quantity: 0.02
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 60%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other features of intelest for <u>site evaluation and a parrative</u> description of the stream's location
T-Line ROW Edge
PHWH Form Page - 2

**Reset Form** 

Save as pdf

October 24, 2002 Revision

### ChicEPA Primary Headwater Habitat Evaluation Form

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

4	25	
4	วว	

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-052220	18-01
SITE NUMBER NH-17 RIVER BASIN 050301060303 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 372 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/22/18 SCORER TMQ, JF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:  MODIFICATIONS:  stream within cow pasture, turns into wetland downstream, flows into pond	COVERY
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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  10.00%  ARTIFICIAL [3 pts]  Substrate Percentage  10.00%  Substrate Percentage  100%  CHAY or HARDPAN [0 pts]  ARTIFICIAL [3 pts]  Substrate Percentage  100%  (B)	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS tob: 4 ohwm:1 AVERAGE BANKFULL WIDTH Feet : 4.00	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream (RIPARIAN WIDTH FLOODPLAIN QUALITY  LR (Per Bank) LR (Most Predominant per Bank) LR Conservation Tillage  Wide >10m Mature Forest, Wetland Conservation Tillage  Immature Forest, Shrub or Old Urban or Industrial  Narrow <5m Residential, Park, New Field Open Pasture, Row Conservation Tillage  None Trended Pasture Mining or Construction  COMMENTS pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None 1.0 2.0 3.0 >3  TOTAL ADARDANCE FOR AND TO THE COMMENTS AND TO THE COMMENTS AND TO THE COMMENTS AND	1
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/	100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Complete	ted):
QHEI PERFORMED? - Yes V No QHEI Score (If Ye	s, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATER	<del>-</del>
USGS Quadrangle Name: St Clairsville NRCS Soil	
	Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 05/21/18	Quantity: 0.02
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 40%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no.	or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.	U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please expla	in:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STRE	AM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluat	ion and a narrative description of the stream's location
T-Line ROV Edge shrub cover	sture
FLOW	wetland/ pond
T-Line	T-Line ROW Edge



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### ChieFPA Primary Headwater Habitat Evaluation Form

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

NU 49	2018-06
SITE NUMBER NH-18 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 172 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER MDT, JKF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING: appears it was impacted by cattle	COVERY
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  PERCENT  TYPE  PERCENT	HHEI Metric
□       BLDR SLABS [16 pts]       0%       ✓ □       SILT [3 pt]       50%         □       BOULDER (>256 mm) [16 pts]       0%       □       LEAF PACK/WOODY DEBRIS [3 pts]       0%         □       BEDROCK [16 pt]       0%       □       FINE DETRITUS [3 pts]       0%	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
GRAVEL (2-64 mm) [9 pts] 5% MUCK [0 pts] 0%  SAND (<2 mm) [6 pts] 25% ARTIFICIAL [3 pts] 0%	13
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH Inches 5	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
	Bankfull
<pre></pre>	Bankfull Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
→ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  3.00	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  Wide > 10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ☆ NOTE: River Left (L) and Right (R) as looking downstream ☆ RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  V I mature Forest, Shrub or Old  Field  Urban or Industrial	Width Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Moderate 5-10m  Narrow <5m  Narrow <5m  Narrow <5m  L R (Sesidential, Park, New Field  V ≤ 1.0 m (<=3' 3") [5 pts]  ✓ Substituting The substitution The substituting The substitution The substitution The substitution Th	Width Max=30
3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Width Max=30
S 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   S 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (> 10 m - 13') [25 pts]   S 1.5 m (	Width Max=30
Solution	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes / No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: _	
EWH Name:	Distance from Evaluated Stream
	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Towns	hip / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_	<b>05/16/18</b> Quantity: <b>0.16</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data  Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders O	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) bserved? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
FLOW  T-Line ROW Edge	site evaluation and a narrative description of the stream's location  s-mdt-5/1//2018-06  T-Line R DW Edge



# **ChieFP** Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/17/20	018-07
SITE NUMBER NH-19 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 159 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER MDT, JKF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECO	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
□ □ BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 30%	Max = 40
GRAVEL (2-64 mm) [9 pts] 0% MUCK [0 pts] 0%	6
SAND (<2 mm) [6 pts]	6
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  3.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R  (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River (R)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   ≤ 1.0 m (<=3' 3") [5 pts]   ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  Nor water (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Open Pasture, Row Crow Comments (Comments)  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  Fenced Pasture  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  Check ONLY one box):  OCHICAL OF TWO AS 10 m and 15 pts    OCHICAL OF TWO AS	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Moderate 5-10 m  Residential, Park, New Field  Open Pasture, Row Cro  None  Fenced Pasture  Mining or Construction  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  Fenced Pasture  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  Check ONLY one box):  OCHICAL OF TWO AS 10 m and 15 pts    OCHICAL OF TWO AS	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QH	El Form)
	Evaluated Stream
	valuated Stream
	<del>-</del>
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY	
	CS Soil Map Stream Order _
County: Belmont Township / City: Richland	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/16/18 Quantity:	0.16
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results)	Lab Number
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductiv	rity (µmnos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher lib number. Include appropriate field data sheets from the Primary Headwater Harrish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Comments Regarding Biology:	abitat Assessment Manual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This n	
Include important landmarks and other features of interest for site evaluation and a narrative desc	Emption of the Stream'S location
FLOW	T-Line R DW Ed
T-Line ROW Edge s-mdt-5/17/2018-07	
PHWH Form Page - 2	
October 24, 2002 Revision  Save as pdf	<b>Reset Form</b>



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/17/2	2018-05
SITE NUMBER NH-20 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 465 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER MDT, JKF COMMENTS perennial flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:  MODIFICATIONS: appears it was relocated for roads	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 30%	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 4
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  45%  MUCK [0 pts]  O%  ARTIFICIAL [3 pts]  0%	18
Tatal of Parameters of	
Total of Percentages of O.00% (A) Substrate Percentage Check 100% (B)	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 3
> 22.5 - 30 cm [30 pts]	20
	30
COMMENTS MAXIMUM POOL DEPTH Inches 12	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  \(\frac{1}{2}\) 1.0 m (<=3' 3") [5 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  5.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  5.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River Left (	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And Conservation Tillage  Immature Forest, Wetland  Onen Pasture Pow Conservation Proved Conservation Proved Conservation Tillage  Onen Pasture Pow Conservation Proved Conservation Proved Conservation Proved Conservation Tillage  Onen Pasture Pow Conservation Proved Conserv	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And Conservation Tillage  Immature Forest, Wetland  Onen Pasture Pow Conservation Proved Conservation Proved Conservation Tillage  Onen Pasture Pow Conservation Proved Conservation Proved Conservation Proved Conservation Tillage  Onen Pasture Pow Conservation Proved Conserv	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10 m Mature Forest, Wetland Conservation Tillage  Moderate 5-10 m Immature Forest, Shrub or Old Urban or Industrial Field  Narrow <5 m Residential, Park, New Field Open Pasture, Row C  None Fenced Pasture Mining or Construction  COMMENTS FOW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant p	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  (Most Predominant per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Narrow <5 m  Narrow <5 m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS perennial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH FLOODPLAIN QUALITY  Wide >10 m Mature Forest, Wetland  Moderate 5-10 m Moderate 5-10 m Residential, Park, New Field  Narrow <5 m Residential, Park, New Field  Fenced Pasture  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS perennial  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 3  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30  5

'					
ADDITIONAL STRE	EAM INFORMATION (This Information	ation Must Als	o be Completed):	<u>.</u>	
QHEI PER	RFORMED? - Yes 🗸 No Qi	HEI Score	(If Yes, A	ttach Completed QHEI Form)	
DOWNST	TREAM DESIGNATED USE(S)				
WWH Name:				Distance from Evaluated Stream	
CWH Name: _				Distance from Evaluated Stream	
EWH Name:				Distance from Evaluated Stream _	
MAPPING	3: ATTACH COPIES OF MAPS, INC	LUDING THE E	NTIRE WATERSH	ED AREA. CLEARLY MARK THE SITE LO	CATION
USGS Quadrangle N	Name: St Clairsville		NRCS Soil Map	Page: NRCS Soil Map Stream	Order _
County: Belmont		Town	ship / City: Rich	land	
MISCELL	ANEOUS				
Base Flow Condition	ns? (Y/N):_Y Date of last pr	recipitation:	05/16/18	Quantity: 0.16	
Photograph Informa					
Elevated Turbidity?		open): 100	0%		-
	ected for water chemistry? (Y/N):		ab sample no. or id	I. and attach results) Lab Number:	
				Conductivity (µmhos/cm)	
is the sampling read	ch representative of the stream (Y/I	N) II no	ı, piease expiain:		
Additional comment	ts/description of pollution impacts:				
Additional comment	s/description of poliditor impacts				
Performed? (Y/N): _ Fish Observed? (Y/N Frogs or Tadpoles C Comments Regardin	ID number. Include app  N) N Voucher? (Y/N) N  Observed? (Y/N) N Voucher? (Y/N)	oropriate field da Salamanders (	ta sheets from the F	nal. NOTE: all voucher samples must be laberimary Headwater Habitat Assessment Mar  Voucher? (Y/N)  rates Observed? (Y/N)  N  Voucher? (Y/N)	nual)
DRAV	VING AND NARRATIVE DE	SCRIPTION	OF STREAM	REACH (This must be complete	ed):
Include impo	rtant landmarks and other feature	es of interest fo	or site evaluation	and a narrative description of the stream	r's location
	road				
				/	
FLOW -					
	s-mdt-5/17/2018-05	s-mdt-5/17/2	2018-04		T-Line R DW Edg
1	<				
	/	slope			
T-Line R	ROW Edge				
`			ı		
					<u>'</u>
		DHWH	Form Page - 2		



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

58

SITE NAME/LOCATION | FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/17/2018-04 SITE NUMBER NH-21 RIVER BASIN 050301060703 DRAINAGE AREA (mi2) 310 LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE DATE **05/17/18 COMMENTS** intermittet flow regime SCORER MDT, JKF NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL MODIFICATIONS: appears it was relocated for roads SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 20% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 55% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 18 25% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: 3 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 25 COMMENTS MAXIMUM POOL DEPTH Inches BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM: 2 15 AVERAGE BANKFULL WIDTH Feet 4.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** R (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS row FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS intermittent SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:05/16/18 Quantity:0.16
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): _N Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location should be a single of the stream's location and a narrative description and a narrative description of the stream's location and a narrative description
PHWH Form Page - 2 October 24, 2002 Revision
Save as pdf Reset Form



# **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/17/2	018-02
SITE NUMBER NH-23 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 125 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER MDT, JKF COMMENTS perennial flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Appears it was dredgee and relocated	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]  0%  FINE DETRITUS [3 pts]  0%	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 20% MICK [0 pts] 0%	IVIAX = 40
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  15%  ARTIFICIAL [3 pts]  0%  0%	8
Total of Percentages of F. OOM (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  3 TOTAL NUMBER OF SUBSTRATE TYPES: 5	, , , , <u>,</u>
<ul> <li>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):</li> </ul>	Pool Dept Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	20
COMMENTS MAXIMUM POOL DEPTH Inches 16	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  5.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10 m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R)	Width Max=30
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 4     AVERAGE BANKFULL WIDTH     Feet	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R)	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (<=3' 3") [5 pts]   > 1.5 m - 3.0 m (> 9' 7" - 14' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank)   Vide >10m   Vide	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet : 5.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
	hip / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	<b>05/16/18</b> Quantity: <b>0.18</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100°	Vo
Were samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders O	collections optional. NOTE: all voucher samples must be labeled with the site sheets from the Primary Headwater Habitat Assessment Manual) below the Primary Headwater (Y/N) Now the Primary Habitat Assessment Manual) below the Primary Headwater (Y/N) Now the Primary Habitat Assessment Manual) had the Primary Habitat Assessment Manual (Y/N) Now t
	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for wetland    S-mdt-5/17/20108-02	site evaluation and a narrative description of the stream's location  wetland
FLOW	T-Line ROW Edge
T-Line ROW Edge	



## **ChieFP** Primary Headwater Habitat Evaluation Form

	018-03
SITE NUMBER NH-24 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 380 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/17/18 SCORER MDT, JKF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Appears it was dredged and relocated	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	. uuci
(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] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  TALL (F. B. and total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  PERCENT VYPE D' SILT [3 pt] 40% LEAF PACK/WOODY DEBRIS [3 pts] 0% CLAY or HARDPAN [0 pt] MUCK [0 pts] 0% ARTIFICIAL [3 pts] 0%	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 6  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3  Substrate Percentage 100%  TOTAL NUMBER OF SUBSTRATE TYPES: 4	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Distance from Evaluated Stream	
CWH Name: Distance from Evaluated Stream	
EWH Name: Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LO	CATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream	Order _
County: Belmont Township / City: Richland	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/16/18 Quantity: 0.16	
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be late ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Management (Y/N) N (	ual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be complet Include important landmarks and other features of interest for site evaluation and a narrative description of the stream slope	-
s-mdt-5/17/20108-03	The DOMEST
T-Line ROW Edge	T-Line R DW Edg
PHWH Form Page - 2 October 24, 2002 Revision	

Reset Form

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

45

SITE NAME/LOCATION   FirstEnergy Holloway-Knox 138kV Transmission Line   Field ID: s-mdt-05/16/2	018-04
SITE NUMBER NH-25 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 281 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER MDT, JKF COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Institute 1	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized and then filled in	COVERY
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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Bldr Slabs, Boulder, Cobble, Bedrock  TOTAL NUMBER OF SUBSTRATE TYPE OF SUBSTR	HHEI Metric Points Substrate Max = 40 20
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15	
Aximum 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 Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 3	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS OHWM: 2 AVERAGE BANKFULL WIDTH Feet : 5.00	20
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R Wide >10m Mature Forest, Wetland Conservation Tillage  Moderate 5-10m Field Urban or Industrial Field Open Pasture, Row Cr None Residential, Park, New Field Open Pasture, Row Cr None Fenced Pasture Mining or Construction  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	_
None	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must A	Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	
EWH Name:	Distance from Evaluated Stream
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont To	wnship / City:_ Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:_	05/15/18 Quantity: 0.02
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 1	00%
Were samples collected for water chemistry? (Y/N): N (Note	e lab sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	not, please explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Vou	cher collections optional. NOTE: all voucher samples must be labeled with the site
· / <del>-</del> ·	data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamander	rs Observed? (Y/N) Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Ac	quatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION	ON OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest	t for site evaluation and a narrative description of the stream's location
_	
gra	vel road
hh-mdt-5/16/20108-04	
FLOW TIME OF TOTAL OF THE PARTY	[fill protocial
	fill material T-Lipe RDW Edge
N	
T-Line ROW Edge	
PHW	/H Form Page - 2



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/16/2	018-05
SITE NUMBER NH-26 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 466 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER MDT, JKF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized previously	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.	HHEI
TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]  0%  FINE DETRITUS [3 pts]  0%	Substrat Max = 40
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%  GRAVEL (2-64 mm) [9 pts] 55% MUCK [0 pts] 0%	Wax = 4
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%	16
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12    Check   10076     10076	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX = 3
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	Bankful
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]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS OHWM: 1.5 AVERAGE BANKFULL WIDTH Feet : 4.00	15
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R	
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	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cr	р
None Fenced Pasture Mining or Construction COMMENTS row	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	-
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent	)
Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  Dry channel, no water (Ephemeral)	L
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 2.0 3.0 >3  1.5 2.5	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)
	50 II

ADDITIONAL STREAM INFORMATION (This Information Mus	st Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	re (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
	THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
SGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
ounty: Belmont	Township / City:Richland
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Y Date of last precipitation	on: 05/15/18 Quantity: 0.02
notograph Information: 3 photos	
evated Turbidity? (Y/N): N Canopy (% open):	100%
N	Note lab sample no. or id. and attach results) Lab Number:
	/I) pH (S.U.) Conductivity (µmhos/cm)
Y	
the sampling reach representative of the sheam (17/4)	II IIOI, piease explain.
dditional comments/description of pollution impacts:	
ID number. Include appropriate fie	Voucher collections optional. NOTE: all voucher samples must be labeled with the field data sheets from the Primary Headwater Habitat Assessment Manual)  Inders Observed? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)
	PTION OF STREAM REACH (This must be completed): erest for site evaluation and a narrative description of the stream's location
hh-r	-mdt-5/16/20108-05
LOW	
	T-Line RDW I
T-Line ROW Edge	slope
1	 
	PHWH Form Page - 2



## ChicEPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/16/2	2018-06
SITE NUMBER NH-27 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 223 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER MDT, JKF COMMENTS ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	. DUEI
(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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Type  PERCENT  O%  SILT [3 pt]  LEAF PACK/WOODY DEBRIS [3 pts]  O%  FINE DETRITUS [3 pts]  O%  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  O%  ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12  Substrate Percentage 100%  TOTAL NUMBER OF SUBSTRATE TYPES: 4	A+B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dept
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Wax = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 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]   ✓ (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10 m Auture Forest, Wetland  Moderate 5-10 m Mature Forest, Wetland  None  None  Residential, Park, New Field  None  COMMENTS OHE Residential, Park, New Field  None  Fenced Pasture  Mining or Construction  COMMENTS OF Mining OF Mining or Construction  COMMENTS OF Mining OF M	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must A	Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE	E ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
D. I	wnship / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	<b>05/15/18</b> Quantity: <b>0.02</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 1	00%
Were samples collected for water chemistry? (Y/N): (Note	e lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y	not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamander	cher collections optional. NOTE: all voucher samples must be labeled with the sidata sheets from the Primary Headwater Habitat Assessment Manual)  The Sobserved? (Y/N) N Voucher? (Y/N) N Vouche
DRAWING AND NARRATIVE DESCRIPTION	ON OF STREAM REACH (This must be completed):
Include important landmarks and other features of interes	t for site evaluation and a narrative description of the stream's location
s	dope
FLOW Thh-mdt-S	7-Line RDW Edg
T-Line ROW Edge	slope
	/H Form Page - 2



## **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/16/2	018-02
SITE NUMBER NH-28 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 75 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER MDT, JKF COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized through hayfield	COVERY
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.	HHEI
TYPE  PERCENT  TYPE  PERCENT  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 25%	Max = 40
GRAVEL (2-64 mm) [9 pts]	7
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  2.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY  FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  V 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH  Feet  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   ≤ 1.0 m (<=3' 3") [5 pts]   ≤ 1.0	Width Max=30
> 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]	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   ≤ 1.0 m (<=3' 3") [5 pts]   ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (<=3' 3") [5 pts]   > 1.0 m (<=10 pts]   > 1.0 m (<=10 pts]   > 1.0 m (<=10 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Noist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 2.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY ↓ Most Predominant per Bank)  L R (Per Bank) ↓ L R (Most Predominant per Bank) ↓ Wide >10m	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Penced Pasture  COMMENTS OHE AT Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (< 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 2.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS Forey  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (< 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 2.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Comp	leted):
QHEI PERFORMED? - Yes V No QHEI Score (If	Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WAT	ERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS So	oil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City:	Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/15/1	8 Quantity: <b>0.02</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample n	o. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH	(S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please ex	plain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from Fish Observed? (Y/N) N Salamanders Observed?	s optional. NOTE: all voucher samples must be labeled with the site m the Primary Headwater Habitat Assessment Manual)  (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STR Include important landmarks and other features of interest for site evaluations.	
FLOW	T Line POW Edge
T-Line ROW Edge	T-Line ROW Edge



SITE NAME/LOCATION FirstEnergy Hollo	way-Knox 138kV Transmis	sion Line Fiel	d ID: s-mdt-05/16/201	8-01
SITE NUMBER N	H-29 RIVER BASIN 0503	301060703 D	RAINAGE AREA (mi²)	
ENGTH OF STREAM REACH (ft) 62	LAT. LONG.	RIVER CODE	RIVER MILE	
DATE 05/16/18 SCORER MDT, JK	F COMMENTS Intermitte	nt flow regime		
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation N	lanual for Ohio's PHV	/H Streams" for Instruc	ctions
STREAM CHANNEL NONE / NA hondifications:	URAL CHANNEL RECOVERE	D RECOVERING	RECENT OR NO RECOV	VERY
I. SUBSTRATE (Estimate percent of eve				HHE
(Max of 32). Add total number of signific <b>TYPE</b>	ant substrate types found (Max of 8). ERCENT <u>TYPE</u>	Final metric score is sum	PERCENT	Metri
BLDR SLABS [16 pts]	<b>0</b> % SILT [3 p	-	15%	Point
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]		CK/WOODY DEBRIS [3		Substra
COBBLE (65-256 mm) [12 pts]		TRITUS [3 pts] HARDPAN [0 pt]		Max = 4
GRAVEL (2-64 mm) [9 pts]	25% MUCK [0		0%	4.4
SAND (<2 mm) [6 pts]	10% ARTIFIC	IAL [3 pts]	0%	14
Total of Percentages of	.00% (A) Substrate Pe	ercentage 100%	(B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock CORE OF TWO MOST PREDOMINATE SUBS		AL NUMBER OF SUBST	RATE TYPES: 5	
. Maximum Pool Depth (Measure the m	aximum pool depth within the 61 i	meter (200 ft) evaluation r	each at the time of	Pool De
evaluation. Avoid plunge pools from road		,		Max = 3
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm · < 5 cm ·	- 10 cm [15 pts] [5 pts]	I	
> 10 - 22.5 cm [25 pts]		TER OR MOIST CHANNE	EL [0 pts]	5
COMMENTS	M	IAXIMUM POOL DEPTH[	Inches 2	
BANK FULL WIDTH (Measured as the	average of 3-4 measurements)	(Check ONLY one	box):	Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m	- 1.5 m (> 3' 3" - 4' 8") [15		Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	<u> </u>	(<=3' 3") [5 pts]		Max=30
COMMENTS OHWM: 1	Α	VERAGE BANKFULL WI	DTH Feet ): 3.00	5
RIPARIAN ZONE AND FLOODP	This information must als	so be completed Left (L) and Right (R) as l	ooking downstroom	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	Left (L) and riight (IV) as	ooking downstream A	
L R (Per Bank)	L R (Most Predominant per			
✓ ✓ Wide >10m	Mature Forest, Wetland Immature Forest, Shrul		Conservation Tillage	
Moderate 5-10m	Field		Urban or Industrial	
Narrow <5m	Residential, Park, New	Field	Open Pasture, Row Crop	
None	Fenced Pasture		Mining or Construction	
COMMENTS row				
FLOW REGIME (At Time of Eva				
Stream Flowing Subsurface flow with isolated poor		Moist Channel, isolated po Dry channel, no water (Eլ		
COMMENTS_intermittent	· · · · · · · · · · · · · · · · · · ·	, (L)	,	
SINUOSITY (Number of bends r	er 61 m (200 ft) of channel) (Check	ONLY one box).		
None		.0	3.0	
	1.0		3.0 >3	
None 0.5  STREAM GRADIENT ESTIMATE	1.0	.0	>3	
None □ 0.5	1.0	.0		ft)

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ship / City: Richland
MISCELLANEOUS	Sillp / Oity
Base Flow Conditions? (Y/N): Y Date of last precipitation:	<b>05/15/18</b> Quantity: <b>0.02</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	0%
Were samples collected for water chemistry? (Y/N): (Note la	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not	, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field date in the first Observed? (Y/N) N Voucher? (Y/N) N Salamanders of	er collections optional. NOTE: all voucher samples must be labeled with the star sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
	OF STREAM REACH (This must be completed):
FLOW	hh-mdt-5/16/20108-01  Slope  T-Line ROW Edge



## **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NUMBER NH-30 RIVER BASIN 050301060703 DRAINAGE AREA (mi²)	018-03
LENGTH OF STREAM REACH (ft) 84 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/16/18 SCORER MDT, JKF COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized through hayfield	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  ARTIFICIAL [3 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  O%  ARTIFICIAL [3 pts]  O%  ARTIFICIAL [3 pts]  O%  ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 4	A+B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS OHWM: 1 AVERAGE BANKFULL WIDTH Feet : 3.00	11 1
	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS  FLOW REGIME (At Time of Evaluation)  COMMENTS  Wide >10 m (200 ft) of channel)  Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  COMMENTS  (Check ONLY one box):  Check ONLY one box):	ор

ADDITIONAL STREAM INFORMATION (This Information Must Also be Complete	ed):
QHEI PERFORMED? - Yes V No QHEI Score (If Ye	s, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATER	
USGS Quadrangle Name: St Clairsville NRCS Soil	Map Page: NRCS Soil Map Stream Order
	Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 05/15/18	Quantity: 0.00
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no.	or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.	U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream $(Y/N)$ If not, please expla	in:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections o	ptional. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinve	N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	N .
DRAWING AND NARRATIVE DESCRIPTION OF STRE	AM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluat	<del></del>
FLOW →	hh-mdt-5/16/20108-03
FLOW wetland	T-Line RDW Edge
T-Line ROW Edge	
DUWU Form Page	•



## **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/11	2018-01
SITE NUMBER NH-31 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 106 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/11/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
□ BLDR SLABS [16 pts] 0% SILT [3 pt] 30%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  BEDROCK [16 pt]  D'M  LEAF PACK/WOODY DEBRIS [3 pts]  0%  FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 55%	Max = 40
GRAVEL (2-64 mm) [9 pts] 15% MUCK [0 pts] 0%	6
SAND (<2 mm) [6 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
MAYIMUM POOL PERTUINA	
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	Bankfull
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]	Width
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  \( \leq \) 1.0 m (<=3' 3") [5 pts]	Width Max=30
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]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  1.00	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.0 m (<=3' 3") [5 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) and	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY *NOTE: River Left (L) and Right (R) as looking downstream*  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Vide >10 mature Forest, Wetland Moderate 5-10m  Narrow <5m Residential, Park, New Field Open Pasture, Row One Personal Mining or Construction Mining or Construction Mining or Construction	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.0 m (<=3' 3") [5 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  I.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row (Check ONL Y one box):  > 1.0 m (<=3' 3") [5 pts]    1.00    1.00    2.10   3.10   4.10   5.10   5.10   6.10   6.10   6.10   6.10   6.10   7.10	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  ENDOTED LAIN QUALITY  Wide >10 m Auture Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Open Pasture, Row of Comments of C	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet : 1.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\$NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\$ RIPARIAN WIDTH  L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominan	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}NOTE: River Left (L) and Right (R) as looking	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m Mature Forest, Wetland Conservation Tillage  Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial  Narrow <5m Residential, Park, New Field Open Pasture, Row of None Fenced Pasture  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet : 1.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY FLOODPLAIN QUALITY Wide >10 m Mature Forest, Wetland Conservation Tillage   Moderate 5-10m   Mature Forest, Shrub or Old   Urban or Industrial   Moderate 5-10m   Residential, Park, New Field   Open Pasture, Row of the completed   Mining or Construction   Comments   Mining or Construction   Comments	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY *NOTE: River Left (L) and Right (R) as looking downstream *\text{NOTE: Riv	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream to RIPARIAN WIDTH    R	Width Max=30  5

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  EWH Name:	Distance from Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ship / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	<b>05/06/18</b> Quantity: <b>0.06</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note lab	o sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders C	er collections optional. NOTE: all voucher samples must be labeled with the sa sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location  Slope  hh-mdt-5/11/20108-01



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

40

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line	Field ID: s-mdt-05/11/2018-02
SITE NUMBER NH-32 RIVER BASIN 050301060704	DRAINAGE AREA (mi²)0.01_
LENGTH OF STREAM REACH (ft) 249 LAT. LONG. RIVER CO	DDERIVER MILE
DATE 05/11/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's	s PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERED RECOVERED	NG RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predom	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score	Motri
TYPE         PERCENT         TYPE           □ □ □ BLDR SLABS [16 pts]         0% □ □ □ SILT [3 pt]	PERCENT Point
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  BEDROCK [16 pt]	RIS [3 pts] 0% Substrat
BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  D  COBBLE (65-256 mm) [12 pts]  D  CLAY or HARDPAN [0 pt]	5% Max = 4
GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts]	0% 20
SAND (<2 mm) [6 pts] 20% ARTIFICIAL [3 pts]	0%
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15.00% (A) Substrate Percentage Check 100%	(B) A + B
Bidi Clabs, Bodider, Cobble, Bediock	UBSTRATE TYPES: 5
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evalu	
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	x): Max = 3
> 22.5 - 30 cm [30 pts]	IANINEL IO ptol
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CH	
COMMENTS MAXIMUM POOL DE	EPTH Inches 2
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL)	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (> 3' 3" - 4' 8 \( \leq 1.0 m (<=3' 3") [5 pts]	8") [15 pts] Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS OHWM: 2 ; TOB: 4	LL WIDTH Feet : 4.00   15
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (	D) as la aline a deconstant and
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right ( RIPARIAN WIDTH FLOODPLAIN QUALITY	R) as looking downstream 3
	R Composition Tillege
✓    Wide >10m    ✓    Mature Forest, Wetland      Immature Forest, Shrub or Old	Conservation Tillage  Urban or Industrial
Field	Open Pasture, Row Crop
Narrow <5m Residential, Park, New Field	
None Fenced Pasture COMMENTS row	Mining or Construction
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isola	ated pools, no flow (Intermittent)
Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  Dry channel, no wa	iter (Ephemeral)
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0	3.0
□ 0.5	>3
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Seven	ro
Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Sever	re Severe (10 ft/100 ft)

ADDITIONAL STRE	AM INFORMATIO	ON (This Information Mu	ıst Also	be Completed)	<u>:</u>			
QHEI PER	FORMED? -	Yes No QHEI Scor	re	(If Yes, A	ttach Complete	ed QHEI Forn	n)	
DOWNSTI  WWH Name:  CWH Name:  EWH Name:		TED USE(S)			_ Distance f	from Evaluate rom Evaluate rom Evaluate	d Stream _	
	: ATTACH COPIE	S OF MAPS, INCLUDING	THE EN	TIRE WATERSH	ED AREA. CLI	EARLY MARK	THE SITE LOCA	ATION
USGS Quadrangle N	lame: St Clairsv	ille		NRCS Soil Map	Page:	NRCS Soil	Map Stream Or	der _
County: Belmont			Townsl	nip / City: Rich	land			
MISCELLA	ANEOUS							
Base Flow Condition	s? (Y/N):_Y	_ Date of last precipitation	on:	05/06/18	Quantit	y: <b>0.06</b>		
Photograph Informat	ion: 3 photos							
Elevated Turbidity? (	Y/N): N	Canopy (% open):	100%	6				
Were samples collec	cted for water che	mistry? (Y/N): N (I	Note lab	sample no. or ic	d. and attach re	sults) Lab Nu	ımber:	
		Dissolved Oxygen (mg	ı/l)	pH (S.U.)	Con	ductivity (µm	hos/cm)	
Is the sampling reac	h representative o	of the stream (Y/N)	If not,	olease explain:_				
Additional comments	description of p	Allution imports:						
Additional comments	s/description of po	bilution impacts:						
	ID nun N Vouch	, Record all observations.  nber. Include appropriate for the ser? (Y/N) N Salamar  N Voucher? (Y/N) N	field data nders Ol	•	Primary Headwa	ater Habitat As		al)
		RRATIVE DESCRIP			_	<u> </u>	-	
FLOW →	OW Edge	Slope hh-mdt-5/11/201	<u> </u>	hh-mdt-5/11/20			lope	
V	_						_ Line No.	



### Primary Headwater Habitat Evaluation Form

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HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/11/2018-04 SITE NUMBER NH-33 RIVER BASIN 050301060704 DRAINAGE AREA (mi2) LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE DATE **05/11/18 COMMENTS** Ephemeral flow regime MDT, BCR SCORER NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 20% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 5% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 50% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 19 25% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 5.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 COMMENTS MAXIMUM POOL DEPTH Inches BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM: 1 ; TOB: 1 AVERAGE BANKFULL WIDTH Feet 1.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** R (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS row FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS ephemeral SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE ✓ Moderate to Severe Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREA	M INFORMATIO	N (This Information M	ust Also be Con	npleted):			
QHEI PERI	FORMED? -	Yes No QHEI Sco	re (	If Yes, Attac	h Completed QHEI Fo	orm)	
DOWNSTR	REAM DESIGNAT	ED USE(S)					
WWH Name:					Distance from Evalu	ated Stream	
CWH Name:					Distance from Evalua		
EWH Name:					Distance from Evalua	ated Stream _	
		OF MAPS, INCLUDING	THE ENTIRE W	ATERSHED A	AREA. CLEARLY MA	RK THE SITE LOCA	TION
USGS Quadrangle Na	ame: St Clairsvi	lle	NRCS	Soil Map Pa	ge: NRCS S	oil Map Stream Ord	der
County: Belmont			Township / Cit	/:_Richlan	d		
MISCELLA	NEOUS						
Base Flow Conditions	s? (Y/N):_ <b>Y</b>	Date of last precipitati	on: <b>05/06</b>	/18	Quantity: 0.0	6	
Photograph Information	on: 3 photos						
Elevated Turbidity? (\	Y/N): <b>N</b>	Canopy (% open):	100%				
Were samples collect	ted for water che	mistry? (Y/N): _N(	Note lab sample	no. or id. ar	nd attach results) Lab	Number:	
		Dissolved Oxygen (mo	ı/l)p	H (S.U.)	Conductivity (µ	mhos/cm)	
Is the sampling reach	representative o	f the stream (Y/N)	If not, please	explain:			
Additional comments	/description of po	llution impacts:					
Additional comments/	raesemption of po	nation impacts.					
BIOTIC EV	VALUATION						
Performed? (Y/N): _		Record all observations. ber. Include appropriate				•	
E			nders Observed		N	Assessment Manua	')
Fish Observed? (Y/N) Frogs or Tadpoles Ob	) Vouch oserved? (Y/N) N				Voucher? (Y/N)	Voucher? (Y/N)	N
Comments Regarding					IN .		
DRAW	ING AND NA	RRATIVE DESCRI	PTION OF ST	REAM RE	EACH (This <u>must</u>	be completed	):
Include import	ant landmarks a	nd other features of into	erest for site eva	luation and /	l a narrative descripti	on of the stream's	location
		<del></del>		mdt-5/11/20108-	-01	Slope	
			-mdt-5/11/20108-04	┙ (			
		Slope	ı \	\			
_					X	-	
FLOW -			`				
		hh-mdt-5/11/20	108-03	\			
1				1			
	NA/ Edua	1			hh-mdt-5	5/11/20108-02	
T-Line RO	VVV Edde					T-Line ROW	Edge



## **ChieFP** Primary Headwater Habitat Evaluation Form

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25	

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/11/2	2018-03
SITE NUMBER NH-34 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 195 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/11/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING.	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]  0%  SILT [3 pt]  30%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  O%  LEAF PACK/WOODY DEBRIS [3 pts]  O%  FINE DETRITUS [3 pts]  O%	Substrat
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%	13
Total of Percentages of 5.00% (A) Substrate Percentage Check 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
	1
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  1.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V V Wide >10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Most Predominant per Bank)    Mature Forest, Wetland   Conservation Tillage   Immature Forest, Shrub or Old   Urban or Industrial   Field   Conservation Provided   Conservatio	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Most Predominant per Bank)    Mature Forest, Wetland   Conservation Tillage   Immature Forest, Shrub or Old   Urban or Industrial   Field   Conservation Provided   Conservatio	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Moderate 5-10m  None  None  COMMENTS Fenced Pasture  None  COMMENTS Fenced Pasture  Mining or Construction  COMMENTS Fow	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  L R (Per Bank)  Vide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Moderate 5-10 m  None  None  COMMENTS Fow  Fenced Pasture  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Noist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴  RIPARIAN WIDTH  FLOODPLAIN QUALITY  ↓ R (Per Bank)  ↓ Wide >10m  Mature Forest, Wetland  Moderate 5-10m  None  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Narrow <5 m  Narrow <5 m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream And Floodplain Quality  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  MoTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Mote > 10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) as looking downstream And Floodplain Quality  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  Residential, Park, New Field  Open Pasture, Row Completed  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0	Width Max=30  5

e Completed):
(If Yes, Attach Completed QHEI Form)
Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
NRCS Soil Map Page: NRCS Soil Map Stream Order
p / City:Richland
05/06/18 Quantity: 0.06
ample no. or id. and attach results) Lab Number:
pH (S.U.) Conductivity (µmhos/cm)
ease explain:
ollections optional. NOTE: all voucher samples must be labeled with the site heets from the Primary Headwater Habitat Assessment Manual) erved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
F STREAM REACH (This <u>must</u> be completed):
hh-mdt-5/11/20108-01  Slope  hh-mdt-5/11/20108-02  T-Line ROW Edge



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/11/2	018-05
SITE NUMBER NH-35 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 102 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/11/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime from seep	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Evidence of broken drain tiles	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  PERCENT  TYPE  PERCENT	HHEI   Metric
□ □ BLDR SLABS [16 pts] □ □ SILT [3 pt] 10%	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	25
SAND (<2 mm) [6 pts]	
Total of Percentages of 30.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21  TOTAL NUMBER OF SUBSTRATE TYPES: 4	
	Pool Dep
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	الم
	-
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]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS OHWM: 1.5 ; TOB: 2  AVERAGE BANKFULL WIDTH Feet : 2.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m    Immature Forest, String of Old	
Narrow <5m Residential, Park, New Field Open Pasture, Row Cro	
Narrow Sill Residential, Faik, New Field	op
None Fenced Pasture Mining or Construction	op
	- -
None Fenced Pasture Mining or Construction COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	-
None Fenced Pasture Mining or Construction COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	-
None Fenced Pasture Mining or Construction COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	-
None COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	-
None COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	-
None COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0  V 0.5 1.5 2.5 3	-
None COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	· - ) [

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y
<u></u>
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location    Slope   Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location   Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location   Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location   Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location   Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location   Include important landmarks   Inc
FLOW -
T-Line ROW Edge
Slope



## ChicEPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/11/2	018-06
SITE NUMBER NH-36 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 504 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/11/18 SCORER MDT, BCR COMMENTS Perennial flow regime; Welsh Run	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVE	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] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  15% ARTIFICIAL [3 pts] 0% ARTIFICIAL [3 pts] 0%  ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5.00% (A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from 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 Dept Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 6	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y 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] ≤ 1.0 m (<=3' 3") [5 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTS OHWM: 3 ; TOB: 6 AVERAGE BANKFULL WIDTH Feet : 6.00	20
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	L
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Complete	ed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes	s, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATER	
USGS Quadrangle Name: St Clairsville NRCS Soil M	
County: Belmont Township / City: R	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y _ Date of last precipitation: 05/06/18	Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. c	or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U	J.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	n:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREA	on and a narrative description of the stream's location
FLOW  T-Line ROW Edge	Glencoe Rd  T-Line ROW Edge
PHWH Form Page - 2	

Save as pdf

Reset Form



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/15/2	018-06
SITE NUMBER NH-37 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 183 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER MDT, JKF COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Insti	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized previously	COVERY
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.	HHE
TYPE  PERCENT  TYPE  PERCENT  PERCENT	Metric
BLDR SLABS [16 pts]  BOULDER (>256 mm) [16 pts]  0%  SILT [3 pt]  LEAF PACK/WOODY DEBRIS [3 pts]  0%	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%	18
Title (D)	
Bldr Slabs, Boulder, Cobble, Bedrock	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	max = 0
→       > 22.5 - 30 cm [30 pts]       ←       5 cm [5 pts]         > 10 - 22.5 cm [25 pts]       →       NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 3	
COMMENTS MAXIMOM FOOL DEPTH	
	<u> </u>
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]	Bankful Width
> 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]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 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]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH Feet : 3.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY  FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide > 10m  Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10m  Moderate 5-10m  Moderate 5-10m  V Lipan or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (<=3' 3") [5 pts]   > 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Under Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row Cr  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Fenced Pasture  COMMENTS Forew  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  Moderate (Ephemeral)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  **NOTE: River Left (L) and Right (R) as looking downstream **  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Penced Pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  Dry channel, no water (Ephemeral)  COMMENTS intermittent	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  **NOTE: River Left (L) and Right (R) as looking downstream **  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Penced Pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  Dry channel, no water (Ephemeral)  COMMENTS intermittent	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (< 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 3.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: _	_ Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map F	Page:NRCS Soil Map Stream Order
County: Belmont Township / City: Richla	and
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 05/14/18	Quantity: 0.36
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
N.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	
v	Conductivity (printed/citr)
is the sampling reach representative of the stream (17/14) in not, please explain	
<u> </u>	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optiona ID number. Include appropriate field data sheets from the Pri Voucher? (Y/N) N Salamanders Observed? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebra Comments Regarding Biology:	Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	PEACH (This must be completed):
Include important landmarks and other features of interest for site evaluation ar	
FLOW  hh-mdt-5/15/20108-06  T-Line ROW Edge	T-Line ROW Edge



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

23

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/15/2	018-07
SITE NUMBER NH-38 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 183 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER MDT, JKF COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVE	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    Comparison of the c	HHEI Metric Points Substrate Max = 40  13
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] < 5 cm [5 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 2	
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] ≤ 1.0 m (<=3' 3") [5 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Bankfull Width Max=30
COMMENTS OHWM: 1 AVERAGE BANKFULL WIDTH Feet : 3.00	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River Left (L)	-
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/14/18 Quantity: 0.36
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): _N Canopy (% open):100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution imposts:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the si ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  wetland  Inh-mdt-5/15/20108-07  T-Line ROW Edge  T-Line ROW Edge



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/15/2  SITE NUMBER NH-39 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	018-04
SITE NUMBER NH-39 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 304 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER MDT, JKF COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized previously	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.	HHEI
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]  O%  FINE DETRITUS [3 pts]	Substrat
COBBLE (65-256 mm) [12 pts]	Max = 4
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	13
Total of Percentages of O.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX = 3
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
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]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  ✓ (<=3' 3") [5 pts]	Max=30
COMMENTS OHWM: 1 AVERAGE BANKFULL WIDTH Feet : 3.00	5
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\frac{1}{2}\text{NOTE: River Left (L) and Right (R) as looking downstream \$\frac{1}{2}\text{ and Right (R) and Right (R) as looking downstream \$\frac{1}{2}\text{ and Right (R) and Right (R) and Right (R) as looking downstream \$\frac{1}{2} and Right (R)	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage	
RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Urban or Industrial	
RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Moderate 5-10m  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Urban or Industrial	qc
RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Conservation Tillage  Immature Forest, Shrub or Old  Field  Conservation Tillage	qc
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m  Narrow <5m None Fenced Pasture  Fenced Pasture  FLOW REGIME (At Time of Evaluation)  Check ONLY one box):	<u></u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) Wide >10m Moderate 5-10m Moderate 5-10m  Residential, Park, New Field  None COMMENTS  Fow  FLOW REGIME (At Time of Evaluation)  Stream Flowing Subsurface flow with isolated pools (Interstitial)  PLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R (Most Predominant per Bank) L R (Conservation Tillage I Mature Forest, Wetland I Conservation Tillage I Urban or Industrial  Open Pasture, Row Cree  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	<u></u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Immature Forest, Shrub or Old  Narrow <5m  Residential, Park, New Field  None  COMMENTS  Fenced Pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  PRODPLAIN QUALITY  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R (Conservation Tillage  Urban or Industrial  Open Pasture, Row Cree  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	<u></u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS row  FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0  Residential, Park, New Field Moist Channel, isolated pools; Dry channel, no water (Ephemeral)  (Check ONLY one box): Check ONLY one box): None 3.0  3.0	<u></u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Conservation Tillage Immature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row Cree  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3	<u></u>
RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) Wide >10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field None COMMENTS row  FLOW REGIME (At Time of Evaluation) Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) None 1.0  Residential, Park, New Field Moist Channel, isolated pools; Dry channel, no water (Ephemeral)  (Check ONLY one box): Check ONLY one box): None 3.0  3.0	) ]

ADDITIONAL STRE	AM INFORMATION (T	nis Information Must Als	so be Completed):			
QHEI PER	FORMED? - Yes	✓ No QHEI Score	(If Yes, Atta	ach Completed QHEI Forr	m)	
	REAM DESIGNATED U	JSE(S)		1		
WWH Name:				Distance from Evaluat		-
EWH Name: _				_ Distance from Evaluate _ Distance from Evaluate	_	
MAPPING	: ATTACH COPIES OF	MAPS, INCLUDING THE E	ENTIRE WATERSHEI	DAREA. CLEARLY MARK	THE SITE LOCATION	ON
USGS Quadrangle N	St Clairsville		NRCS Soil Map F	Page: NRCS Soi	l Map Stream Order	
County: Belmont		Town	nship / City: Richla	ınd		
MISCELLA	ANEOUS					
Base Flow Condition	s? (Y/N):_Y Dat	e of last precipitation:	05/14/18	Quantity: 0.36		
Photograph Informat	ion: 3 photos					
Elevated Turbidity?	(Y/N): N C	anopy (% open): <b>10</b>	0%			
Were samples collec	cted for water chemistry	? (Y/N): N (Note I	ab sample no. or id.	and attach results) Lab N	umber:	
				Conductivity (µm		
Is the sampling reac	h representative of the	stream (Y/N) Y If no	ot, please explain:			
Additional comments	s/description of pollution	impacts:				
BIOTIC E Performed? (Y/N): Fish Observed? (Y/N Frogs or Tadpoles C Comments Regarding	ID number.  Voucher? (Y/N)	nclude appropriate field da (/N) N Salamanders	observed? (Y/N)	II. NOTE: all voucher samp imary Headwater Habitat A Voucher? (Y/N) N tes Observed? (Y/N)		vith the site
		ner features of interest f		REACH (This must be and a narrative description 0108-04		eation
T-Line R	OW Edge		slope		T-Line RO\V Edg	е



SITE NAME/LOCATION   FirstEnergy Holloway-Knox 138kV Transmission Line   Field ID: s-mdt-05/15/2	2018-05
SITE NUMBER NH-40 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 95 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER MDT, JKF COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized previously	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metri
BLDR SLABS [16 pts] 0% SILT [3 pt] 10%	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 40%	Max = 4
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  O%  ARTIFICIAL [3 pts]	13
Total of Percentages of Occor (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check Check	^+6
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	<u> </u>
<ol> <li>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):</li> </ol>	Pool Dep Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
PANKETHA MIDTH (Managed on the construction)	Danleful
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]	Bankful Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Bankful Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Moderate 5-10m  Moderate 5-10m  NOTE: River Left (L) and Right (R) as looking downstream ★  Conservation Tillage  Immature Forest, Wetland  V V Urban or Industrial	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10m  Moderate 5-10m  Moderate 5-10m  Noderate 5-10m	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And Conservation Tillage  Immature Forest, Wetland  Onen Pasture Pow Conservation Prove Conservation  Onen Pasture Pow Conservat	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 3.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10 Mature Forest, Wetland Conservation Tillage  Moderate 5-10m Mature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row C  None Residential, Park, New Field Open Pasture, Row C  None Fenced Pasture Mining or Construction  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 3.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10m Mature Forest, Wetland Conservation Tillage  Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial Field Open Pasture, Row C  None Residential, Park, New Field Open Pasture, Row C  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  (Most Predominant per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (<=3' 3") [5 pts]   > 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (<=3' 3") [5 pts]   > 1.0	Width Max=30  5

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ship / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	<b>05/14/18</b> Quantity: <b>0.36</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	0%
Were samples collected for water chemistry? (Y/N): (Note la	ab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
rtadional commence decempion of political impacts.	
ID number. Include appropriate field date Fish Observed? (Y/N) N Salamanders (	er collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
	NOF STREAM REACH (This must be completed): or site evaluation and a narrative description of the stream's location    hh-mdt-5/15/20108-05     T-Line ROW Edge

# **ChieFP** Primary Headwater Habitat Evaluation Form

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

Stream NH-41

SITE NAME/LOCATION FirstEnergy Hollo	pway-Knox 138kV Transmission Line	Field ID: s-mdt-05/15/2018-03
SITE NUMBER N	H-41 RIVER BASIN 050301060702	DRAINAGE AREA (mi²)
LENGTH OF STREAM REACH (ft) 176	LAT. LONG. RIVER	
DATE 05/15/18 SCORER MDT, JK	F COMMENTS Ephemeral flow regime	9
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation Manual for Ohio	o's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NAT MODIFICATIONS: channelized previously in horse p	TURAL CHANNEL RECOVERED RECOVE	ERING RECENT OR NO RECOVERY
	ry type of substrate present. Check ONLY two pred	
, ,	ant substrate types found (Max of 8). Final metric sco ERCENT TYPE	re is sum of boxes A & B.  PERCENT  HHE  Metri
BLDR SLABS [16 pts]	<b>0</b> % SILT [3 pt]	35% Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DE  O% FINE DETRITUS [3 pts]	BRIS [3 pts] 0% Substrat
BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]	0% FINE DETRITUS [3 pts] 0% CLAY or HARDPAN [0 pt	Max = 4
GRAVEL (2-64 mm) [9 pts]	45% MUCK [0 pts]	0%
SAND (<2 mm) [6 pts]	20% ARTIFICIAL [3 pts]	0%
Total of Percentages of 0	.00% (A) Substrate Percentage 100%	(B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS		SUBSTRATE TYPES: 3
• •	aximum pool depth within the 61 meter (200 ft) eva	
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one > 5 cm - 10 cm [15 pts]	box): Max = 3
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST	CHANNEL [0 pts] 5
COMMENTS	MAXIMUM POOL	DEPTH Inches 1
BANK FULL WIDTH (Measured as the	average of 3-4 measurements) (Check ON	ILY one box): Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" -	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	✓ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS OHWM: 1	AVERAGE BANK	FULL WIDTH Feet : 3.00 5
RIPARIAN ZONE AND FLOODP	This information must also be completed  LAIN QUALITY ☆NOTE: River Left (L) and Righ	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	it (it) as looking downstream a
L R (Per Bank)	L R (Most Predominant per Bank)	L R
Wide >10m	Mature Forest, Wetland Immature Forest, Shrub or Old	Conservation Tillage
Moderate 5-10m	Field	Urban or Industrial
Narrow <5m	Residential, Park, New Field	Open Pasture, Row Crop
None COMMENTS row pasture	✓ Fenced Pasture	Mining or Construction
		<del></del>
FLOW REGIME (At Time of Eval		colated pools, no flow (Intermittent)
Subsurface flow with isolated poo COMMENTS_ephemeral		water (Ephemeral)
		J.
SINUOSITY (Number of bends p	er 61 m (200 ft) of channel) (Check <i>ONLY</i> one box): 1.0 2.0	3.0
0.5	1.5	>3
STREAM GRADIENT ESTIMATE		
Flat (0.5 ft/100 ft)	Moderate (2 ft/100 ft) Moderate to Se	vere Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Mu	st Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Scor	e (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream
	THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont	Township / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation	on: 05/14/18 Quantity: 0.36
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open):	100%
Were samples collected for water chemistry? (Y/N): (I	Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg	/l)pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	If not, please explain:
, , , , , , , , , , , , , , , , , , , ,	
Additional comments/description of pollution impacts:	
Additional comments/description of politicion impacts.	
ID number. Include appropriate f	Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ield data sheets from the Primary Headwater Habitat Assessment Manual)  Inders Observed? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIP	PTION OF STREAM REACH (This must be completed):
	erest for site evaluation and a narrative description of the stream's location
slope	T-Line ROW Edge
_	
	hh-mdt-5/15/20108-02
FLOW	slope



### ChicEPA Primary Headwater Habitat Evaluation Form

SITE NUMBER NH-42 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)	2018-02
LENGTH OF STREAM REACH (ft) 339 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/15/18 SCORER MDT, JKF COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Channelized previously	COVERY
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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25  TOTAL NUMBER OF SUBSTRATE TYPES: 3	HHEI Metric Points Substrate Max = 40 28
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	النبا
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
	Width
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30 20

ADDITIONAL STREAM	// INFORMATION (This Information M	ust Also be Completed):		
QHEI PERFO	ORMED? - Yes V No QHEI Sco	re (If Yes, At	tach Completed QHEI Form)	
DOWNSTRE WWH Name:	EAM DESIGNATED USE(S)		Distance from Evaluated S	tream
CWH Name:EWH Name:			Distance from Evaluated Str Distance from Evaluated Str	
	ATTACH COPIES OF MAPS, INCLUDING		_	
USGS Quadrangle Nar	me: St Clairsville	NRCS Soil Map	Page: NRCS Soil Map	Stream Order
County: Belmont		Township / City: Richl	and	
MISCELLAN	IEOUS			
Base Flow Conditions?	Y (Y/N):_Y Date of last precipitati	ion:_ <b>05/14/18</b>	Quantity: 0.36	-
Photograph Information	n: 3 photos			
Elevated Turbidity? (Y/	N): Canopy (%_open): _	100%		
Were samples collecte	d for water chemistry? (Y/N):	(Note lab sample no. or id	and attach results) Lab Numbe	er:
Field Measures: Tel	mp (°C) Dissolved Oxygen (me	pH (S.U.)	Conductivity (µmhos/o	om)
Is the sampling reach r	representative of the stream (Y/N)	If not, please explain:		
Additional comments/d	escription of pollution impacts:			
BIOTIC EVA Performed? (Y/N):  N Fish Observed? (Y/N) Frogs or Tadpoles Obs	(If Yes, Record all observations. ID number. Include appropriate  N  Voucher? (Y/N)  Salama	field data sheets from the Panders Observed? (Y/N)	al. NOTE: all voucher samples m rimary Headwater Habitat Assess  Voucher? (Y/N)	
Comments Regarding I	''	Aquatic Macroinvertebr	N N	ucher: (1/14)
DRAWII	NG AND NARRATIVE DESCRI	PTION OF STREAM	REACH (This must be c	ompleted):
	nt landmarks and other features of int		• —	•
	slope	hh-mdt-5/15	/20108-02	
FLOW -		slope		
T-Line ROW	/ Edge			T-Line ROW Edge



# **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NUMBER NH-43 RIVER BASIN 050301060702 DRAINAGE AREA (mi²)  LENGTH OF STREAM REACH (ft) 87 LAT. LONG. RIVER CODE RIVER MILE  DATE 05/15/18 SCORER MDT, JKF COMMENTS Intermittent flow regime  NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
DATE 05/15/18 SCORER MDT, JKF COMMENTS Intermittent flow regime
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS: channelized to be pond outfall
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 PERCENT TYPE PERCENT Metr
BLDR SLABS [16 pts]
BEDROCK [16 pt]  0%  Substration  FINE DETRITUS [3 pts]
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt]
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]
Total of Percentages of 5.00% (A) Substrate Percentage 100% (B) A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts] 5
COMMENTS MAXIMUM POOL DEPTH Inches 2
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull
> 4.0 meters (> 13') [30 pts]
→ 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     ✓ ≤ 1.0 m (<=3' 3") [5 pts]     ✓ Max=3
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet : 3.00
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  FLOODPLAIN QUALITY  FLOODPLAIN QUALITY
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  LR (Per Bank)  LR (Most Predominant per Bank)  LR (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  AVERAGE BANKFULL WIDTH Feet  Salou  AVERAGE BANKFULL WIDTH Feet  LR (Most Predominant per Bank)  LR (Most Predominant per Bank)  LR (Most Predominant per Bank)  Moderate 5-10m  Moderate 5-10m
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH  Feet  3.00  5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  □ RIPARIAN WIDTH □ RIPARIAN
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  Vi Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  AVERAGE BANKFULL WIDTH  Feet  13.00  5  AVERAGE BANKFULL WIDTH  Feet  13.00  L R  (Most Predominant per Bank)  L R  Most Predominant per Bank)  L R  Most Predominant per Bank)  Field  Open Pasture, Row Crop
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Narrow <5m  None  COMMENTS Residential, Park, New Field  Feet  3.00  5  AVERAGE BANKFULL WIDTH  Feet  3.00  5  AVERAGE BANKFULL WIDTH  Feet  3.00  5  Completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Conservation Tillage  Urban or Industrial  Field  Open Pasture, Row Crop  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  None  Fenced Pasture  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  AVERAGE BANKFULL WIDTH  Feet  3.00  5  AVERAGE BANKFULL WIDTH  Feet  3.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Fenced Pasture  COMMENTS FOW  Moist Channel, isolated pools, no flow (Intermittent)
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  Narrow <5m  None  Residential, Park, New Field  Fenced Pasture  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  **NOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  Open Pasture, Row Crop  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes / No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	
_	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: St Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order
	ship / City: Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	<b>05/14/18</b> Quantity: <b>0.36</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note lal	o sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders C	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual)  bbserved? (Y/N) N Voucher? (Y/N)
	OF STREAM REACH (This <u>must</u> be completed):  r site evaluation and a narrative description of the stream's location
FLOW pond  T-Line ROW Edge	wetland



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

86

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/10/2	2018-04
SITE NUMBER NH-44 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 383 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/10/18 SCORER MDT, BCR COMMENTS Perennial flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVER	COVERY
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.	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of poxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
□ □ BLDR SLABS [16 pts] □ □ SILT [3 pt] 0%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  LEAF PACK/WOODY DEBRIS [3 pts]  W  15%  FINE DETRITUS [3 pts]  0%	Substrat
COBBLE (65-256 mm) [12 pts] 30% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 0%	26
SAND (<2 mm) [6 pts]	
Total of Percentages of 65.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	30
COMMENTS MAXIMUM POOL DEPTH Inches 12	
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]	Bankful Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS OHWM: 15 ; TOB: 20 AVERAGE BANKFULL WIDTH Feet 20.00	30
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH 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	
Field —— Open Pacture Row Co	op
Narrow <5m Residential, Park, New Field D	
None Fenced Pasture Mining or Construction COMMENTS row	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	t)
Subsurface flow with isolated pools (Interstitial)  Dry channel, no water (Ephemeral)  COMMENTS_perennial	1
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 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/	100 ft)

QHEI PER		(TITIS IIITOTTIIALIOTT MAG	st Also be Completed	<u>)):</u>		
	FORMED? - Ye	s No QHEI Score	(If Yes,	Attach Complete	d QHEI Form)	
DOWNST / WWH Name: CWH Name: EWH Name:	REAM DESIGNATE	D USE(S)		Distance f	from Evaluated Stream _ rom Evaluated Stream _ rom Evaluated Stream	
	· ATTACH COPIES C	F MAPS INCLUDING	THE ENTIRE WATERS		ARLY MARK THE SITE	LOCATION
JSGS Quadrangle N		T MAT 3, INCLUDING	NRCS Soil Ma		NRCS Soil Map Strea	
Palmant	rame.			hland	NICO OOII Map Oliea	m Order _
County: Beimont	ANEOUS		Township / City			
MISCELLA Base Flow Condition	v	Date of last precipitation	n: <b>05/06/18</b>	Quantit	y: <b>0.06</b>	
Photograph Informat	ion: _3 photos					
Elevated Turbidity? (	(Y/N): <b>N</b>	Canopy (% open):	100%			
	cted for water chemis	stry? (Y/N): <b>N</b> (N	lote lab sample no. or	id. and attach re	sults) Lab Number:	
		Dissolved Oxygen (mg/l	pH (S.U.	) Con	ductivity (µmhos/cm)	
s the sampling reac	h representative of the	ne stream (Y/N)	If not, please explain:			
	·					
Additional comment	s/description of pollu	lian impagata.				
Additional comments	s/description of politic	ion impacts				
Performed? (Y/N): _ Fish Observed? (Y/N	ID numbe  Voucher?	r. Include appropriate fie	·	Primary Headwa		Manual)
Frogs or Tadpoles C	1	vodelier: (1774) N	, qualio Masionivoi c	Diales Observed	N N	Y (Y/N)
Frogs or Tadpoles C	1	N N	rquado musionivo co	biates Observed	N N	P (Y/N)
Frogs or Tadpoles C	g Biology:				nis <u>must</u> be comp	
Frogs or Tadpoles C Comments Regardin	g Biology:	RATIVE DESCRIP	TION OF STREAL	M REACH (T		eted):
Frogs or Tadpoles C Comments Regardin	g Biology:	RATIVE DESCRIP	TION OF STREAL	M REACH (T	nis <u>must</u> be comp	eted):
Frogs or Tadpoles C Comments Regardin	JING AND NARF	RATIVE DESCRIP	TION OF STREAL	M REACH (T	nis <u>must</u> be comp	eted):
DRAW Include impor	JING AND NARF	RATIVE DESCRIP	TION OF STREAL	M REACH (T	nis <u>must</u> be complete description of the stre	eted):



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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/10/20	018-02
SITE NUMBER NH-46 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 77 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/10/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC  MODIFICATIONS: channelized in manmade water runoff bar	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  PERCENT  TYPE  PERCENT	HHEI Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 15%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  D''  LEAF PACK/WOODY DEBRIS [3 pts]  0%  FINE DETRITUS [3 pts]	Substrat
☐ COBBLE (65-256 mm) [12 pts]	Max = 40
✓       GRAVEL (2-64 mm) [9 pts]       30%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	13
Title (Burning to pio)	
Bldr Slabs, Boulder, Cobble, Bedrock Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
COMMENTS OHWM: 1 ; TOB: 1 AVERAGE BANKFULL WIDTH Feet 1.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
✓       ✓	
Moderate 5-10m    Immatative rolest, Smull of Old   Urban or Industrial	on.
Narrow <5m Residential, Park, New Field J	Þ
None Fenced Pasture Mining or Construction COMMENTS	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermittent)	ı
Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral from seep	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None 1.0 2.0 3.0 3.0 5.3	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/10	00 f)
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	υ π)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	
CWH Name:EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Lansing	NRCS Soil Map Page: NRCS Soil Map Stream Order Richland
County: Belmont Town	ship / City:Richiand
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	05/06/18 Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): Note la	b sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field date voucher? (Y/N) N Salamanders C	er collections optional. NOTE: all voucher samples must be labeled with the sit a sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest fo	r site evaluation and a narrative description of the stream's location
FLOW T-Line ROW Edge	hh-mdt-5/10/20108-02  Slope  T-Line ROW Edge



### **ChieFP** Primary Headwater Habitat Evaluation Form

	2018-01
SITE NUMBER NH-47 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 273 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/10/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECO	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	ı HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]  0%  SILT [3 pt]  30%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  D  LEAF PACK/WOODY DEBRIS [3 pts]  O%  FINE DETRITUS [3 pts]  O%	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 10%	Max = 40
GRAVEL (2-64 mm) [9 pts] 35% MUCK [0 pts] 0%  SAND (<2 mm) [6 pts] 25% ARTIFICIAL [3 pts] 0%	16
- The Committee of the	
Total of Percentages of 0.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.0 m (<=3' 3") [5 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [5 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  1.00	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  EL R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  EL R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide > 10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Narrow < 5m  Residential, Park, New Field  Open Pasture, Row Circles  AVERAGE BANKFULL WIDTH  Feet  1.00  L R  (Most Predominant per Bank)  L R  Open Pasture, Row Circles  Open Pasture, Row Circle	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Width Max=30
S 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   S 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  AVERAGE BANKFULL WIDTH Feet : 1.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10 m Mature Forest, Wetland Conservation Tillage Immature Forest, Wetland Urban or Industrial  Moderate 5-10 m Residential, Park, New Field Open Pasture, Row Completed  Narrow <5 m Residential, Park, New Field Open Pasture, Row Completed  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
Solution	Width Max=30
Stream Flowing   Subsurface flow with isolated pools (Interstitial)   Subsurface flow with isolated pools (Interstitial)   Stream Flowing   Stream Flowing   Subsurface flow with isolated pools (Interstitial)   Stream Flowing   Stream Flowing   Stream Flowing   Stream Flowing   Stream Flowing   Subsurface flow with isolated pools (Interstitial)   Stream Flowing   St	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10 m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  None  COMMENTS  None  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet  1.00  Might (R) as looking downstream:  1.00  Conservation Tillage  Urban or Industrial  Open Pasture, Row Completed  Mining or Construction  COMMENTS  Dry channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral)  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0	Width Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FEET  RIPARIAN WIDTH  RIPARIAN WIDTH  FEET  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIP	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10 m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  None  COMMENTS  None  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet  1.00  Might (R) as looking downstream:  1.00  Conservation Tillage  Urban or Industrial  Open Pasture, Row Completed  Mining or Construction  COMMENTS  Dry channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral)  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  3.0	Width Max=30  5

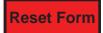
ADDITIONAL STREAM IN	FORMATION (This Information Must Also	o be Completed):		
QHEI PERFORM	MED? - Yes 🗸 No QHEI Score	(If Yes, Attac	ch Completed QHEI Forn	n)
DOWNSTREAM	DESIGNATED USE(S)			
WWH Name:			_ Distance from Evaluate	
CWH Name:			Distance from Evaluate	
EWH Name:			Distance from Evaluate	<u>-</u>
	ACH COPIES OF MAPS, INCLUDING THE EI	1		
USGS Quadrangle Name:		NRCS Soil Map Pa		Map Stream Order
County: Belmont		ship / City:Richlan	id	
MISCELLANEO	US			
Base Flow Conditions? (Y/	(N):_Y Date of last precipitation:	05/06/18	Quantity: 0.06	
Photograph Information:	3 photos			
Elevated Turbidity? (Y/N):	N Canopy (% open): 100	%		
Were samples collected fo	or water chemistry? (Y/N): N (Note la	b sample no. or id. a	nd attach results) Lab Nเ	ımber:
	(°C) Dissolved Oxygen (mg/l)	pH (S.U.)	Conductivity (μm	hos/cm)
Is the sampling reach repre	esentative of the stream (Y/N)	, please explain:		
	, ,	· I ———		
Additional comments/door	printing of pollution imports:			· · · · · · · · · · · · · · · · · · ·
Additional comments/desc	ription of pollution impacts:			
Performed? (Y/N): N Fish Observed? (Y/N) Frogs or Tadpoles Observe Comments Regarding Biole	(If Yes, Record all observations. Voucher ID number. Include appropriate field date Voucher? (Y/N) Salamanders Ced? (Y/N) Voucher? (Y/N) Aqua	a sheets from the Prin	•	
DRAWING	AND NARRATIVE DESCRIPTION	OF STREAM R	EACH (This must b	e completed):
Include important la	andmarks and other features of interest fo	r site evaluation and	d a narrative description	of the stream's location
FLOW	Slope		hh-mdt-5/10/20108-0	
T-Line ROW Edg	le .	Slope	7	T-Line ROW Edge



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

39

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)		
DOWNSTREAM DESIGNATED USE(S)		
WWH Name: Distance from Evaluated Stream		
CWH Name: Distance from Evaluated Stream		
EWH Name: Distance from Evaluated Stream		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION		
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order		
County: Belmont Township / City: Richland		
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06		
Photograph Information: 3 photos		
Elevated Turbidity? (Y/N):N Canopy (% open):30%		
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:		
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)		
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): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site		
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)		
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)		
Comments Regarding Biology:		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location		
Pasture with T-line ROW		
Ita		
Stream head Steep and Scrubby		
FLOW		
s-bcr-5/9/2018-05		
T-Line ROW Edge Steep and Scrubby		





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

23

SITE NAME/LOCATION | FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/2018-06 SITE NUMBER NH-49 RIVER BASIN 050301060704 DRAINAGE AREA (mi2) LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE DATE 05/09/18 **COMMENTS** Intermittent flow regime SCORER MDT, BCR NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 25% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 30% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 35% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 13 10% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 2 COMMENTS MAXIMUM POOL DEPTH Inches BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM: 1 ; TOB: 2 AVERAGE BANKFULL WIDTH Feet 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS row FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS intermittent SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFO	RMATION (This Information Must Also	be Completed):		
QHEI PERFORMED	O? - Yes ✓ No QHEI Score	(If Yes, Atta	ch Completed QHEI Form	)
DOWNSTREAM DE	ESIGNATED USE(S)			
			_ Distance from Evaluated	_
CWH Name:EWH Name:			<ul> <li>Distance from Evaluated</li> <li>Distance from Evaluated</li> </ul>	
	H COPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED	-	-
USGS Quadrangle Name:		NRCS Soil Map P		Map Stream Order
County: Belmont		hip / City:		
MISCELLANEOUS	<del>_</del>			
Base Flow Conditions? (Y/N):	Y Date of last precipitation:	05/06/18	Quantity: <b>0.06</b>	
Photograph Information: 3 pl			,	
Elevated Turbidity? (Y/N):	Canopy (% open): 100	%		
Were samples collected for wa	ater chemistry? (Y/N): N (Note lab	sample no. or id. a	and attach results) Lab Nur	nber:
Field Measures: Temp (°C		pH (S.U.)	Conductivity (µmh	os/cm)
Is the sampling reach represe	ntative of the stream (Y/N) Y If not,	please explain:		
Additional comments/descript	ion of pollution impacts:			
BIOTIC EVALUATI	ION			
Performed? (Y/N): N	(If Yes, Record all observations. Vouche	r collections entional	NOTE: all vouchor cample	se must be labeled with the site
renomieu: (1/14).	ID number. Include appropriate field data	•	·	
Fish Observed? (Y/N) N Frogs or Tadpoles Observed?	Voucher? (Y/N) N Salamanders O	bserved? (Y/N) Nitic Macroinvertebrat	Voucher? (Y/N) N es Observed? (Y/N)	Voucher? (Y/N)
Comments Regarding Biology	''		IN IN	
	ND NARRATIVE DESCRIPTION		-	-
include important land	marks and other features of interest for	Slope Slope	a a narrative description (	of the stream's location
<b>X</b>				
7	1	4		
a				
FLOW	PEM wetland			
T E	I Livi wettarid			
1 1			hh-bcr-5/9/2018-06	T-Line ROW Edge
IN 📆				1000
4	Slope			
	T-Line ROW Edge			ı
	PHWH I	Form Page - 2		



### **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/2	018-07
SITE NUMBER NH-50 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 222 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERING RECOV	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]  0%  SILT [3 pt]  50%  100  100  100  100  100  100  100	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  O%  LEAF PACK/WOODY DEBRIS [3 pts]  O%  FINE DETRITUS [3 pts]  O%	Substrat
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts] 20% MUCK [0 pts] 0%  SAND (<2 mm) [6 pts] 20% ARTIFICIAL [3 pts] 0%	16
- Auto ( 2 mm) [o pto]	
Total of Percentages of 0.00% (A) Substrate Percentage Check 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:   12   TOTAL NUMBER OF SUBSTRATE TYPES:   4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	_
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width Max=30
	Width
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  1.50	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Ri	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Place of the stress o	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 1 ; TOB: 1.5   AVERAGE BANKFULL WIDTH   Feet   : 1.50      This information must also be completed     RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 ; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ♣NOTE: River Left (L) and Right (R) as looking downstream ♣  RIPARIAN WIDTH  L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Immature Forest, Shrub or Old  Narrow <5m  None  Residential, Park, New Field  Open Pasture, Row C  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN WIDTH  ERPARIAN WIDTH  FLOODPLAIN QUALITY  NoTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Narrow <5m  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  Check ONLY one box):  None	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  MoTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Mide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row C  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN WIDTH  ERPARIAN WIDTH  FLOODPLAIN QUALITY  NoTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Narrow <5m  None  COMMENTS Within maintained T-line ROW  FLOW REGIME (At Time of Evaluation)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  Check ONLY one box):  None	Width Max=30  5

OHEI PERFORMED? - Yes No OHEI Score (If Yes, Atlach Comprehed QHEI Form)  DOWNSTREAM DESIGNATED USE(S)  OWN H Name: Distance from Evaluated Stream  Distance from Evaluation  Distance from Evaluated Stream  Distance from Evaluation  Distance from Evaluated Stream  Distance from Evaluation  Distance from Evaluation  Distance from Evaluation  Distance from Evaluation  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance fro	ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
CWH Name:    CWH Name:   Distance from Evaluated Stream	QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
CWH Name:  EWH Name:  Distance from Evaluated Stream  Distance	DOWNSTREAM DESIGNATED USE(S)	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name. Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order  County: Belmont Township / City: Richland  MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06  Photograph Information: 3 photos  Elevated Turbidity? (Y/N): N Canopy (% open): 100%  Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number.  Field Measures: Temp ("C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations, Voucher collections optional. NOTE: all voucher samples must be labeled with the site 10 number. include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Solubly over channel and within T-Line ROW		
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name; Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order  County: Belmont Township / City: Richland  MISCELLANEOUS  Base Flow Conditions? (Y/N); V Date of last precipitation: 05/06/18 Quantity: 0.06  Photograph Information: 3 photos  Elevated Turbidity? (Y/N); N Canopy (% open): 100%  Were samples collected for water chemistry? (Y/N); N (Note lab sample no. or id. and attach results) Lab Number.  Field Measures: Temp ("C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the slit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Include Important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubey over channel and within T-Line ROW		
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order  Countly: Belmont Township / City: Richland  MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: 05/06/18 Quantity: 0.06  Photograph Information: 3 photos  Elevated Turbidity? (Y/N): N Canopy (% open): 100%  Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (*C) Dissolved Oxygen (mgn) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site in D number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N): N Voucher? (Y/N): N Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): N Outher? (Y/N): N Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): N N N N N N N N N N N N N N N N N N		<del></del>
MISCELLANEOUS Base Flow Conditions? (Y/N): V Date of last precipitation: 05/06/18 Quantity: 0.06 Photograph Information: 3 photos Elevated Turbidity? (Y/N): N Canopy (% open): 100% Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the slb ID number. Include appropriate field data sheets from the Primary Headwater Habital Assessment Manual) Fish Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Ourcher? (Y/N) N		ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
MISCELLANEOUS  Base Flow Conditions? (Y/N); Y Date of last precipitation: 05/06/18 Quantity: 0.06  Photograph Information: 3 photos  Elevated Turbidity? (Y/N): N Canopy (% open): 100%  Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:  Field Measures: Temp (*C Dissolved Oxygen (mg/l)) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of note of the stream (Y/N) N (If Yes, Record all observations. Voucher (Y/N) N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site of the stream (Y/N) N (If Yes, Record all observations. Voucher (Y/N) N	USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
Base Flow Conditions? (Y/N):    Date of last precipitation:    Display to the stream (Y/N):    Date of last precipitation:    Display to the stream (Y/N):    N	County: Belmont Towns	ship / City:Richland
Photograph Information:    3 photos	MISCELLANEOUS	
Elevated Turbidity? (Y/N):    N	Base Flow Conditions? (Y/N):_Y Date of last precipitation:	05/06/18 Quantity: 0.06
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:  Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N), N Voucher? (Y/N), N Salamanders Observed? (Y/N), N Voucher? (Y/N), N Voucher? (Y/N), N Voucher? (Y/N), N Aquatic Macroinvertebrates Observed? (Y/N), N Voucher? (Y/N),	Photograph Information: 3 photos	
Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N) If not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): N (if Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Include Important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Scrubby over channel and within T-Line ROW  Grassy swale  Grassy swale	Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Additional comments/description of pollution impacts:  BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N N Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale  UM 11 Protection of pollution impacts:  BIOTIC EVALUATION    Voucher samples must be labeled with the site of primary Headwater Habitat Assessment Manual)    Voucher? (Y/N) N	Were samples collected for water chemistry? (Y/N): Note la	b sample no. or id. and attach results) Lab Number:
Additional comments/description of pollution impacts:  BIOTIC EVALUATION  Performed? (Y/N):  (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N)  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)  Aquatic Macroinvertebrates Observed? (Y/N)  N  Voucher? (Y/N)  N  Voucher? (Y/N)  N  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale	Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site in include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc	Is the sampling reach representative of the stream (Y/N) Y If not	, please explain:
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site in include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc		
Performed? (Y/N):    N	Additional comments/description of pollution impacts:	
Performed? (Y/N):    N		
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NO It: all vouchers samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N)	BIOTIC EVALUATION	
Fish Observed? (Y/N) N Voucher? (Y/N) N	Performed? (Y/N): (If Yes, Record all observations. Vouche	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale		
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale	Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqua	tic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale	Comments Regarding Biology:	
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale		
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  Scrubby over channel and within T-Line ROW  Grassy swale	DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
Grassy swale  (() () () () () ()		· —
Grassy swale		:
	Scru	ibby over channel and within T-Line ROW
	Gracev swale	·
s-bcr-5/9/2018-07		
	FLOW	
i i i i i i i i i i i i i i i i i i i		
T-Line ROW Edge		T-Line ROW Edge





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

	18-08
SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/20  SITE NUMBER NH-51 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 415 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC MODIFICATIONS:	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.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BLDR SLABS [16 pts]	FOIII
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0%	Substrat Max = 4
COBBLE (65-256 mm) [12 pts]	
☐ GRAVEL (2-64 mm) [9 pts] ☐ MUCK [0 pts] ☐ 0% ☐ ARTIFICIAL [3 pts] ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0% ☐ 0	8
Total of Percentages of 10 00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock 100%  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3  TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 3	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
<pre></pre>	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS OHWM: 1.5 ; TOB: 3 AVERAGE BANKFULL WIDTH Feet : 3.00	5
This information must also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆  RIPARIAN WIDTH FLOODPLAIN QUALITY	
LR (Per Bank) LR (Most Predominant per Bank) LR	
Wide >10m	
Wide >10m  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Field  Open Pasture Pow Crr	ac
Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Narrow <5m  Mature Forest, Wetland  Conservation Tillage  Urban or Industrial  Open Pasture, Row Cro	pp
Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Open Pasture Pow Crr	op -
Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Narrow <5m  None  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Open Pasture, Row Cro  Mining or Construction	op
Wide >10m	-
Mature Forest, Wetland	-
Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Immature Forest, Shrub	-

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Distance from Evaluated Stream  CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N):N Canopy (% open):90%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
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): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Scrubby and steep
Scrubby and steep  Scrubby and steep
T-Line ROW Edge T-Line ROW Edge





### ChieFPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/0	/2018-09
SITE NUMBER NH-52 RIVER BASIN 050301060704 DRAINAGE AREA (n	i²)0.07
LENGTH OF STREAM REACH (ft) 483 LAT. LONG. RIVER CODE RIVER MIL	E
DATE 05/09/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for I	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO MODIFICATIONS:	RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE box	s
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI   Metric
TYPE         PERCENT         TYPE         PERCENT           □         □         BLDR SLABS [16 pts]         0%         □         ✓         SILT [3 pt]         25%	Points
BOULDER (>256 mm) [16 pts]	Substrate
□       BEDROCK [16 pt]       0%       □       FINE DETRITUS [3 pts]       0%         □       COBBLE (65-256 mm) [12 pts]       15%       □       CLAY or HARDPAN [0 pt]       10%	Max = 40
GRAVEL (2-64 mm) [9 pts] 35% MUCK [0 pts] 0%	40
SAND (<2 mm) [6 pts] 10% ARTIFICIAL [3 pts] 0%	18
Total of Percentages of 20.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dept
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IWIAX = 50
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH Inches 6	
COMMENTS MAXIMOM FOOL DEFINITIONS	
	<b></b>
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]	Bankfull Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  AVERAGE BANKFULL WIDTH Feet  6.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstreams  RIPARIAN WIDTH  FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ∴ NOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  ER (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ∴ NOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10m  Moderate 5-10m  Moderate 5-10m  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  S NOTE: River Left (L) and Right (R) as looking downstream:  NOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Most Predominant per Bank)  I R (Most Predominant per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  S 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.0 m (<=3' 3") [5 pts]  S 1.0 m (<=3' 3	Width Max=30 20
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 2 ; TOB: 6     AVERAGE BANKFULL WIDTH   Feet	Width Max=30 20 c
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  S 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.0 m (<=3' 3") [5 pts]  S 1.0 m (<=3' 3	Width Max=30 20 c
> 4.0 meters (> 13') [30 pts]	Width Max=30 20 c
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  PLOODPLAIN QUALITY  PLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow < 5m  Residential, Park, New Field  Open Pasture, Row  COMMENTS FOW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermined)	Width Max=30  20  c e c Crop cion
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  A (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Narrow <5 m  Residential, Park, New Field  None  COMMENTS OHWM: 2; TOB: 6  AVERAGE BANKFULL WIDTH  Feet  6.0  L R  (Most Predominant per Bank)  L R  Most Predominant per Bank)  Field  Open Pasture, Roy  None  COMMENTS Fow  Fenced Pasture  Mining or Construct  COMMENTS Fow  Flow REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30  20  c e c Crop cion
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  ELOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  None  COMMENTS residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  **NOTE: River Left (L) and Right (R) as looking downstream:  ##AVERAGE BANKFULL WIDTH  #	Width Max=30  20  c e c Crop cion
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m Mature Forest, Wetland  Moderate 5-10m Moderate 5-10m Pield  Narrow <5m Residential, Park, New Field  None  COMMENTS OHE REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  COMMENTS (Check ONLY one box):  None  1.0  COMMENTS (Check ONLY one box):  None  1.0  Check ONLY one box):  None	Width Max=30  20  c e c Crop cion
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  None  COMMENTS OHE Residential, Park, New Field  None  COMMENTS OHE Residential, Park, New Field  Fenced Pasture  COMMENTS OHE Residential, Park, New Field  Fenced Pasture  COMMENTS OHE Residential, Isolated pools, no flow (Intermit Dry channel, isolated pools, no flow (Intermit Dry channel, no water (Ephemeral)  SINUOSITY (Number of bends per 61 m (200 ft) of channel)    Check ONLY one box):	Width Max=30  20  c e c Crop cion
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2 ; TOB: 6  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m Mature Forest, Wetland  Moderate 5-10m Moderate 5-10m Pield  Narrow <5m Residential, Park, New Field  None  COMMENTS OHE REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  COMMENTS (Check ONLY one box):  None  1.0  COMMENTS (Check ONLY one box):  None  1.0  Check ONLY one box):  None	Width Max=30  20  ce conclusion  tent)

ADDITIONAL STREAM INFORMATION (This Information Must Also	o be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)			
DOWNSTREAM DESIGNATED USE(S)			
WWH Name:	Distance from Evaluated Stream		
CWH Name:EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream		
	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION		
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order		
	ship / City:		
MISCELLANEOUS			
Base Flow Conditions? (Y/N):Y Date of last precipitation:	05/06/18 Quantity: 0.06		
Photograph Information: 3 photos			
Elevated Turbidity? (Y/N): N Canopy (% open): 100	0%		
Were samples collected for water chemistry? (Y/N): N (Note la	ab sample no. or id. and attach results) Lab Number:		
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)		
Is the sampling reach representative of the stream (Y/N) Y If not	t, please explain:		
Additional comments/description of pollution impacts:			
ID number. Include appropriate field dat Fish Observed? (Y/N)  N  Salamanders O	er collections optional. NOTE: all voucher samples must be labeled with the site ta sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N) N Voucher? (Y/		
Comments Regarding Biology:			
	NOF STREAM REACH (This <u>must</u> be completed):		
Include important landmarks and other features of interest fo	or site evaluation and a narrative description of the stream's location		
hh-bcr-5/9/2018-09  T-Line ROW Edge	T-Line ROW Edge		
. 200 . 6 . 209	'		

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### ChicEPA Primary Headwater Habitat Evaluation Form

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Richland
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 80%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
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): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site.  ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Scrubby and steep
FLOW Scrubby and steep
[s-bcr-5/9/2018-10]
T-Line ROW Edge





### ChieFPA Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/2	2018-11
SITE NUMBER NH-54 RIVER BASIN 050301060704 DRAINAGE AREA (mi²)	0.02
LENGTH OF STREAM REACH (ft) 287 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
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  PERCENT  TYPE  PERCENT	HHEI   Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  BEDROCK [16 pt]  D  LEAF PACK/WOODY DEBRIS [3 pts]  0%  FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 20% CLAY or HARDPAN [0 pt] 10%	Max = 40
GRAVEL (2-64 mm) [9 pts] 50% MUCK [0 pts] 0%	26
SAND (<2 mm) [6 pts] 5% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 20.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 2	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.0 m (<=3' 3") [5 pts] <p></p>	Bankfull Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  ✓ > 1.0 m (<=3' 3") [5 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  ✓ > 1.0 m (<=3' 3") [5 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  4.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  AVERAGE BANKFULL WIDTH Feet  ### 4.00  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   ≤ 1.0 m (<=3' 3") [5 pts]   ≤ 1.0	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  L R (Per Bank)    V   Wide > 10m	Width Max=30
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 2 ; TOB: 4     AVERAGE BANKFULL WIDTH   Feet	Width Max=30  15
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  L R (Per Bank)    V   Wide > 10m	Width Max=30  15
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Fenced Pasture  Mining or Construction	Width Max=30  15
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Fow  Flow REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermitter)  Moist Channel, isolated pools, no flow (Intermitter)	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m Mature Forest, Wetland  Moderate 5-10 m V V Immature Forest, Shrub or Old  Narrow <5m Residential, Park, New Field  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  COMMENTS (Stream Flow):  AVERAGE BANKFULL WIDTH  Feet  4.00  AVERAG	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  None  COMMENTS OHEM REGIME (At Time of Evaluation)  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):    Check ONLY one box):   Check ONLY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2; TOB: 4  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m Mature Forest, Wetland  Moderate 5-10 m V V Immature Forest, Shrub or Old  Narrow <5m Residential, Park, New Field  None  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  COMMENTS (Stream Flow):  AVERAGE BANKFULL WIDTH  Feet  4.00  AVERAG	Width Max=30  15  Crop  ntt)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Towns	nip / City:Richland
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	<b>05/06/18</b> Quantity: <b>0.06</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 1009	6
Were samples collected for water chemistry? (Y/N): N (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
, ,	
Additional comments/description of pollution impacts:	
Additional comments/description of politicon impacts.	
ID number. Include appropriate field data Fish Observed? (Y/N)  Voucher? (Y/N)  Salamanders O	collections optional. NOTE: all voucher samples must be labeled with the sit sheets from the Primary Headwater Habitat Assessment Manual)  pserved? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION	OF STREAM REACH (This must be completed):
	site evaluation and a narrative description of the stream's location
hh-bcr-5/9/2018-11	Slope
FLOW	
T-Line ROW Edge	
TH)	
DHWH E	orm Page - 2



### **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Kn		Field ID: s-bcr-05/09/2018-12
SITE NUMBER NH-55	RIVER BASIN 050301060704	DRAINAGE AREA (mi²)
LENGTH OF STREAM REACH (ft) LAT	LONG. RIVER C	ODERIVER MILE
DATE 05/09/18 SCORER MDT, BCR CO	OMMENTS <b>Ephemeral flow regime</b>	
NOTE: Complete All Items On This Form - Refer	to "Field Evaluation Manual for Ohio	's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANDOLFICATIONS:  T-Line RoW, Trees cleared within maintained R	ANNEL RECOVERED RECOVER	RING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of	substrate present. Check ONLY two predo	minant substrate TYPE boxes
(Max of 32). Add total number of significant substra	, ,	I Mot
TYPE PERCENT BLDR SLABS [16 pts] 0%	TYPE SILT [3 pt]	PERCENT Poil
BOULDER (>256 mm) [16 pts]	LEAF PACK/WOODY DEB	Cubat
BEDROCK [16 pt] 0%	FINE DETRITUS [3 pts]	0% Subst
COBBLE (65-256 mm) [12 pts] 30% GRAVEI (2-64 mm) [9 pts] 25%	CLAY or HARDPAN [0 pt]	0%
GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] 20%	☐☐ MUCK [0 pts] ☐☐ ARTIFICIAL [3 pts]	0%
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage 100%	(B) A + I
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TY		SUBSTRATE TYPES: 5
2. Maximum Pool Depth (Measure the maximum p		
evaluation. Avoid plunge pools from road culverts of > 30 centimeters [20 pts]	or storm water pipes) (Check <i>ONLY</i> one be > 5 cm - 10 cm [15 pts]	ox):
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST C	HANNEL [0 pts] 15
COMMENTS	MAXIMUM POOL D	EPTH Inches 3
3. BANK FULL WIDTH (Measured as the average of		
> 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' ≤ 1.0 m (<=3' 3") [5 pts]	8") [15 pts] Wid
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		
COMMENTS OHWM: 2; TOB: 3	AVERAGE BANKF	ULL WIDTH Feet 3.00 5
TI RIPARIAN ZONE AND FLOODPLAIN QUA	his information must also be completed ALITY ☆NOTE: River Left (L) and Right	(R) as looking downstream ☆
	PLAIN QUALITY	(1.9 a.o. 1.00111119 a.o. 11.1011
L R (Per Bank) L R  Wide >10m	(Most Predominant per Bank) L Mature Forest, Wetland	R Consequation Tillege
	Immature Forest, Wetland Immature Forest, Shrub or Old	Conservation Tillage
Moderate 5-10m	Field	Urban or Industrial
Narrow <5m	Residential, Park, New Field	Open Pasture, Row Crop
None COMMENTS Wide maintained t-line R	Fenced Pasture	Mining or Construction
		<u> </u>
FLOW REGIME (At Time of Evaluation) (C  Stream Flowing		lated pools, no flow (Intermittent)
Subsurface flow with isolated pools (Interstiti		,
COMMENTS Ephemeral		
SINUOSITY (Number of bends per 61 m (20		
None 1.0 ✓ 0.5 1.5	2.0 2.5	3.0 >3
	<u>—</u>	_ <b>_</b>
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate	derate (2 ft/100 ft) Moderate to Seve	ere Severe (10 ft/100 ft)
_ · · ·	· · · · · · · · · · · · · · · · · · ·	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ch Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	_ Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map P	age: NRCS Soil Map Stream Order
County: Belmont Township / City: Richlan	nd
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18	Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 80%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. a	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prince Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	mary Headwater Habitat Assessment Manual)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	EACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation an Stream head	d a narrative description of the stream's location  s-bcr-5/9/2018-11
FLOW	
s-bcr-5/9/2018-12  T-Line ROW Edge	
	7 (P)



### **ChieFP** Primary Headwater Habitat Evaluation Form

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/20	18-01
SITE NUMBER NH-56 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 140 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Cleared right bank riparian	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] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  9  TOTAL NUMBER OF SUBSTRATE TYPES: 5	HHEI Metric Points Substrate Max = 40
	Deal Danth
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	IVIAX=30
COMMENTS OHWM: 1 AVERAGE BANKFULL WIDTH Feet : 2.00	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	-
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS_ephemeral  Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	-
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None 1.0 2.0 3.0 3.0 3.0 3.0 3.0 3.0	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)



### **ChieFP** Primary Headwater Habitat Evaluation Form

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

65

Stream NH-57

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-05/09/	2018-02
SITE NUMBER NH-57 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 723 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS:	COVERY
<ol> <li>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 &amp; B.</li> <li>TYPE</li> <li>PERCENT</li> <li>TYPE</li> </ol> PERCENT	HHEI   Metric
TYPE         PERCENT         TYPE         PERCENT           BLDR SLABS [16 pts]         0%         SILT [3 pt]         15%           BOULDER (>256 mm) [16 pts]         0%         LEAF PACK/WOODY DEBRIS [3 pts]         0%	Points
BEDROCK [16 pt] 10% FINE DETRITUS [3 pts] 0%	Substrate Max = 40
COBBLE (65-256 mm) [12 pts] 15% CLAY or HARDPAN [0 pt] 0%	Wax = 40
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%	20
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage 100%	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH Inches 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	IVIAX=30
COMMENTS OHWM: 3; TOB: 6 AVERAGE BANKFULL WIDTH Feet : 6.00	20
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY  L. D. (Mant Production of the P	
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	
Field  Narrow <5m  Residential, Park, New Field  Open Pasture, Row (	Crop
None Fenced Pasture Mining or Construction	ın
COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing  Moist Channel, isolated pools, no flow (Intermitte  Subsurface flow with isolated pools (Interstitial)  Dry channel, no water (Ephemeral)	nt)
COMMENTS_Intermittent	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe	t/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Complete	eted):
QHEI PERFORMED? - Yes No QHEI Score (If Ye	es, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATE	
Puoinocoburg	I Map Page: NRCS Soil Map Stream Order
Delmont	Richland
Township / Oity	
MISCELLANEOUS  Page Flow Conditions? (V/N): Y  Date of last precipitation: 05/06/18	3 Quantity: 0.06
	Quantity: U.U6
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): _ N Canopy (% open): _ 90%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no.	. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S	S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream $(Y/N)$ If not, please expl	ain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from  Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders Observed? (Y/N)	optional. NOTE: all voucher samples must be labeled with the site in the Primary Headwater Habitat Assessment Manual)  (/N) N Voucher? (Y/N) N
DRAWING AND NARRATIVE DESCRIPTION OF STRE	EAM REACH (This must be completed):
Include important landmarks and other features of interest for site evalua	
N Scrubby and steep  PLOW	
Scrubby and steep	T-Line ROW Edge
T-Line ROW Edge	PEM Wetland
PHWH Form Page	- 2



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

SITE NAME/LOCATION FirstEnergy Hollow	/ay-Knox 138kV	Transmission Line	Field ID: s-l	ocr-05/09/2018-0	03
SITE NUMBER NH	-58 RIVER E	ASIN 050301061206	DRAINAGE	AREA (mi²)	
				RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR	COMMENTS _	phemeral flow regi	me		
NOTE: Complete All Items On This Form -	Refer to "Field Ev	aluation Manual for C	hio's PHWH Strea	ms" for Instructio	ons
STREAM CHANNEL NONE / NATU NODIFICATIONS: cleared riparian, within t-line ROW	RAL CHANNEL	RECOVERED RECO	OVERING RECEN	T OR NO RECOVER	RY
SUBSTRATE (Estimate percent of every					
(Max of 32). Add total number of significant TYPE PER	t substrate types found RCENT TYPE	d (Max of 8). Final metric s		RCENT Me	HHEI etric
BLDR SLABS [16 pts]	)%	SILT [3 pt]	3	- PC	oint
	0% 0%	LEAF PACK/WOODY FINE DETRITUS [3 pt		5% 0% Sub	bstrat
	0%	CLAY or HARDPAN [			ax = 4
	0%	MUCK [0 pts]		0%	17
SAND (<2 mm) [6 pts]	5%	ARTIFICIAL [3 pts]		0%	17
Total of Percentages of 20.	.00% <sup>(A)</sup>	Substrate Percentage Check 100	)%	(B) A	\ + B
Bldr Slabs, Boulder, Cobble, Bedrock  CORE OF TWO MOST PREDOMINATE SUBSTR	RATE TYPES: 12		OF SUBSTRATE TYP	PES: 5	
. Maximum Pool Depth (Measure the max					ol Dep
evaluation. Avoid plunge pools from road c > 30 centimeters [20 pts]	ulverts or storm water	pipes) (Check <i>ONLY</i> o > 5 cm <b>-</b> 10 cm [15 pt	,	Ma	ax = 30
> 22.5 - 30 cm [30 pts]		< 5 cm [5 pts]			4 =
> 10 - 22.5 cm [25 pts]		NO WATER OR MOI	ST CHANNEL [0 pts]	1	15
COMMENTS		MAXIMUM PO	OL DEPTH Inches	4	
BANK FULL WIDTH (Measured as the av	verage of 3-4 measur	ements) (Check	ONLY one box):	Ba	ankful
> 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 ≤ 1.0 m (<=3' 3") [5 pt			Vidth ax=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		≥ 1.0 m ( 1–0 0 ) [0 pt	<b>0</b> ]		———
COMMENTS OHWM: 1.5 ; TOB: 3		AVERAGE BA	NKFULL WIDTH Feet	3.00	5
RIPARIAN ZONE AND FLOODPLA		on <u>must</u> also be comple IOTE: River Left (L) and F		wnotroom -^z	
RIPARIAN WIDTH	FLOODPLAIN QUAL		right (IV) as looking do	WIISHEAIII A	
L R (Per Bank)		ominant per Bank)	L R		
✓ Wide >10m		est, Wetland forest, Shrub or Old		ration Tillage	
Moderate 5-10m	Field			r Industrial	
Narrow <5m	Residential	, Park, New Field	Open Pa	asture, Row Crop	
None COMMENTS row	Fenced Pas	sture	Mining o	or Construction	
FLOW REGIME (At Time of Evaluation Stream Flowing	ation) (Check ONLY o		I, isolated pools, no flo	w (Intermittent)	
Subsurface flow with isolated pools	(Interstitial)		no water (Ephemeral)	,	
COMMENTS_ephemeral					
SINUOSITY (Number of bends per None			ox):		
0.5	1.0 1.5	2.0 2.5	3.0 >3		
STREAM GRADIENT ESTIMATE					
Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft	) Moderate to	Severe	Severe (10 ft/100 ft)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	,
WWH Name: Distance from Evaluated Stream	-
CWH Name: Distance from Evaluated Stream	
EWH Name: Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order	
County: Belmont Township / City: Richland	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 05/06/18 Quantity:_ 0.06	
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 90%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)	]_
Is the sampling reach representative of the stream (Y/N) If not, please explain:	_
Additional comments/description of pollution impacts:	=
BIOTIC EVALUATION	
N.	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)	; site
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)	
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)	
Comments Regarding Biology:	╗
	_
	_
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):	_
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	
Steep and Scrubby =	
PEM Wetland	
FLOW	
5-001-3/8/2010-03	
$\sqrt{=} \times \times = /$	
T-Line ROW Edge  T-Line ROW Edge  T-Line ROW Edge	





### **ChieFP** Primary Headwater Habitat Evaluation Form

NH 50	018-04
SITE NUMBER NH-59 RIVER BASIN DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 429 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/09/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL	COVERY
4 CURCIDATE (Estimate represent of growth was of substrate respond Charle ON View and device the table TVDE	
<ol> <li>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 &amp; B.</li> </ol>	HHE
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 20% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-64 mm) [9 pts]	16
SAND (<2 mm) [6 pts] 20% ARTIFICIAL [3 pts] 0%	
Total of Percentages of 20.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	
	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  AVERAGE BANKFULL WIDTH Feet  1.50  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ☆NOTE: River Left (L) and Right (R) as looking downstream☆	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1; TOB: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BANKFULL WIDTH  Feet  1.50  L R (Most Predominant per Bank)  L R	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Conservation Tillage  RIPARIAN Wide >10m  Moderate 5-10m  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BANKFULL WIDTH  Feet  1.50  L R  (Not Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage  Immature Forest, Shrub or Old  Urban or Industrial	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Moderate 5-10m  Narrow <5m  Narrow <5m  None  AVERAGE BANKFULL WIDTH  FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  (Most Predominant per Bank)  L R (Most Predominant per Bank)  Field  Open Pasture, Row C  Mining or Construction	5 S
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BANKFULL WIDTH  Feet  1.50  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  I R (Most Predominant per Bank)  Mature Forest, Wetland  Wide >10m  Moderate 5-10m  Residential, Park, New Field  Open Pasture, Row C	5 S
COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  Vide >1.5 m  AVERAGE BANKFULL WIDTH  FEOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Wide T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	5 Top
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10  Mature Forest, Wetland  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  None  Residential, Park, New Field  None  COMMENTS Wide T-line ROW  Mining or Construction	5 Top
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  Vide >10m Mature Forest, Wetland  Moderate 5-10m  None  None  COMMENTS Wide T-line ROW  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BANKFULL WIDTH  Fee	5 Top
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴  RIPARIAN WIDTH  ↓ R (Per Bank)  ↓ R (Most Predominant per Bank)  ↓ R (Most Predominant per Bank)  ↓ Wide >10m  Moderate 5-10m  ✓ Mature Forest, Shrub or Old  ☐ Moderate 5-10m  ☐ Narrow <5m  ☐ Residential, Park, New Field  ☐ None  ☐ COMMENTS Wide T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  ☐ COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	5 Top
COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY &NOTE: River Left (L) and Right (R) as looking downstream & RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Wide T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None  1.0  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BAN	5 Top
COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  None  COMMENTS Wide T-line ROW  FLOW REGIME (At Time of Evaluation)  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  None  1.0  COMMENTS WIDET  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BANKFULL WIDTH  F	5 Top
COMMENTS OHWM: 1; TOB: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY &NOTE: River Left (L) and Right (R) as looking downstream & RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Wide T-line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None  1.0  AVERAGE BANKFULL WIDTH  Feet  1.50  AVERAGE BAN	5 5 top

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Mead
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 90%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
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): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Steep and Scrubby
S-bcr-5/9/2018-04
Steep and Scrubby
T-Line ROW Edge
T-Line ROW Edge





# ChicEPA Primary Headwater Habitat Evaluation Form

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

NUL 00	018-01
SITE NUMBER NH-60 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 187 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING:  appears to have some impact from line construction years ago	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  1. SUBSTRATE (Percentage types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  SILT [3 pt]  60%  LEAF PACK/WOODY DEBRIS [3 pts]  O%  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  Substrate Percentage  (B)  Check  TOTAL NUMBER OF SUBSTRATE TYPES: 5	HHEI Metric Points Substrate Max = 40  8
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 3 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m (-1.5 m (> 3' 3" - 4' 8") [15 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30  5
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1 TOB: 4.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow < 5m  Residential, Park, New Field  None  S 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH  Feet  1.00  L R (ONST Left (L) and Right (R) as looking downstream A left (R) as	Width Max=30
S 1.0 m (< 9' 7" - 13') [25 pts]   S 1.0 m (< = 3' 3") [5 pts]	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  VWWH Name: CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: MEAD
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)  If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  [hh-mdt-5/8/2018-01]  [FLOW]  [Flow]
N









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

17

SITE NAME/LOCATION | FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/2018-02 SITE NUMBER NH-61 RIVER BASIN 050301031206 DRAINAGE AREA (mi2) 523 LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE DATE 05/08/18 **COMMENTS** Ephemeral flow regime SCORER MDT, BCR NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL **MODIFICATIONS:** appears to have some impact from line construction years ago SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric **TYPE** PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 60% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% Substrate 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 4025% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 10% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 5% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 2 COMMENTS MAXIMUM POOL DEPTH Inches BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): Width > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS OHWM: 1.5 AVERAGE BANKFULL WIDTH Feet 2.00 This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH **FLOODPLAIN QUALITY** R (Per Bank) R (Most Predominant per Bank) Wide >10m Mature Forest. Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture Mining or Construction None COMMENTS row FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS ephemeral SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 0.5 15 >3 STREAM GRADIENT ESTIMATE ✓ Moderate to Severe Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:EWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream
USGS Quadrangle Name: Businessburg  NRCS Soil Map F	
D. I. C. MEAD	
County Township / City	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18	Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	NOTE: all vaucher camples must be labeled with the site
ID number. Include appropriate field data sheets from the Pri	•
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) N	Voucher? (Y/N) N
riogs of radpoles Observed? (17/N) N Voucher? (17/N) N Aquatic Macroinvertebral	tes Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation an	d a narrative description of the stream's location
Slope hh-mdt-5/8/2018-02	
FLOW	
T-Line ROW Edge	
M /	
1 4	

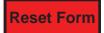


# **ChieFP** Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08	2018-03
SITE NUMBER NH-62 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 234 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS: Appears to have some impact from line construction years ago	ECOVERY
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.	HHEI   Metric
TYPE         PERCENT         TYPE         PERCENT           □ □ □ □ BLDR SLABS [16 pts]         0%         ✓ □ SILT [3 pt]         60%	Points
BOULDER (>256 mm) [16 pts]	Substrate
BEDROCK [16 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts] 10% MUCK [0 pts] 0%	7
SAND (<2 mm) [6 pts]	
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  3 Check 100%  TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  1.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10m  Moderate 5-10m  Moderate 5-10m  Noderate 5-10m	Width Max=30
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 1	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Moderate 5-10m  Narrow <5m  P 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  1.00  AVERAGE BANKFULL WIDTH  Feet  L NO  AVERAGE BANKFULL WIDTH  AND  AVERAGE BANKFULL WIDTH  FEET  L NO  AVERAGE BANKFULL WIDTH  AND  AVERAGE BANKFULL WIDTH  FEET  L NO  AVERAGE BANKFULL WIDTH  AND  AVERAGE BAN	Width Max=30
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 1	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermittee	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet : 1.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts]   > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  L R (Per Bank)  Wide >10 Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  None  Residential, Park, New Field  None  COMMENTS Fenced Pasture  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts]   > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed)	<u>):</u>
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: _	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	TED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Ma	p Page: NRCS Soil Map Stream Order
County: Belmont Township / City: MEA	AD
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18	Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
	d and attack assults V als Numbers
	d. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	
Is the sampling reach representative of the stream (Y/N) If not, please explain:_	
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N)	N Voucher? (Y/N) N N
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinverteb	brates Observed? (Y/N) N Voucher? (Y/N)
Confinence Regarding Biology.	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation	· —
include important fandinaries and other reactives of interest for site evaluation	and a narrative description of the stream's location
Slope	
FLOW Slope	
T-Line ROW Edge	
1-Line NOW Edge	
N /	





SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/	2018-04
SITE NUMBER NH-63 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 979 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS: appears to have some impact from line construction years ago	COVERY
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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Bldr Slabs, Boulder, Cobble, Bedrock  TOTAL NUMBER OF SUBSTRATE TYPES.	HHEI Metric Points Substrate Max = 40  14
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
<ul> <li>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):</li> <li>&gt; 30 centimeters [20 pts]</li> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS OHWM: 3.5 TOB: 4.5 AVERAGE BANKFULL WIDTH Feet : 4.50	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  PLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Immature Forest, Shrub or Old  Narrow <5m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS intermittent  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0  >3.0	n 
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft	/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  / WWH Name: Distance from Evaluated Stream  CWH Name: Distance from Evaluated Stream  EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Mead
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)  If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Slope
FLOW  hh- mdt-5/8/2018-04  T-Line ROW Edge
N

Save as pdf



# ChicEPA Primary Headwater Habitat Evaluation Form

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

44
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Stream NH-64

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/2	018-04 <b>±</b>
SITE NUMBER NH-64 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 979 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC MODIFICATIONS: appears to have some impact from line construction years ago	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of  20 00% (A)  Substrate Percentage 1009/  Substrate Percentage 1009/  Substrate Percentage 1009/  Substrate Percentage 1009/  (B)	HHEI Metric Points Substrate Max = 40
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 5	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX = 50
> 22.5 - 30 cm [30 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 10	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS OHWM: 3.5 TOB: 4.5 AVERAGE BANKFULL WIDTH Feet : 4.50	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  Residential, Park, New Field  This information must also be completed  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R (Conservation Tillage Immature Forest, Shrub or Old Immature F	op -
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS_intermittent  SINUACITY (Number of bonds per 64 m (200 ft) of shappel) (Check ONLY and box):	)
SINUOSITY (Number of bends per 61 m (200 ft) of channel)         (Check ONLY one box):           None         1.0           0.5         1.5           2.5         3.0           3.0           3.0           3.0           3.0           3.0           3.0           3.0           3.0           3.0           3.0	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/10	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream _
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Mead
MISCELLANEOUS
Base Flow Conditions? (Y/N):_Y Date of last precipitation:05/06/18Quantity:0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Vouc
Comments Regarding Biology:
<del></del>
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
Slope
FLOW
hh- mdt-5/8/2018-04A
T-Line ROW Edge
N

Save as pdf





# ChicEPA Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/2	2018-05
SITE NUMBER NH-65 RIVER BASIN DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 596 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Intermittent flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REMODIFICATIONS: Some impacts from row	COVERY
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  PERCENT  BLDR SLABS [16 pts]  PERCENT  SILT [3 pt]  10%	HHEI Metric
BLDR SLABS [16 pts]	Substrate Max = 40
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%	30
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 60.00% (S)  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 25  SUbstrate Percentage (Check 100%)  TOTAL NUMBER OF SUBSTRATE TYPES: 5	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dept
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
<ul> <li>&gt; 22.5 - 30 cm [30 pts]</li> <li>&gt; 10 - 22.5 cm [25 pts]</li> <li>NO WATER OR MOIST CHANNEL [0 pts]</li> </ul>	30
COMMENTS MAXIMUM POOL DEPTH Inches 12	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  L R (Per Bank)  L R (Most Predominant per Bank)  V Wide >10 m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH  AVERAGE BANKFULL WIDTH  Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Rive	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and River	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Mature Forest, Wetland  Moderate 5-10 m  Residential, Park, New Field  Open Pasture, Row C Mining or Construction	Width Max=30
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 4  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  V Wide > 10 m Mature Forest, Wetland  Moderate 5-10 m Mature Forest, Wetland  Moderate 5-10 m Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  Moist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral))	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also b	e Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  EWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTI	RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	RCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township	o / City: MEAD
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	<b>5/06/18</b> Quantity: <b>0.06</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): N (Note lab samples collected for water chemistry?	ample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (μmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, ple	ease explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data signs of the first Observed? (Y/N) N Voucher? (Y/N) N Salamanders Obs	billections optional. NOTE: all voucher samples must be labeled with the site neets from the Primary Headwater Habitat Assessment Manual)  erved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
	F STREAM REACH (This <u>must</u> be completed):
FLOW  T-Line ROW Edge	te evaluation and a narrative description of the stream's location    hh-mdt-5/8/2018-05

# **ChieFP** Primary Headwater Habitat Evaluation Form

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

<b>5</b> 4
51

Stream NH-66

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line	Field ID: s-mdt-05/08/2018-06
SITE NUMBER NH-66 RIVER BASIN 050301061206	DRAINAGE AREA (mi²)
LENGTH OF STREAM REACH (ft) LAT LONG RIVER C	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio	's PHWH Streams" for Instructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVER MODIFICATIONS:	RING RECENT OR NO RECOVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predo	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score  TYPE  PERCENT  TYPE	PERCENT Metric
BLDR SLABS [16 pts] 0% SILT [3 pt]	10% Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  BEDROCK [16 pt]  LEAF PACK/WOODY DEB  TINE DETRITUS [3 pts]	RIS [3 pts] 15% Substrate
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt]	0% Max = 40
GRAVEL (2-64 mm) [9 pts] 30% MUCK [0 pts]	0% 21
SAND (<2 mm) [6 pts]	0%
Total of Percentages of 15.00% (A) Substrate Percentage Check 100%	(B) A + B
	SUBSTRATE TYPES: 6
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) eval	luation reach at the time of Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one b  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	· · · · · · · · · · · · · · · · · · ·
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
	CHANNEL [0 pts] 25
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 22.5 - 30 cm [30 pts]	
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width
> 22.5 - 30 cm [30 pts]       < 5 cm [5 pts]	DEPTH Inches 5 LY one box): Bankfull
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  5
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  5
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  5
> 22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream &  Conservation Tillage
> 22.5 - 30 cm [30 pts]   < 5 cm [5 pts]     > 10 - 22.5 cm [25 pts]   NO WATER OR MOIST OF MAXIMUM POOL DE	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial
> 22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream &  Conservation Tillage
> 22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial
> 22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop
> 22.5 - 30 cm [30 pts]	DEPTH Inches  LY one box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
Second	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
Second   S	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction  Dated pools, no flow (Intermittent) Vater (Ephemeral)
22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  2.00  (R) as looking downstream  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction  Diated pools, no flow (Intermittent) Vater (Ephemeral)  3.0  >3.0  >3
22.5 - 30 cm [30 pts]	DEPTH Inches  Yone box):  Bankfull Width Max=30  ULL WIDTH Feet  Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction  Diated pools, no flow (Intermittent) Vater (Ephemeral)  3.0  >3.0  >3

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
	hip / City: Mead
MISCELLANEOUS	
Base Flow Conditions? (Y/N):Y Date of last precipitation:	05/06/18 Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): N (Note lab	o sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N) N Salamanders C	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) bserved? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N Voucher? (Y/N) N
	OF STREAM REACH (This <u>must</u> be completed):  r site evaluation and a narrative description of the stream's location
include important failulilarks and other reactives of interest to	site evaluation and a narrative description of the stream's location
T-Line ROW Edg	
	hh-mdt-5/8/2018-06
FLOW S	ope
$\checkmark$	

# **ChieFP** Primary Headwater Habitat Evaluation Form

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

Stream NH-67

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/2	018-07
SITE NUMBER NH-67 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 88 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERED RECOVERING RECENT OR NO RECOVERED	COVERY
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    OM	HHEI Metric Points Substrate Max = 40  18
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	<u>-</u>
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS OHWM: 2; TOB: 3 AVERAGE BANKFULL WIDTH Feet : 3.00	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m Mature Forest, Wetland Conservation Tillage    Moderate 5-10m	ор
COMMENTS row	L
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS_ephemeral  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	) ]_
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None 0.5  1.0  2.0  3.0  >3.0  >3.0  >3.0	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/1	00 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Towns	ship / City: Mead
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	05/06/18 Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): (Note lat	o sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders O	or collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N) N Voucher? (Y/N
	OF STREAM REACH (This <u>must</u> be completed):  r site evaluation and a narrative description of the stream's location
T-Line ROW Edg:    hh-mdt-5/8/2018-07	Slope
N	hh-mdt-5/8/2018-06



# ChicEPA Primary Headwater Habitat Evaluation Form

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

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08	8/2018-08
SITE NUMBER NH-68 RIVER BASIN 050301061206 DRAINAGE AREA (mi²	
LENGTH OF STREAM REACH (ft) 749 LAT. LONG. RIVER CODE RIVER MILI	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ir	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO F MODIFICATIONS: some impacts from row	ECOVERY
<ol> <li>SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxe (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A &amp; B.</li> </ol>	HHEI
TYPE         PERCENT         TYPE         PERCENT           □ □ BLDR SLABS [16 pts]         0%         □ ✓ SILT [3 pt]         25%	Metric
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substrate
□       □       BEDROCK [16 pt]       0%       □       FINE DETRITUS [3 pts]       0%         □       □       CLAY or HARDPAN [0 pt]       22%	Max = 40
GRAVEL (2-64 mm) [9 pts]  30%  MUCK [0 pts]  0%	16
SAND (<2 mm) [6 pts] 23% ARTIFICIAL [3 pts] 0%	16
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dept
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	15
	,    13
COMMENTS MAXIMUM POOL DEPTH Inches 4	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull Width
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  ✓ (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ✓ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  ✓ (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ✓ 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet : 2.00	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONLY one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN WIDTH  FLOODPLAIN QUALITY	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ☆ NOTE: River Left (L) and Right (R) as looking downstream A	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream of the completed of the complete	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream and RIPARIAN WIDTH  ENORTHMENT FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  Wide > 10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank) L R (Most Predominant per Bank) Vide >10 m Mature Forest, Wetland Moderate 5-10m  Moderate 5-10m  Onen Pasture Row	Width Max=30  5
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  Check ONLY one box):  > 1.0 m (> 1' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]  > 2.00  AVERAGE BANKFULL WIDTH Feet  1. 2.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10 m  Mature Forest, Wetland  Urban or Industrial  Open Pasture, Row	Width Max=30  5
BANK FULL WIDTH (Measured as the average of 3-4 measurements)  - 4.0 meters (> 13') [30 pts] -> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] -> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30  5  Crop
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY *NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank) L R (Most Predominant per Bank) L R (Most Predominant per Bank) Vide >10 m	Width Max=30  5  Crop
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Wetland  Narrow <5m  Narrow <5m  Residential, Park, New Field  Open Pasture, Row  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONL Y one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermitt)	Width Max=30  5  Crop
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS OH Resided Pools, no flow (Intermitt Dry channel, isolated pools, no flow (Intermitt Dry channel, no water (Ephemeral)  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30  5  Crop
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10 m Mature Forest, Wetland  Moderate 5-10 M Mature Forest, Wetland Moderate 5-10 M Moderate 5-10 M Residential, Park, New Field  Narrow <5m None Residential, Park, New Field  None COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral	Width Max=30  5  Crop
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4" 8") [20 pts]  COMMENTS OHWM: 1.5  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH FLOODPLAIN QUALITY Wide > 10m Mature Forest, Wetland Moderate 5-10m Moderate 5-10m Residential, Park, New Field None REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None  1.0    Check ONLY one box):	Width Max=30  5  Crop
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1.5  AVERAGE BANKFULL WIDTH Feet  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Fow  Fenced Pasture  Mining or Construct  COMMENTS Fow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.	Width Max=30  5  Crop on ent)

ADDITIONAL STREAM INFORMATION (This Information Must Als	so be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score	(If Yes, Attacl	h Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)			
WWH Name:		Distance from Evaluated Stream	-
CWH Name:EWH Name:		Distance from Evaluated Stream	
	NTIDE WATERCHER		TION
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE E			
USGS Quadrangle Name: Businessburg	NRCS Soil Map Pa	ge: NRCS Soil Map Stream Ord	er
County: Belmont Town	nship / City: Mead		
MISCELLANEOUS			
Base Flow Conditions? (Y/N):Y Date of last precipitation:	05/06/18	Quantity: 0.06	
Photograph Information: 3 photos			
Elevated Turbidity? (Y/N): N Canopy (% open): 10	0%		
Were samples collected for water chemistry? (Y/N): N (Note la	ab sample no. or id. an	nd attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)		Conductivity (µmhos/cm)	
		Conductivity (µmnos/cm)	
Is the sampling reach representative of the stream (Y/N) If no	t, please explain:		
Additional comments/description of pollution impacts:			
ID number. Include appropriate field da Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders	·	NOTE: all voucher samples must be labele hary Headwater Habitat Assessment Manual Voucher? (Y/N)  N Voucher? (Y/N) N Voucher? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION	N OF STREAM RE	FACH (This must be completed)	١-
Include important landmarks and other features of interest f			
<u> </u>			•
			ih-
			ndt-5/8/2018-08
FLOW			
N .			
N			
T-Lit e ROW Edge			
W			



SITE NAME/LOCATION FirstEnergy Hol	oway-Knox 138kV Tra	nsmission Line	Field ID: s-mdt-0	05/08/2018-09
SITE NUMBER_	NH-69 RIVER BAS	050301061206	DRAINAGE AREA	A (mi²)
LENGTH OF STREAM REACH (ft)82	LAT. LONG		CODERIVER	R MILE
DATE 05/08/18 SCORER MDT, B	CR COMMENTS Eph	hemeral flow regim	ie	
NOTE: Complete All Items On This For	m - Refer to "Field Evalu	uation Manual for Oh	io's PHWH Streams" f	or Instructions
STREAM CHANNEL NONE / NAMED NAMED NONE / NAMED NAMED NONE / NAMED NAME	TURAL CHANNEL REC	COVERED RECOV	ERING RECENT OR	NO RECOVERY
SUBSTRATE (Estimate percent of ev		<del></del> :		
(Max of 32). Add total number of signifi	PERCENT TYPE	naxor8). Finai metric sc	ore is sum of boxes A & B. PERCEN	⊤   Metri
BLDR SLABS [16 pts]	0%	SILT [3 pt]	45%	Point
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]		LEAF PACK/WOODY DI FINE DETRITUS [3 pts]	00/	Substra
COBBLE (65-256 mm) [12 pts]	==	CLAY or HARDPAN [0 p		Max = 4
GRAVEL (2-64 mm) [9 pts]		MUCK [0 pts]	0%	13
SAND (<2 mm) [6 pts]	25%	ARTIFICIAL [3 pts]	0%	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock		Substrate Percentage Check 100%	(B)	A + B
CORE OF TWO MOST PREDOMINATE SUB			F SUBSTRATE TYPES:	4
. Maximum Pool Depth (Measure the I				
evaluation. Avoid plunge pools from ros > 30 centimeters [20 pts]	ad culverts or storm water pip	oes) (Check ONLY one > 5 cm - 10 cm [15 pts]	e box):	Max = 3
> 22.5 - 30 cm [30 pts]	<u> </u>	< 5 cm [5 pts]		
> 10 - 22.5 cm [25 pts]		NO WATER OR MOIST	CHANNEL [0 pts]	5
COMMENTS		MAXIMUM POOI	_ DEPTH Inches	2
BANK FULL WIDTH (Measured as th	e average of 3-4 measureme	ents) (Check O	NLY one box):	Bankfu
> 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" - ≤ 1.0 m (<=3' 3") [5 pts]	· 4' 8") [15 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		≥ 1.0 iii (<-3 3 ) [3 pts]		Max-30
COMMENTS OHWM: 1		AVERAGE BANK	(FULL WIDTH Feet ):	2.00
DIDADIAN ZONE AND ELOOD		must also be complete		
RIPARIAN ZONE AND FLOOD <u>RIPARIAN WIDTH</u>	FLOODPLAIN QUALITY		ht (R) as looking downstre	alli X
L R (Per Bank) Wide >10m		inant per Bank)	L R	T:11
	Mature Forest,	, vvetiand est, Shrub or Old	Conservation	
Moderate 5-10m	Field		Urban or Indus	
Narrow <5m	Residential, Pa	ark, New Field	Open Pasture,	, Row Crop
None COMMENTS row	Fenced Pastur	re	Mining or Cons	struction
				<del></del>
FLOW REGIME (At Time of Ev	aluation) (Check ONLY one		solated pools, no flow (Inte	ermittent)
Subsurface flow with isolated po COMMENTS ephemeral	ols (Interstitial)	Dry channel, no	water (Ephemeral)	,
SINUOSITY (Number of bends None	per 61 m (200 ft) of channel) 1.0	(Check ONLY one box 2.0	): <b></b> 3.0	
✓ 0.5	1.5	2.5	>3	
STREAM GRAD <u>IENT ESTIMATE</u>	_			
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft)	✓ Moderate to S	evere Seve	ere (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also	be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	ITIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Towns	hip / City: Mead
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:	<b>05/06/18</b> Quantity: <b>0.06</b>
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100	%
Were samples collected for water chemistry? (Y/N): (Note lab	sample no. or id. and attach results) Lab Number:
	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) Y If not,	please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data Fish Observed? (Y/N)  N  Voucher? (Y/N)  Salamanders O	r collections optional. NOTE: all voucher samples must be labeled with the site a sheets from the Primary Headwater Habitat Assessment Manual) bserved? (Y/N)
	OF STREAM REACH (This <u>must</u> be completed):  r site evaluation and a narrative description of the stream's location
T-Line ROW Edg:  hh- mat-5/6/2948-09	hh-mdt-5/8/2018-08



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08	3/2018-10
SITE NUMBER NH-70 RIVER BASIN 050301061206 DRAINAGE AREA (mi²	
LENGTH OF STREAM REACH (ft) 61 LAT. LONG. RIVER CODE RIVER MILI	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO F	ECOVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxe	, HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts] 0% SILT [3 pt] 20%	Points
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  0%  LEAF PACK/WOODY DEBRIS [3 pts]  0%  FINE DETRITUS [3 pts]  0%	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
✓       GRAVEL (2-64 mm) [9 pts]       45%       MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	19
Total of Percentages of 0.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <i>ONLY</i> one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	
COMMENTS MAXIMUM POOL DEPTH Inches 0	
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]	Bankfull
	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  1.00  This information must also be completed	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  1.00	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10m  Moderate 5-10m  Moderate 5-10m  V ≤ 1.0 m (<=3' 3") [5 pts]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]  ✓ ≤ 1.0 m (<=3' 3") [5 pts]  ✓ SNOTE: River Left (L) and Right (R) as looking downstream And Right (R) and Right	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m (Sey 7" - 4' 8") [20 pts]  L R (Most Predominant per Bank)  Wide >10m Mature Forest, Wetland  Moderate 5-10m  Note: River Left (L) and Right (R) as looking downstream Mature Forest, Wetland  Immature Forest, Wetland  Onen Pasture Row	Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  Vide >10m (4=3' 3") [5 pts]  L R (Most Predominant per Bank)  Vide >10m (4=3' 3") [5 pts]  L R (Most Predominant per Bank)  Vide >10m Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Residential, Park, New Field  Vide >1.00  L R (Signature (4-3' 3") [5 pts]  Vide >1.00 m (4=3' 3") [5 pts]  Vide >1.00 m (4=3' 3") [5 pts]  Vide >1.00 m (4=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH Feet  L R (Nost Predominant per Bank) L R (Most Predominant per Bank)  L R (Most Predominant per Bank) L R (Most Predominant per	Max=30  5  Crop
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m (Sey 7" - 4' 8") [20 pts]  L R (Most Predominant per Bank)  Wide >10m Mature Forest, Wetland  Moderate 5-10m  Note: River Left (L) and Right (R) as looking downstream Mature Forest, Wetland  Immature Forest, Wetland  Onen Pasture Row	Max=30  5  Crop
Solution	Max=30  5  Crop
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 1  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream And RIPARIAN WIDTH  L R (Per Bank)  Vide >10m Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  None  Residential, Park, New Field  None  COMMENTS Forey  Mining or Construct  COMMENTS Forey	Max=30  5  Crop
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 M  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  None  None  COMMENTS  RIPARIAN (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Stream Flowing  Stream Flowing  Stream Flowing  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet  1.00  AVERAGE BANKFULL WIDTH  Feet	Max=30  5  Crop
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  None  Residential, Park, New Field  None  COMMENTS Tow  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Max=30  5  Crop
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  None  Residential, Park, New Field  None  COMMENTS or Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephermeral  PLOODLAIN QUALITY  AVERAGE BANKFULL WIDTH  FEET  1.00  AVERAGE BANKFULL WIDTH  FEET  1.0	Max=30  5  Crop
S   0 m   -4.0 m   S   7" - 13"   [25 pts]	Max=30  5  Crop on ent)

ADDITIONAL STREAM INFORMATION (This Information Must Als	o be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  EWH Name:	_ Distance from Evaluated Stream _
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE $\underline{E}$	NTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg	NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Town	ship / City: Mead
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_N Date of last precipitation:	05/06/18 Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): Canopy (% open):100	0%
Were samples collected for water chemistry? (Y/N): (Note la	ab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If no	t, please explain:
Additional comments/description of pollution impacts:	
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders	er collections optional. NOTE: all voucher samples must be labeled with the sit ta sheets from the Primary Headwater Habitat Assessment Manual)  Observed? (Y/N)  N  Voucher? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)
	OF STREAM REACH (This <u>must</u> be completed): or site evaluation and a narrative description of the stream's location
T-Line ROW Edge    hh-mdt-5/8/2018-10	Slope
	5/8/2018-11 Form Page - 2

Save as pdf

Reset Form



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-mdt-05/08/20	018-11
SITE NUMBER NH-71 RIVER BASIN 050301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 346 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS:  Riparian cleared, within T-Line ROW.	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.	HHEI
TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrat
COBBLE (65-256 mm) [12 pts] 25% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ O% ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	23
Total of Percentages of OF OOM (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	ATD
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	15
COMMENTS MAXIMUM POOL DEPTH Inches 3	
2 DANK FULL WIDTH (Macanized on the guarage of 2.4 managements). (Check ON/ Vana bay):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 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]  ≤ 1.0 m (<=3' 3") [5 pts]	
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m (<=3' 3") [5 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet  3.00	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: RIPARIAN WIDTH  ENDOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Process  Proc	Width Max=30
> 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]   ✓ ≤ 1.0 m (<=3' 3") [5 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 2	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Process  Proc	Width Max=30
> 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]   ✓ 1.0 m (<=3' 3") [5 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS   OHWM: 2	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Riparian cleared, within T-Line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Noist Channel, isolated pools, no flow (Intermittent)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  AVERAGE BANKFULL WIDTH Feet : 3.00  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2   This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ☆  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10 m  Moderate 5-10 m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Riparian cleared, within T-Line ROW  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral, high gradient  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Field  Narrow <5m  None  COMMENTS Riparian cleared, within T-Line ROW  FLOW REGIME (At Time of Evaluation) (Check ONL Y one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS Ephemeral, high gradient	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 4' 8") [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS OHWM: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed)	<u>:</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, A	uttach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWWH Name:	Distance from Evaluated Stream
CWH Name: _	Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	
USGS Quadrangle Name: Businessburg NRCS Soil Map	
County: Belmont Township / City: Mea	d
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N Date of last precipitation: 05/06/18	Quantity: 0.06
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 95%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or ic	d. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:_	
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This must be completed):
T-Line ROV Edge    Steep Slopes   Scrubby T-Line ROW	T-Line ROW Edge
PHWH Form Page - 2	

# ChicEPA Primary Headwater Habitat Evaluation Form

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

61
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Stream NH-72

SITE NAME/LOCATION   FirstEnergy Holloway-Knox 138kV Transmission Line   Field ID: s-mdt-05/08	/2018-12
SITE NUMBER NH-72 RIVER BASIN DRAINAGE AREA (mi	0.15
LENGTH OF STREAM REACH (ft) 343 LAT. LONG. RIVER CODE RIVER MILE	
DATE 05/08/18 SCORER MDT, BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECENT OR N	ECOVERY
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.	ı HHEI
TYPE PERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]	Substrat
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 10%	Max = 40
GRAVEL (2-64 mm) [9 pts] 30% MUCK [0 pts] 0%  SAND (<2 mm) [6 pts] 25% ARTIFICIAL [3 pts] 0%	21
Ortho (12 mm) [0 pto]	
Total of Percentages of 15.00% (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 6	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS MAXIMUM POOL DEPTH Inches 8	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check <i>ONLY</i> one box):	Bankful Width
> 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] ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	,
COMMENTS OHWM: 2 AVERAGE BANKFULL WIDTH Feet : 4.00	
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	
Field —— Open Pasture Row	Crop
Narrow <5m Residential, Park, New Field Light	
None Fenced Pasture Mining or Construction	on
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermitted)	ent)
Subsurface flow with isolated pools (Interstitial)  Dry channel, no water (Ephemeral)  COMMENTS ephemeral	
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 >3	
STREAM GRADIENT ESTIMATE	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe Severe	
	ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
✓ WWH Name:   Distance from Evaluated Stream     CWH Name:   Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Businessburg NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Belmont Township / City: Mead
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/06/18 Quantity: 0.06
Photograph Information: 3 photos
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the sit ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y/
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location    Slope
Slope T-Line ROW Edge



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-tmq-062720	018-01
SITE NUMBER 01 RIVER BASIN 50301061206 DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft) 30 LAT. 39.96870 LONG80.81200 RIVER CODE RIVER MILE	
DATE 06/27/18 SCORER TMQ; BCR COMMENTS Ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING Univerted under access road	COVERY
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.	ı HHEI
TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BEDROCK [16 pt]  0%  FINE DETRITUS [3 pts]  0%	Substrat Max = 40
COBBLE (65-256 mm) [12 pts] 10% CLAY or HARDPAN [0 pt] 0%  GRAVEL (2-64 mm) [9 pts] 45% MUCK [0 pts] 0%	IVIAX - 4
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  MUCK [0 pts]  ARTIFICIAL [3 pts]  0%  0%	15
Total of Percentages of 10.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	
<ol> <li>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):</li> </ol>	Pool Dep Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankful
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  AVERAGE BANKFULL WIDTH Feet  1.50	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ARIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Wide >10m  Mature Forest, Wetland  Conservation Tillage	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream AND FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Place of the stress	Width Max=30
> 4.0 meters (> 13') [30 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  AVERAGE BANKFULL WIDTH Feet  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream AND FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Place of the stress	Width Max=30
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream ↑  RIPARIAN WIDTH  FLOODPLAIN QUALITY  R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Residential, Park, New Field  None  COMMENTS Fow  Flow Regime (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  R (Per Bank)  Wide >10 m  Mature Forest, Wetland  Moderate 5-10m  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS row  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  V Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  Residential, Park, New Field  None  COMMENTS Fenced Pasture  COMMENTS No Text and Right (R) as looking downstream And Right (R) as looking and Right (R) as looking downstream And Right (R) as looking downstream And Right (R) as looking downstream And Right (R) as looking and Right (R) as looking downstream And Right (R) as looking and Right (R) as looking downstream And Right (R) as looking downs	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7' - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN WIDTH  ERPARIAN WIDTH  FLOODPLAIN QUALITY  NoTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  None  COMMENTS Fenced Pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  1.5 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]   > 1.0 m (> 9' 7" - 13') [25 pts]   > 1.5 m - 3.0 m (> 9' 7" - 13') [20 pts]   > 1.5 m - 3.0 m (> 9' 7" - 13') [20 pts]	Width Max=30
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7' - 4' 8") [20 pts]  COMMENTS Ohwm: 1.5 tob: 2  This information must also be completed  RIPARIAN WIDTH  ERPARIAN WIDTH  FLOODPLAIN QUALITY  NoTE: River Left (L) and Right (R) as looking downstream ★  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  Narrow <5m  None  COMMENTS Fenced Pasture  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS ephemeral  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  1.5 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  > 1.0 m (<=3' 3") [5 pts]	Width Max=30  5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Att	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name: _	_ Distance from Evaluated Stream _
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE LOCATION
SGS Quadrangle Name: Businessburg NRCS Soil Map	Page: NRCS Soil Map Stream Order
bunty: Belmont Township / City: Mead	
MISCELLANEOUS	
ase Flow Conditions? (Y/N):_Y Date of last precipitation:06/26/18	Quantity: 0.08
	Quantity
notograph Information: 3 photos	
evated Turbidity? (Y/N): N Canopy (% open): 10%	
ere samples collected for water chemistry? (Y/N): Note lab sample no. or id.	and attach results) Lab Number:
eld Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
the sampling reach representative of the stream (Y/N) If not, please explain:	
ditional comments/description of pollution impacts:	
erformed? (Y/N): (If Yes, Record all observations. Voucher collections options ID number. Include appropriate field data sheets from the P ish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebra omments Regarding Biology:	rimary Headwater Habitat Assessment Manual)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation a	d a narrative description of the stream's location
acce	ess road
rom	1/14 5
274	
	<b>3 4</b>
PHWH Form Page - 2	
tober 24, 2002 Revision	

Reset Form

Save as pdf



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

26

SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line Field ID: s-bcr-04/11/20	19-01
SITE NUMBER 01 RIVER BASIN 05030106 DRAINAGE AREA (mi²) 0.	01
LENGTH OF STREAM REACH (ft) 50 LAT. 40.09062 LONG80.95038 RIVER CODE RIVER MILE	
DATE 04/11/19 SCORER bcr/ma comments ephemeral flow regime	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOMMODIFICATIONS: Culverted under existing gravel drive	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]  BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]  COBBLE (65-256 mm) [12 pts]  GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]  Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock  Bldr Slabs, Boulder, Cobble, Bedrock  SCORE OF TWO MOST PRESONMANT SUBSTRATE TYPES: 12	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	Pool Depth Max = 30
COMMENTS MAXIMUM POOL DEPTH Inches 1	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  (Check ONL Y one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Bankfull Width Max=30
COMMENTS AVERAGE BANKFULL WIDTH Feet: 1.50	5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Immature Forest, Shrub or Old  Vizban or Industrial  Viz Narrow <5m  None  Fenced Pasture  COMMENTS Convevance between residential parcels and under gravel drive to ditchline  FLOW REGIME (At Time of Evaluation)  COMMENTS Estimated ephemeral flow regime  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  None  Check ONLY one box):  Check ONLY one box):  None  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  Check ONLY one box):  Check ONLY one box):	р

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed	<u>):</u>
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, A	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Pouge Run  CWH Name:  EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH	HED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Ma	p Page: NRCS Soil Map Stream Order
County: Belmont Township / City: N/A	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_	Quantity: 0.00
Photograph Information: 3 photos	
Elevated Turbidity? (Y/N): N Canopy (% open): 100%	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or i	d. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
ID number. Include appropriate field data sheets from the Voucher? (Y/N) N Salamanders Observed? (Y/N)	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation	and a narrative description of the stream's location
//\ /\\\	
s-bcr-04/11/2019-01	• • • • • • • • • • • • • • • • • • • •
FLOW FLOW	.···
Culvert under gravel drive	
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	



SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line	
SITE NUMBER S-MJA-050420-01 RIVER BASIN 05030106-0703 DRAINAGE AREA (mi²) LENGTH OF STREAM REACH (ft) 200 LAT. 40.07492 LONG80.94272 RIVER CODE RIVER MILE	0.010
LENGTH OF STREAM REACH (ft) 200 LAT. 40.07492 LONG80.94272 RIVER CODE RIVER MILE COMMENTS Ephemeral	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RE	COVERY
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.	ı HHEI
TYPE PERCENT TYPE PERCENT	Metric
□       □       BLDR SLABS [16 pts]       0%       □       □       SILT [3 pt]       80%         □       □       □       □       LEAF PACK/WOODY DEBRIS [3 pts]       0%	Substrate
□ □       BEDROCK [16 pt]       0%       □ □       FINE DETRITUS [3 pts]       0%         □ □       COBBLE (65-256 mm) [12 pts]       0%       □ □       CLAY or HARDPAN [0 pt]       0%	Max = 40
□ □ GRAVEL (2-64 mm) [9 pts]       5%       □ □ MUCK [0 pts]       0%         SAND (<2 mm) [6 pts]	12
Total of Percentages of 0% (A) Substrate Percentage 100% (B) Check	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30
<ul> <li>→ 30 centimeters [20 pts]</li> <li>→ 22.5 - 30 cm [30 pts]</li> <li>→ 5 cm - 10 cm [15 pts]</li> <li>&lt; 5 cm [5 pts]</li> </ul>	
□ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	5
COMMENTS MAXIMUM POOL DEPTH (Inches): 1.00	
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]	Bankfull Width
□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
COMMENTS AVERAGE BANKFULL WIDTH (Feet): 1.00	5
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH 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	
Field — — Open Pasture Row C	rop
□ □ Narrow <5m □ □ Residential, Park, New Field □ □ Mining or Construction	1
COMMENTS	1
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  The control of Evaluation (Check ONLY one box):  Moist Channel, isolated pools, no flow (Intermitten Dry channel, no water (Ephemeral))	t)
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         □         >3	
STREAM GRADIENT ESTIMATE  Flat (0.5 ft/100 ft)  Flat to Moderate  Moderate (2 ft/100 ft)  Moderate to Severe  Severe (10 ft/	'100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):				
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)				
DOWNSTREAM DESIGNATED USE(S)				
✓ WWH Name: Little McMahon Creek	Distance from Evaluated Stream 0.16			
CWH Name:	Distance from Evaluated Stream			
EWH Name:	Distance from Evaluated Stream			
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION				
USGS Quadrangle Name: Saint Clairsville NRCS Soil Map F	Page: NRCS Soil Map Stream Order			
County: Belmont Township / City: St. Cla	irsville			
MISCELLANEOUS				
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/03/2020	Quantity: 0.10			
Photograph Information:				
Elevated Turbidity? (Y/N): N Canopy (% open): 100				
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:				
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)				
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:				
Additional comments/description of pollution impacts:				
BIOTIC EVALUATION				
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)				
Fig. Classical AVAN N	N N			
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebrate	Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)			
Comments Regarding Biology:	N vasiler (m)			
Commond Regarding Diology.				
<u></u>				
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	REACH (This <u>must</u> be completed):			

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





### Site Photos



upstream



substrate



downstream



42
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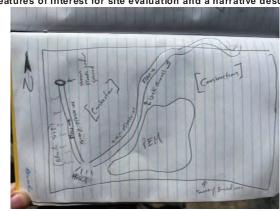
SHE NAME/LUCATION I II STELLOUS I II STELLOUS II I STELLOUS II STE	loway-Knox 138kV Transmission Line	SITE NAME/LOCATION FirstEnergy Holloway-Knox 138kV Transmission Line			
SITE NUMBER S-MJA-050420-02 RIVER BASIN 05030106-0703 DRAINAGE AREA (mi²) 0.010					
LENGTH OF STREAM REACH (ft) 200 LAT. 40.07507 LONG80.94354 RIVER CODE RIVER MILE					
DATE 05/04/2020 SCORER MJA COMMENTS Ephemeral					
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions					
STREAM CHANNEL □ NONE / NATURAL CHANNEL □ RECOVERED □ RECOVERING □ RECENT OR NO RECOVERY MODIFICATIONS: Likely newly formed stream in active construction site					
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHE			
,	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  PERCENT TYPE PERCENT	Metric			
□ □ BLDR SLABS [16 pts] □ □ BOULDER (>256 mm) [16 pts]	0%	Points			
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts]	Substrate Max = 40			
COBBLE (65-256 mm) [12 pts]	0% ☐ ☐ CLAY or HARDPAN [0 pt] 0% 0% 0%	Wax = 40			
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ SAND (<2 mm) [6 pts] ☐	5%	12			
	0% (A) Substrate Percentage 100% (B)	A + B			
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS	Check	^ 7 5			
	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of ad culverts or storm water pipes) (Check ONLY one box):	Pool Dep Max = 30			
□ > 30 centimeters [20 pts] □ > 5 cm - 10 cm [15 pts] □ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts]					
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	25			
COMMENTS MAXIMUM POOL DEPTH (Inches): 5.00					
3. BANK FULL WIDTH (Measured as the	e average of 3-4 measurements) (Check ONLY one box):	Bankful			
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankful Width			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]	Width Max=30			
> 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			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH (Feet): 1.50  This information must also be completed	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH (Feet): 1.50  This information must also be completed  PLAIN QUALITY 公NOTE: River Left (L) and Right (R) as looking downstream %	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank)	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]  ≤ 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH (Feet): 1.50  This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank) Wide >10m	This information must also be completed  PLAIN QUALITY  L R (Most Predominant per Bank)  L R  Mature Forest, Wetland  Mature Forest, Wetland  No Title (No and Right (R) as looking downstream Arguer (Amother Conservation Tillage)  L R  Mature Forest, Wetland  Conservation Tillage	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   COMMENTS	This information must also be completed  PLAIN QUALITY  L R (Most Predominant per Bank)  L R  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  PLAIN QUALITY  Conservation Tillage  Urban or Industrial  Conservation Flags  Conservation Flags	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH L R (Per Bank)	This information must also be completed  PLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Mature Forest, Wetland  Immature Forest, Shrub or Old Field  Residential, Park, New Field  Note 1.5 m (> 3' 3" - 4' 8") [15 pts]  1.50  L R  Conservation Tillage  Urban or Industrial  Open Pasture, Row Conservation	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]   COMMENTS	This information must also be completed  PLAIN QUALITY  L R (Most Predominant per Bank)  L R  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  PLAIN QUALITY  Conservation Tillage  Urban or Industrial  Conservation Flags  Conservation Flags	Width Max=30			
> 4.0 meters (> 13') [30 pts]	This information must also be completed  PLAIN QUALITY  ∴ NOTE: River Left (L) and Right (R) as looking downstream ∴  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  > 1.50  AVERAGE BANKFULL WIDTH  (Feet):  1.50  L R  Conservation Tillage  Urban or Industrial  Open Pasture, Row Conservation  Mining or Construction	Width Max=30			
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS	This information must also be completed  PLAIN QUALITY  ♣ NOTE: River Left (L) and Right (R) as looking downstream ★  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Mature Forest, Wetland    Mature Forest, Shrub or Old   Immature Forest, Shrub or Old   Quality   Conservation Tillage	Width Max=30			
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS	This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)    Mature Forest, Wetland   Conservation Tillage   Immature Forest, Shrub or Old   Urban or Industrial     Residential, Park, New Field   Open Pasture, Row Cillaguation) (Check ONLY one box):    Moist Channel, isolated pools, no flow (Intermitten)	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH  L R (Per Bank)	This information must also be completed  PLAIN QUALITY  ♣ NOTE: River Left (L) and Right (R) as looking downstream ★  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Mature Forest, Wetland    Mature Forest, Shrub or Old   Immature Forest, Shrub or Old   Quality   Conservation Tillage	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Every Stream Flowing Subsurface flow with isolated poor COMMENTS  SINUOSITY (Number of bends property None)	This information must also be completed  PLAIN QUALITY  ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)    Mature Forest, Wetland   Conservation Tillage	Width Max=30			
> 4.0 meters (> 13') [30 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]     COMMENTS	AVERAGE BANKFULL WIDTH (Feet):    AVERAGE BANKFULL WIDTH (Feet):   1.50	Width Max=30			
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Every Stream Flowing Subsurface flow with isolated poor COMMENTS  SINUOSITY (Number of bends property None)	This information must also be completed  PLAIN QUALITY  ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)    Mature Forest, Wetland   Conservation Tillage	Width Max=30  5			

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):				
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)				
DOWNSTREAM DESIGNATED USE(S)				
WWH Name: Little McMahon Creek	Distance from Evaluated Stream 0.32			
CWH Name:	Distance from Evaluated Stream			
L EWH Name:	Distance from Evaluated Stream			
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION				
USGS Quadrangle Name: Saint Clairsville NRCS Soil Map F	Page: NRCS Soil Map Stream Order			
County: Belmont Township / City: St. Cla	irsville			
MISCELLANEOUS				
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/03/2020	Quantity: 0.10			
Photograph Information:				
Elevated Turbidity? (Y/N): N Canopy (% open): 100				
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:				
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)				
Is the sampling reach representative of the stream (Y/N) If not, please explain:				
If the sampling reach representative of the stream (1714) in not, please explain				
Additional comments/description of pollution impacts:				
DIOTIO EVALUATION				
BIOTIC EVALUATION				
Performed? (Y/N): Note: all voucher samples must be labeled with the site				
ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)				
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N	Voucher? (Y/N)			
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)				
Comments Regarding Biology:				

#### DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):

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





#### Site Photos



upstream



substrate



downstream



Stream NH-80



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

SITE NAME/LOCATION THE SELECTION STREET	oway-Knox 138kV Transmission Line	
SITE NUMBER S-I	MJA-050420-03 RIVER BASIN 05030106-0703 DRAINAGE AREA (mi²) 0.	010
LENGTH OF STREAM REACH (ft) 97	LAT. 40.07437 LONG80.94233 RIVER CODE RIVER MILE	
DATE 05/04/2020 SCORER MJA	COMMENTS Ephemeral	
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NAT MODIFICATIONS: Culverted under road	TURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECO	OVERY
	ery 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.  ERCENT TYPE PERCENT	HHEI Metric
BLDR SLABS [16 pts]	0% SILT [3 pt] 10%	Points
□ □ BOULDER (>256 mm) [16 pts] □ □ BEDROCK [16 pt] □	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% 0% 0%	Substrate
COBBLE (65-256 mm) [12 pts]	0% CLAY or HARDPAN [0 pt] 0%	Max = 40
GRAVEL (2-04 IIIII) [9 pts]	50% MUCK [0 pts] 0%	17
SAND (<2 mm) [6 pts]	15% ☐ ✓ ARTIFICIAL [3 pts] 20%	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	5% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 12 TOTAL NUMBER OF SUBSTRATE TYPES: 5	
	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road  > 30 centimeters [20 pts]	d culverts or storm water pipes) (Check ONLY one box):  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	25
COMMENTS	MAXIMUM POOL DEPTH (Inches): 6.00	
3. BANK FULL WIDTH (Measured as the		Bankfull
> 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]	✓ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
	AVERAGE BANKFULL WIDTH (Feet): 2.00	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	2 1.0 iii (1-0 0 ) [0 pts]	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed	
COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank)	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A FLOODPLAIN QUALITY L R (Most Predominant per Bank) L R	
COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank)  Vide >10m	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  Mature Forest, Wetland Conservation Tillage	
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Vide >10m  Moderate 5-10m	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field	5
COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑ □ Mature Forest, Wetland □ □ Conservation Tillage □ ☑ Immature Forest, Shrub or Old □ □ Urban or Industrial □ □ Residential, Park, New Field □ □ Open Pasture, Row Crop	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Field	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Eval	This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑ Mature Forest, Wetland □ Conservation Tillage  □ Immature Forest, Shrub or Old □ Urban or Industrial  □ Residential, Park, New Field □ Open Pasture, Row Cro  □ □ Fenced Pasture □ Mining or Construction	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Eval) Stream Flowing Subsurface flow with isolated pool	This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑ Mature Forest, Wetland □ Conservation Tillage  □ Immature Forest, Shrub or Old □ Urban or Industrial  □ Residential, Park, New Field □ Open Pasture, Row Cro  □ □ Fenced Pasture □ Mining or Construction	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS	This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  ☑ Mature Forest, Wetland □ Conservation Tillage  □ Immature Forest, Shrub or Old □ Urban or Industrial  □ Residential, Park, New Field □ Open Pasture, Row Cro  □ □ Fenced Pasture □ Mining or Construction	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Eval) Stream Flowing Subsurface flow with isolated pool COMMENTS  SINUOSITY (Number of bends pool	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆ FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R  □ Mature Forest, Wetland □ Conservation Tillage □ Immature Forest, Shrub or Old □ Urban or Industrial □ Residential, Park, New Field □ Open Pasture, Row Cro □ □ Fenced Pasture □ Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)  Der 61 m (200 ft) of channel) (Check ONLY one box):	5
COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS  SINUOSITY (Number of bends po	AVERAGE BANKFULL WIDTH (Feet): 2.00  This information must also be completed PLAIN QUALITY	5

ADDITIONAL STREAM INFORMATION (This Information Must	Also be Completed):
QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Little McMahon Creek  CWH Name: EWH Name:	Distance from Evaluated Stream _
	IE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Saint Clairsville	NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Stream Order
County: Belmont To	ownship / City: St. Clairsville
MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation:	<b>05/03/2020</b> Quantity: <b>0.10</b>
Photograph Information:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	te lab sample no. or id. and attach results) Lab Number:  pH (S.U.)  Conductivity (µmhos/cm)  f not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate field Fish Observed? (Y/N)  N  Voucher? (Y/N)  N  Salamande	ucher collections optional. NOTE: all voucher samples must be labeled with the site d data sheets from the Primary Headwater Habitat Assessment Manual)  ers Observed? (Y/N) N Voucher? (Y/N) N V
	ON OF STREAM REACH (This <u>must</u> be completed): st for site evaluation and a narrative description of the stream's location
State	e+ 0504.70

FLOW

#### Site Photos



upstream



substrate



downstream

Stream NH-81



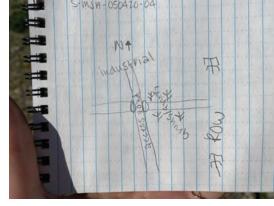
### **ChieFP** Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

2	Ω
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SITE NAME/LOCATION FirstEnergy Hollow	way-Knox 138kV Transmission Line	
SITE NUMBER S-M	1JA-050420-04 RIVER BASIN 05030106-0704 DRAINAGE AREA (mi²) 0.	010
	LAT. 40.00781 LONG80.86540 RIVER CODE RIVER MILE	
DATE 05/04/2020 SCORER MJA	COMMENTS Ephemeral	
NOTE: Complete All Items On This Form	- Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	ıctions
STREAM CHANNEL NONE / NATUMODIFICATIONS: Industrial activity	URAL CHANNEL    RECOVERED    RECOVERING    RECENT OR NO RECO	OVERY
	y type of substrate present. Check ONLY two predominant substrate TYPE boxes	UUEI
, ,	nt substrate types found (Max of 8). Final metric score is sum of boxes A & B.  RCENT TYPE PERCENT	HHEI Metric
BLDR SLABS [16 pts]	0% ☐ ☑ SILT [3 pt] 15%	Points
, , , , , , , , , , , , , , , , , , , ,	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% 0% 0%	Substrate
☑ ☐ COBBLE (65-256 mm) [12 pts] ☐ 7	75% CLAY or HARDPAN [0 pt] 0%	Max = 40
GIVAVEL (2-04 IIIII) [9 pis]	10%	18
Total of Percentages of 75 Bldr Slabs, Boulder, Cobble, Bedrock	5% (A) Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBST	TRATE TYPES: 15 TOTAL NUMBER OF SUBSTRATE TYPES: 3	
	eximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road ( > 30 centimeters [20 pts]	culverts or storm water pipes) (Check ONLY one box):  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	5
		5
COMMENTS	MAXIMUM POOL DEPTH (Inches): 1.00	
3. BANK FULL WIDTH (Measured as the a		Bankfull Width
> 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]  ✓ ≤ 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 (Feet): 1.50	5
RIPARIAN ZONE AND FLOODPL	This information must also be completed  _AIN QUALITY   ↑NOTE: River Left (L) and Right (R) as looking downstream ↑	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
L R (Per Bank) ☐ ☐ Wide >10m	L R (Most Predominant per Bank) L R  Mature Forest, Wetland D Conservation Tillage	
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old    Urban or Industrial	
✓ ✓ Narrow <5m	Field  Residential, Park, New Field  Open Pasture, Row Crop	р
□ □ None	Fenced Pasture Mining or Construction	
COMMENTS		
FLOW REGIME (At Time of Evalu	uation) (Check ONLY one box):	
<ul><li>✓ Stream Flowing</li><li>✓ Subsurface flow with isolated pools</li></ul>	Moist Channel, isolated pools, no flow (Intermittent)  s (Interstitial)  Dry channel, no water (Ephemeral)	
COMMENTS COMMENTS	bry channel, no water (Ephoneral)	
SINUOSITY (Number of bends pe	er 61 m (200 ft) of channel) <u>(C</u> heck <i>ONLY</i> one box):	
✓ None □		
	1.0 $\square$ 2.0 $\square$ 3.0 $\square$ >3	
0.5	1.5 2.5 3.0	
		0 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):		
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ch Completed QHEI Form)	
DOWNSTREAM DESIGNATED USE(S)	_	
WWH Name:	_ Distance from Evaluated Stream _	
CWH Name:	_ Distance from Evaluated Stream _	
EWH Name: _McMahon Creek	Distance from Evaluated Stream _	0.06
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE L	OCATION
USGS Quadrangle Name: Lansing NRCS Soil Map P	age:NRCS Soil Map Stream	ı Order
County: Belmont Township / City: Glenco	)e	
MISCELLANEOUS		
Base Flow Conditions? (Y/N): Y Date of last precipitation: 05/03/2020	Quantity: 0.10	
Photograph Information:		
Elevated Turbidity? (Y/N): Canopy (% open): <b>50</b>		
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. a	and attach results) Lab Number:	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)	
Is the sampling reach representative of the stream (Y/N) Y If not, please explain:		
Additional comments/description of pollution impacts:		
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Prince Fish Observed? (Y/N) N Salamanders Observed? (Y/N) N Salamanders Observed? (Y/N) N Aquatic Macroinvertebrate Comments Regarding Biology:	mary Headwater Habitat Assessment Ma  Voucher? (Y/N)	anual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation an		
SIMUR-050AZO-04	a a marratre description of the sites	5 100411011

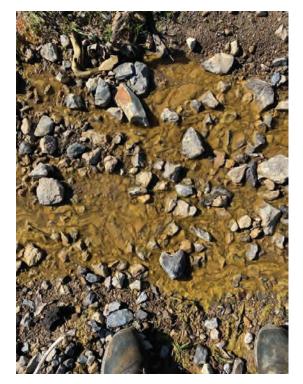
FLOW -



#### Site Photos



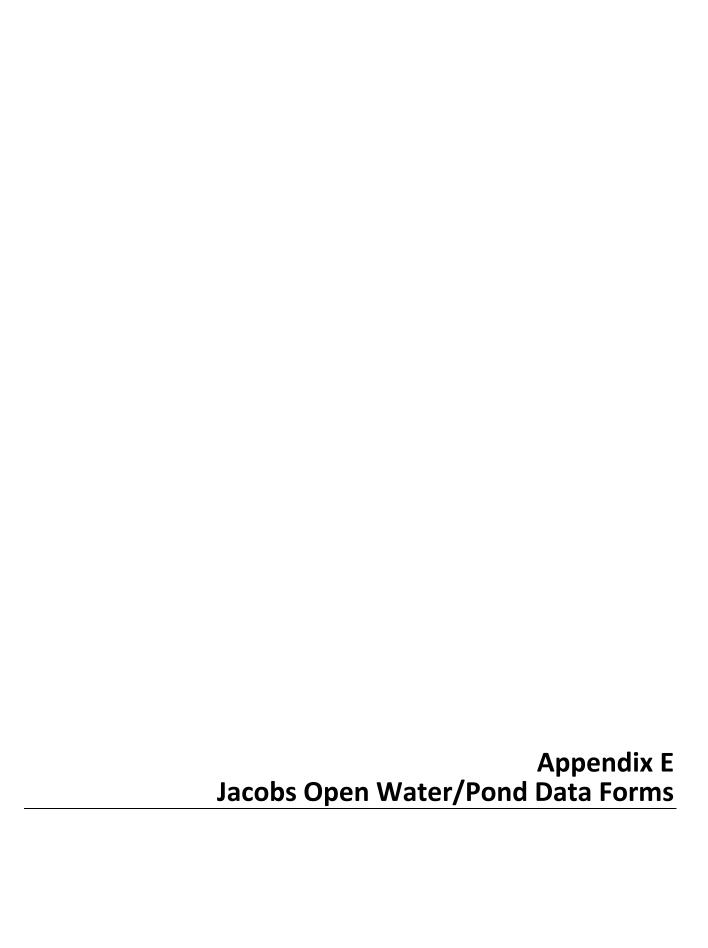
upstream



substrate



downstream



POND DATA SHEET				
FEATURE ID: P-BAO-05/	15/2018-05	ASSOCIATE	D FEATURES: NONE	
DATE: 05/15/2018	CLIENT/PROJECT NAME:	: FirstEnergy / H	HOLLOWWAY-KNOX 138KV TRANSMISSION LINE	
INVESTIGATORS: B.Otto, T.Qualio				
STATE/COUNTY: OH/ Harrison IS THIS A MAPPED NWI FEATURE?: Yes, PUBG			Is this a Mapped NWI Feature?: Yes, PUBG	
	WA	ATERBODY CH	IARACTERISTICS	
WATERBODY TYPE:	Man-made			
AVG. DEPTH:	3 ft			
AVG. WIDTH (WATER SURFACE):	137 ft			
APPROXIMATE SIZE:	0.50 acres			
		Qualitativi	E ATTRIBUTES	
AVERAGE WATER APPEARANCE:	Turbid, algal crust			
PRIMARY SUBSTRATE (IF OBSERVED):	Clay, sand			
POTENTIAL HABITAT FOR:	amphibians			
SURROUNDING LAND USE:	ROW and old field			
WETLAND FRINGE (IF PRESENT):	No			
COMMENTS				
Man-made pond formed from pre	vious mining activities			

POND DATA SHEET					
FEATURE ID: P-BAO-05/	/15/2018-04	ASSOCIATE	D FEATURES: NONE		
DATE: 05/15/2018	CLIENT/PROJECT NAME: FIRSTENERGY / HOLLOWWAY-KNOX 138KV TRANSMISSION LINE				
INVESTIGATORS: B.Otto, T.Qualio					
STATE/COUNTY: OH/ Harrison	STATE/COUNTY: OH/ Harrison Is THIS A MAPPED NWI FEATURE?: Yes, PUBG				
	WA	ATERBODY C	HARACTERISTICS		
WATERBODY TYPE:	Man-made				
AVG. DEPTH:	4 ft				
AVG. WIDTH (WATER SURFACE):	100 ft				
APPROXIMATE SIZE:	0.20 acres				
		Qualitativi	E ATTRIBUTES		
AVERAGE WATER APPEARANCE:	Turbid, algal crust				
PRIMARY SUBSTRATE (IF OBSERVED):	Clay, sand				
POTENTIAL HABITAT FOR:	amphibians				
SURROUNDING LAND USE:	ROW, old field, and forested				
WETLAND FRINGE (IF PRESENT):					
COMMENTS					
Man-made pond formed from pre	vious mining activities				

POND DATA SHEET			
FEATURE ID: P-BAO-05/	15/2018-03	ASSOCIATE	D FEATURES: W-BAO-05/15/2018-02
DATE: 05/15/2018	CLIENT/PROJECT NAME: FIRSTENERGY / HOLLOWWAY-KNOX 138KV TRANSMISSION LINE		
INVESTIGATORS: B.Otto, T.Qualio			
STATE/COUNTY: OH/ Harrison Is THIS A MAPPED NWI FEATURE?: Yes, PEM1C			IS THIS A MAPPED NWI FEATURE?: Yes, PEM1C
	W	ATERBODY CI	HARACTERISTICS
WATERBODY TYPE:	Natural		
AVG. DEPTH:	12 ft		
AVG. WIDTH (WATER SURFACE):	275 ft		
APPROXIMATE SIZE:	2.90 acres		
		QUALITATIVI	E ATTRIBUTES
AVERAGE WATER APPEARANCE:	Relatively clear		
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, clay		
POTENTIAL HABITAT FOR:	Amphibians, migratory birds, small fish		
SURROUNDING LAND USE:	ROW and forested		
WETLAND FRINGE (IF PRESENT): Yes, W-BAO-05/15/2018-02			
COMMENTS			
Natural pond formed from connect	cted stream, damned do	wnstream from pip	eline construction

POND DATA SHEET			
FEATURE ID: P-BAO-05/	15/2018-02	ASSOCIATE	D FEATURES: NONE
DATE: 05/15/2018	CLIENT/PROJECT NAME: FIRSTENERGY / HOLLOWWAY-KNOX 138KV TRANSMISSION LINE		
INVESTIGATORS: B.Otto, T.Qualio			
STATE/COUNTY: OH/ Harrison IS THIS A MAPPED NWI FEATURE?: None			IS THIS A MAPPED NWI FEATURE?: None
	W	/ATERBODY C	HARACTERISTICS
WATERBODY TYPE:	Man-made		
AVG. DEPTH:	6 ft		
AVG. WIDTH (WATER SURFACE):	50 ft		
APPROXIMATE SIZE:	0.18 acres		
		QUALITATIV	E ATTRIBUTES
AVERAGE WATER APPEARANCE:	Slightly turbid, algal c	rust	
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, clay		
POTENTIAL HABITAT FOR:	Amphibians		
SURROUNDING LAND USE:	ROW and old field		
WETLAND FRINGE (IF PRESENT):	No		
COMMENTS			
Man-made pond formed from pre	vious mining		

POND DATA SHEET			
FEATURE ID: P-BAO-05,	/15/2018-01	ASSOCIATE	D FEATURES: W-BAO-05/15/2018-01
<b>DATE:</b> 05/15/2018			
INVESTIGATORS: B.Otto, T.Qualio			
STATE/COUNTY: OH/ Harrison Is this a Mapped NWI Feature?: Yes, PEM1F			Is this a Mapped NWI Feature?: Yes, PEM1F
	<b>W</b> A	ATERBODY CH	IARACTERISTICS
WATERBODY TYPE:	Natural		
AVG. DEPTH:	10 ft		
AVG. WIDTH (WATER SURFACE):	130 ft		
APPROXIMATE SIZE:	1.04 acres		
	1	Qualitativi	E ATTRIBUTES
AVERAGE WATER APPEARANCE:	Slightly turbid, algal cru	ust	
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, clay		
POTENTIAL HABITAT FOR:	Amphibians, small fish, migratory birds		
SURROUNDING LAND USE:	PROUNDING LAND USE:  ROW and forested		
WETLAND FRINGE (IF PRESENT): Yes, wetland W-BAO-05/15-2018-01			
COMMENTS			
Natural pond with wetland fringe	· ·		

POND DATA SHEET			
FEATURE ID: P-TMQ-05182018-01 REPORT ID: POND NH-06  ASSOCIATED FEATURES: Wetland NH-14			
<b>DATE:</b> 05/18/2018	CLIENT/PROJECT NAME	: FIRSTENERGY / HOLLOWAY-KNOX 138 KV TRANSMISSION LINE	
INVESTIGATORS: T.Qualio, J.Freer	ı		
STATE/COUNTY: OH / Belmont	STATE/COUNTY: OH / Belmont Is THIS A MAPPED NWI FEATURE?: Yes, PUBGx		
	W	ATERBODY CHARACTERISTICS	
WATERBODY TYPE:	Natural pond formed fr	rom former mining activities	
AVG. DEPTH:	6 ft		
AVG. WIDTH (WATER SURFACE):	200 ft		
APPROXIMATE SIZE:	5 acres (including total area outside ESA)		
		QUALITATIVE ATTRIBUTES	
AVERAGE WATER APPEARANCE:	NCE: Slight green/blue color, algal crust		
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, bedrock		
POTENTIAL HABITAT FOR:	Amphibians, small fish, migratory birds		
SURROUNDING LAND USE: cleared ROW, former mining activities with herbaceous cover, scrub-shrub			
WETLAND FRINGE (IF PRESENT):	WETLAND FRINGE (IF PRESENT): Yes, w-tmq-05182018-03, NH-14		
COMMENTS			
Pond formed from previous mining	ng activities, draining acti	vities occuring from mining company into existing pond	

	POND DATA SHEET			
FEATURE ID: P-BAO-05172018-01 REPORT ID: POND NH-07 ASSOCIATE		ASSOCIATE	D FEATURES: None	
<b>DATE:</b> 05/17/2018	CLIENT/PROJECT NAME:	: FirstEnergy / H	JOLLOWAY-KNOX 138 KV TRANSMISSION LINE	
INVESTIGATORS: T.Qualio, B.Otto				
STATE/COUNTY: OH / Belmont			IS THIS A MAPPED NWI FEATURE?: PUBGx	
	WA	ATERBODY CH	IARACTERISTICS	
WATERBODY TYPE:	Natural pond formed fro	om previous mini	ng activities	
AVG. DEPTH:	6 ft			
AVG. WIDTH (WATER SURFACE):	250 ft			
APPROXIMATE SIZE:	1.5 acres			
QUALITATIVE ATTRIBUTES				
AVERAGE WATER APPEARANCE:	Clear, slight green tint			
PRIMARY SUBSTRATE (IF OBSERVED):	bedrock			
POTENTIAL HABITAT FOR:	Amphibians, ducks			
SURROUNDING LAND USE:	Forested, cleared ROW, mining activities			
WETLAND FRINGE (IF PRESENT):	None			
COMMENTS				
Pond formed from previous mining activities, most of pond on the edge of the ROW, steep drop approximately 75-100 ft				
1				

POND DATA SHEET			
FEATURE ID: P-BAO-05172018-02 REPORT ID: POND NH-08  ASSOCIATED FEATURES: None		D FEATURES: None	
CLIENT/PROJECT NAME: F	FirstEnergy / H	HOLLOWAY-KNOX 138 KV TRANSMISSION LINE	
STATE/COUNTY: OH / Belmont Is THIS A MAPPED NWI FEATURE?: PUBGx			
WAT	TERBODY CH	IARACTERISTICS	
Natural pond formed fror	m previous mini	ng activities	
3 ft			
95 ft			
0.23 acres			
Q	<b>U</b> ALITATIVE	ATTRIBUTES	
Clear, slight green tint			
Bedrock, silt			
Amphibians, migratory birds			
cleared ROW, mining activities			
None			
COMMENTS			
ng activities,			
	72018-02 8 CLIENT/PROJECT NAME: 3 WAT Natural pond formed from 3 ft 95 ft  0.23 acres  Clear, slight green tint Bedrock, silt Amphibians, migratory be cleared ROW, mining act	CLIENT/PROJECT NAME: FIRSTENERGY / H  WATERBODY CH  Natural pond formed from previous minit  3 ft  95 ft  QUALITATIVE  Clear, slight green tint  Bedrock, silt  Amphibians, migratory birds cleared ROW, mining activities  None  COMM	

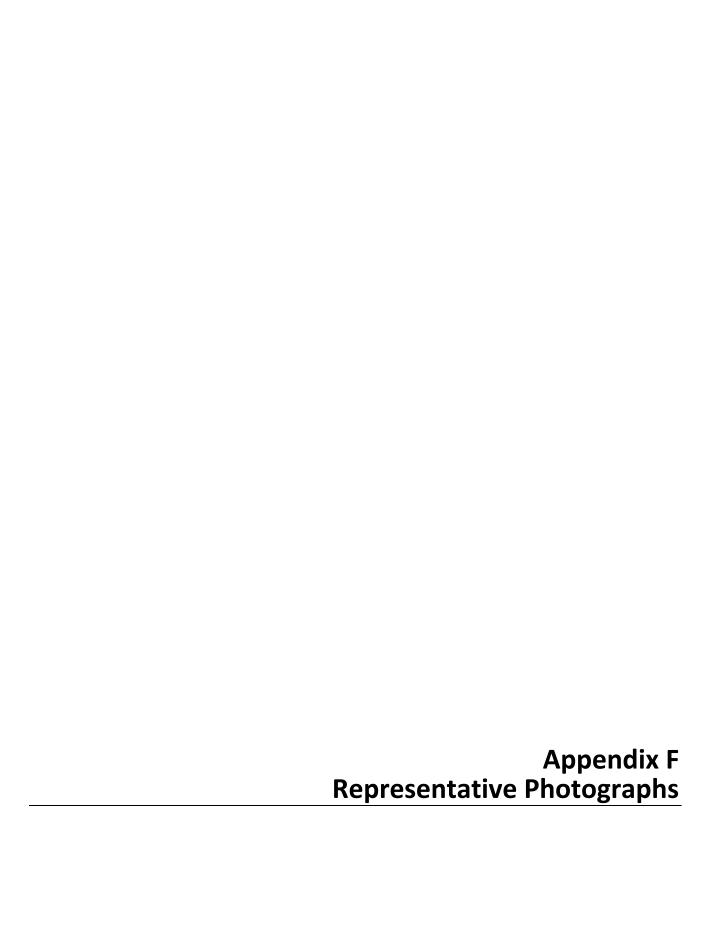
	POND DATA SHEET			
FEATURE ID: P-BAO-051 REPORT ID: POND NH-09		ASSOCIATE	D FEATURES: None	
<b>DATE:</b> 05/17/2018	CLIENT/PROJECT NAME:	: FirstEnergy / H	HOLLOWAY-KNOX 138 KV TRANSMISSION LINE	
INVESTIGATORS: T.Qualio, B.Otto				
STATE/COUNTY: OH / Belmont			IS THIS A MAPPED NWI FEATURE?: PEM1C	
	WA	ATERBODY CH	IARACTERISTICS	
WATERBODY TYPE:	Natural pond formed from	om previous mini	ng activities	
AVG. DEPTH:	2 ft			
Avg. Width (Water Surface):	65 ft			
APPROXIMATE SIZE:	0.16 acres			
QUALITATIVE ATTRIBUTES				
AVERAGE WATER APPEARANCE:	Clear, slight green tint			
PRIMARY SUBSTRATE (IF OBSERVED):	Bedrock, silt			
POTENTIAL HABITAT FOR:	Amphibians, migratory birds			
SURROUNDING LAND USE:	cleared ROW, mining activities			
1				
WETLAND FRINGE (IF PRESENT):	None			
COMMENTS				
Pond formed from previous minir	ng activities.	_		

<del></del>				
	POND DATA SHEET			
FEATURE ID: P-TMQ-052 REPORT ID:	EATURE ID: P-TMQ-05202018-03 EPORT ID:  ASSOCIATED FEATURES: S-TMQ-05022018-06			
<b>DATE:</b> 05/02/2018	CLIENT/PROJECT NAME	: FirstEnergy / Holloway-Knox 138 kV Transmission Line		
INVESTIGATORS: T.Qualio, M. Tho	omayer			
STATE/COUNTY: OH / Carroll	IS THIS A MAPPED NWI FEATURE?:			
	<b>W</b> A	ATERBODY CHARACTERISTICS		
WATERBODY TYPE:	Man-made pond			
AVG. DEPTH:	1.5 ft			
AVG. WIDTH (WATER SURFACE):	160 ft			
APPROXIMATE SIZE:	0.20 acres			
QUALITATIVE ATTRIBUTES				
AVERAGE WATER APPEARANCE:	clear			
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, sand			
POTENTIAL HABITAT FOR:	Amphibians, small fish			
SURROUNDING LAND USE:	Forested, cleared ROW			
WETLAND FRINGE (IF PRESENT):	None			
COMMENTS				
Man-made pond, part of three ma	n-made pond features, fil	led by manipulated stream that flows into first pond and diverts flow through culverts.		

POND DATA SHEET			
FEATURE ID: P-MDT-05/15/2018-03 ASSOCIATED FEATURES: w-mdt-05/15/2018-08			
DATE: 05/15/2018	CLIENT/PROJECT NAME	: FirstEnergy / H	HOLLOWWAY-KNOX 138KV TRANSMISSION LINE
INVESTIGATORS: M. Thomayer, J.	Freer		
STATE/COUNTY: OH/ Belmont			IS THIS A MAPPED NWI FEATURE?: Yes, PUBGx
	WA	ATERBODY CH	HARACTERISTICS
WATERBODY TYPE:	Man-made		
AVG. DEPTH:	14 ft		
AVG. WIDTH (WATER SURFACE):	130 ft		
APPROXIMATE SIZE:	APPROXIMATE SIZE: 0.32 acres		
		Qualitativi	E ATTRIBUTES
AVERAGE WATER APPEARANCE:	slightly turbid, mucky		
PRIMARY SUBSTRATE (IF OBSERVED):	Sand, silt, clay		
POTENTIAL HABITAT FOR:	Amphibians, small fish, various reptiles observed: none		
SURROUNDING LAND USE:	ROW and pasture		
WETLAND FRINGE (IF PRESENT):	Yes, small fringe of catt	ails	
COMMENTS			
Man-made pond near toe of slope in ROW/pasture.			

POND DATA SHEET			
FEATURE ID: P-BAO-05/15/2018-02 ASSOCIATED FEATURES: NONE			D FEATURES: NONE
DATE: 05/15/2018	CLIENT/PROJECT NAME:	FIRSTENERGY / H	HOLLOWWAY-KNOX 138KV TRANSMISSION LINE
INVESTIGATORS: B.Otto, T.Qualio			
STATE/COUNTY: OH/ Harrison IS THIS A MAPPED NWI FEATURE?: None			IS THIS A MAPPED NWI FEATURE?: None
	WA	ATERBODY CH	HARACTERISTICS
WATERBODY TYPE:	Man-made		
AVG. DEPTH:	6 ft		
AVG. WIDTH (WATER SURFACE):	50 ft		
APPROXIMATE SIZE:	0.18 acres		
QUALITATIVE ATTRIBUTES			
AVERAGE WATER APPEARANCE:	Slightly turbid, algal cru	ıst	
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, clay		
POTENTIAL HABITAT FOR:	Amphibians		
SURROUNDING LAND USE:	ROW and old field		
WETLAND FRINGE (IF PRESENT):	No		
COMMENTS			
Man-made pond formed from previous mining			

POND DATA SHEET			
FEATURE ID: P-BAO-05/	ASSOCIATED FEATURES: W-BAO-05/15/2018-01		
DATE: 05/15/2018	CLIENT/PROJECT NAM	e: FirstEnergy / H	HOLLOWWAY-KNOX 138KV TRANSMISSION LINE
INVESTIGATORS: B.Otto, T.Qualio			
STATE/COUNTY: OH/ Harrison Is this a Mapped NWI Feature?: Yes, PEM1F			IS THIS A MAPPED NWI FEATURE?: Yes, PEM1F
	W	ATERBODY CH	HARACTERISTICS
WATERBODY TYPE:	Natural		
AVG. DEPTH:	10 ft		
AVG. WIDTH (WATER SURFACE):	130 ft		
APPROXIMATE SIZE:	1.04 acres		
QUALITATIVE ATTRIBUTES			
AVERAGE WATER APPEARANCE:	Slightly turbid, algal co	rust	
PRIMARY SUBSTRATE (IF OBSERVED):	Silt, clay		
POTENTIAL HABITAT FOR:	Amphibians, small fish, migratory birds		
SURROUNDING LAND USE:	ROW and forested		
WETLAND FRINGE (IF PRESENT):	Yes, wetland W-BAO-0	05/15-2018-01	
COMMENTS			
Natural pond with wetland fringe			





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-1	PEM	NE	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-2	PEM/PSS	SE	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-3	PEM	S	5/14/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-4	PEM/PSS	NE	5/14/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-5	PEM	N	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-6	PEM	S	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-7	PEM	N	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-8	PEM	N	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-9	PEM	SW	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-10	PEM	SE	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-11	PEM	SE	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-12	PEM	SE	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-13	PEM	NE	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-14	PEM	E	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-15	PEM/PSS	NE	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-16	PEM	E	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-17	PEM	W	5/18/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-18	PEM	SW	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-19	PEM	SE	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-20	PEM	E	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-21	PEM	N	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-22	PEM/PSS	E	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-23	PEM	S	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-24	PEM	N	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-25	PEM	SE	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-26	PEM	NW	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-27	PEM	N	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-28	PEM	S	5/21/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-29	PEM	NE	5/21/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-30	PEM	N	5/21/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-31	PEM	NW	5/21/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-32	PEM	E	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-33	PEM	W	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-34	PEM	E	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-35	PEM	SE	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-36	PEM	W	5/22/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-37	PEM	SE	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-38	PEM	W	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-39	PEM	S	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-40	PEM	W	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-41	PSS	E	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-42	PEM	W	5/17/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-43	PEM	N	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-44	PEM	N	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-45	PEM	E	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-46	PEM	W	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-47	PEM	SE	5/16/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-48	PEM	NW	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-49	PEM	SE	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-50	PEM	NE	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-51	PEM	W	5/11/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-52	PEM	W	5/11/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-53	PEM	N	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-54	PEM	S	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-55	PEM/PSS	SE	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-56	PEM	W	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-57	PEM	SW	5/15/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-58	PEM	S	5/10/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-59	PEM	W	5/10/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-60	PEM	NW	5/9/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-61	PEM	W	5/9/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-62	PEM	E	5/9/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-63	PEM	W	5/9/2018



Site Name	<b>Cowardin Class</b>	<b>Photo Direction</b>	Date of Survey
Wetland NH-64	PEM	SE	5/8/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-65	PEM	E	5/8/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-66	PEM	N	5/8/2018



Site Name	Cowardin Class	Photo Direction	Date of /Survey
Wetland NH-67	PEM/PSS	W	5/8/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-68	PEM	E	5/8/2018



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-69	PEM	W	5/8/2018



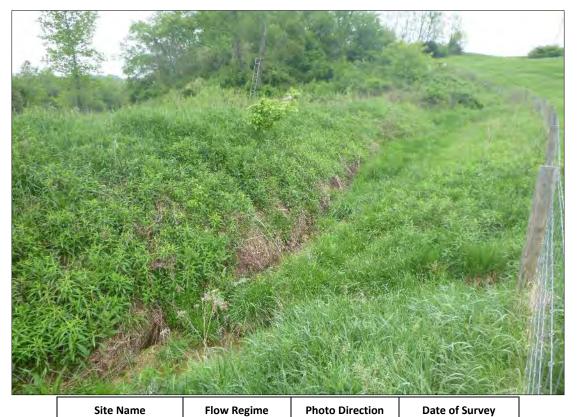
Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland NH-70	PEM/PSS	N	6/26/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-01	Ephemeral	Upstream (SW)	5/15/2018



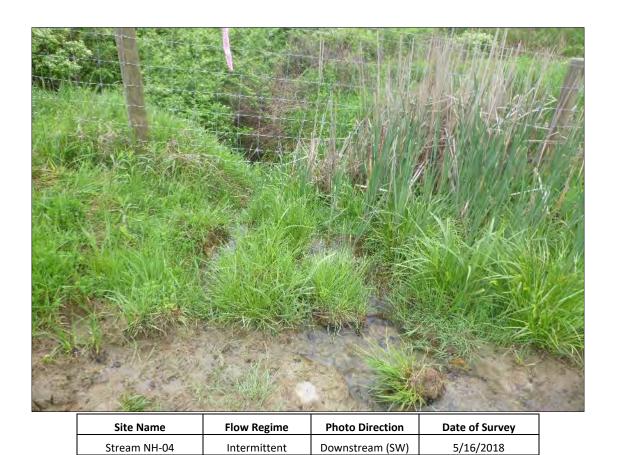
5/16/2018



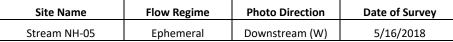
Upstream (NW)

Intermittent

Stream NH-03











Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-07	Ephemeral	Upstream (E)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-08	Perennial	Upstream (NW)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-09	Ephemeral	Upstream (SW)	5/17/2018





Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-11	Intermittent	Upstream (NW)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-12	Perennial	Upstream (SW)	5/21/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-13	Intermittent	Downstream (SE)	5/21/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-14	Perennial	Upstream (SW)	5/21/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-15	Ephemeral	Downstream (NW)	5/21/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-16	Ephemeral	Upstream (SE)	5/22/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-17	Ephemeral	Downstream (E)	5/22/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-18	Ephemeral	Downstream (S)	5/17/2018



Site Name	Flow Regime	<b>Photo Direction</b>	Date of Survey
Stream NH-19	Ephemeral	Downstream (E)	5/17/2018





Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-21	Intermittent	Downstream (SW)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-22	Perennial	Downstream (E)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-23	Perennial	Upstream (SW)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-24	Ephemeral	Downstream (E)	5/17/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-25	Intermittent	Downstream (E)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-26	Ephemeral	Downstream (NE)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-27	Ephemeral	Upstream (S)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-28	Ephemeral	Upstream (N)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-29	Intermittent	Downstream (E)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-30	Intermittent	Upstream (W)	5/16/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-31	Ephemeral	Downstream (SE)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-32	Ephemeral	Upstream (N)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-33	Ephemeral	Downstream (SE)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-34	Ephemeral	Downstream (E)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-35	Ephemeral	Upstream (SW)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-36	Perennial	Upstream (N)	5/11/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-37	Intermittent	Downstream (SW)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-38	Intermittent	Upstream (E)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-39	Ephemeral	Downstream (SW)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-40	Ephemeral	Downstream (SW)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-41	Ephemeral	Downstream (SE)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-42	Ephemeral	Upstream (E)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-43	Intermittent	Upstream (N)	5/15/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-44	Perennial	Upstream (NE)	5/10/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-45	Perennial	Downstream (E)	5/10/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-46	Ephemeral	Downstream (NE)	5/10/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-47	Ephemeral	Downstream (NE)	5/10/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-48	Ephemeral	Downstream (S)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-49	Intermittent	Downstream (E)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-50	Ephemeral	Downstream (NE)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-51	Intermittent	Downstream (NE)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-52	Ephemeral	Upstream (W)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-53	Intermittent	Downstream (N)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-54	Ephemeral	Downstream (NW)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-55	Ephemeral	Upstream (S)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-56	Ephemeral	Downstream (SE)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-57	Intermittent	Downstream (S)	5/9/2018



Site Name	Flow Regime	Photo Direction	Date of Survey
Stream NH-58	Ephemeral	Downstream (SW)	5/9/2018

## This foregoing document was electronically filed with the Public Utilities Commission of Ohio Docketing Information System on

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in

Case No(s). 23-0141-EL-BLN

Summary: Application (Part 4 of 5) electronically filed by Mr. Christopher K. Riedel on behalf of American Transmission Systems Incorporated