LARGE FILING SEPARATOR SHEET

CASE NUMBER 12 - 1727 - EL - BSB

FILE DATE ///9/2012

SECTION: 4 OF 4

NUMBER OF PAGES: 105

DESCRIPTION OF DOCUMENT: Application

Project/Site: Glenwillow Substation	City/County: Cuyahoga Sampling Date: 07/18/12
Applicant/Owner: First Energy	City/County: Cuyahoga Sampling Date: 07/18/12 State: OH Sampling Point: cfbw u
Investigator(s): Flannagan	
	Section, Township, Range:Convex
Landform (hillslope, terrace, etc.): summit	Local relief (concave, convex, none): CONVEX WGS 84
Slope (%): Cr: Onville silt loam, frequently flooder	Long: Datum: WGS 84 d NWI classification: upłand
Are climatic / hydrologic conditions on the site typical for this time of	
Are Vegetation, Soil, or Hydrology significant	tty disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	ng sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area
Hydric Soil Present? Yes No	1 1/1 () 181 . 17
Wetland Hydrology Present? Yes No	
Remarks: (Explain alternative procedures here or in a separate re	
	*
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	
Surface Water (A1) Water-Staine	
High Water Table (A2) Aquatic Faur	
Saturation (A3) Marl Deposit	
Water Marks (B1) Hydrogen Su	ulfide Odor (C1)
	izospheres on Living Roots (C3) 🔲 Saturation Visible on Aerial Imagery (C9)
	Reduced iron (C4) Stunted or Stressed Plants (D1)
	Reduction in Tilled Soils (C6) Geomorphic Position (D2)
I Iron Deposits (B5) I Inundation Visible on Aerial Imagery (B7) Other (Expla	urface (C7) Shallow Aquitard (D3) in in Remarks) Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	<u>= 17,10 (1001,1001,1007)</u>
Surface Water Present? Yes No X Depth (inche	es):
	es):
· ·	es): Wetland Hydrology Present? Yes No X
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial pho	otae provious inspections) if available:
Sessible Nesorged Data (stream gauge, monitoring wen, aenai pin	Stock processes in approximately, in available.
Remarks:	

١	/EG	ETA	TION	- Use	scientific	names of	f plants.
1		1 LL 1 /-	1 I I I I I I I I	- O2G	50 CH 111110	Hallies U	ı pıaı ilə.

Sampling Point: cfbw u

	Absolute	Dominant	Indicator	B. Disass Parking design
<u>Tree Stratum</u> (Plot size: 30	% Cover	Species?	Status	Dominance Test worksheet:
1. Tilia americana	_ 20	Y	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2. Carya ovata	40	Y	FACU	
3. Prunus serotina	20	Y	FACU	Total Number of Dominant Species Across All Strata: 5 (B)
4	-			Bases of Deminent Species
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7	00			Total % Cover of: Multiply by:
15		= Total Cov	/er	OBL species x1=
Sapling/Shrub Stratum (Plot size: 15)				FACW species x 2 = FAC species x 3 =
1.				FACU species x 4 =
2		· 	*******	UPL species x5 =
3		. <u></u>		Column Totals: (A) (B)
4				()
5				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophytic Vegetation
	^	= Total Cov	/er	Dominance Test is >50%
Herb Stratum (Plot size: 5		, otal oo		Prevalence Index is ≤3.0¹
Holcus latanus	70	Υ	FACU	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2 Carya ovata	20	N	FACU	Problematic Hydrophytic Vegetation (Explain)
3 Solidago canadensis	25	<u>Y</u>	FACU	Problematic Flydrophytic Vegetation (Explain)
		· · · · · · · · · · · · · · · · · · ·		¹Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5	- ——			Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub - Woody plants less than 3 in. DBH
9.				and greater than 3.28 ft (1 m) tall.
10				Herb All herbaceous (non-woody) plants, regardless
11.	-		-	of size, and woody plants less than 3.28 ft tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	115	= Total Cov	ier .	height.
Woody Vine Stratum (Plot size; 15)		- rotal out		
1		***************************************		
2.				1
3		****		Hydrophytic Vegetation
4				Present? Yes No X
71	0 = Total Cover		er .	riesenti resnono
	0	= Total Cov		Present? Yes No ^

Sampling Point; cfbw u

S	O	ŧ	L

Depth	Matrix			x Feature	<u>s</u>		the absence of indicators	
(inches) 0-3	Color (moist) 10YR 3/3	<u>%</u> 100	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
3-9	10YR 4/3	100	-				CL -	
9-13	10YR 5/4	100					CL	
-					Adam deliberation			
		-						
-								
Type: C=C	Concentration D=Der	detion RN	/=Reduced Matrix, CS	=Covere	d or Coate	d Sand G	rains. ² Location: PL=Po	ore Lining, M=Matrix.
Hydric Soil Histoso Histoso Histoso Histoso Histoso Histoso Histoso Histoso Hydrog Stratifie Deplete Thick D Sandy I Sandy I Strippe Dark Si	Indicators: In (A1) Inpipedon (A2) Institution (A3) Institution (A4) Indicators (A5) Indicators (A5) Indicators (A5) Indicators (A12) Indicato	ce (A11) MLRA 149	Polyvalue Belov MLRA 149B Thin Dark Surfa Loamy Mucky M Loamy Gleyed Depleted Matrix Redox Dark Su Depleted Dark S Redox Depress	v Surface loce (S9) (I dineral (F Matrix (F2 (F3) rface (F6) Surface (F8)	(S8) (LRF LRR R, MI 1) (LRR K ?)	RR, _RA 149B , L)	Indicators for Problems 2 cm Muck (A10) (L Coast Prairie Redox 5 cm Mucky Peat or Dark Surface (S7) (I Polyvalue Below Su Thin Dark Surface (SI Iron-Manganese Ma Piedmont Floodplair Mesic Spodic (TA6) Red Parent Material Very Shallow Dark S Other (Explain in Re	RR K, L, MLRA 149B) ((A16) (LRR K, L, R) (Peat (S3) (LRR K, L, R) LRR K, L) (face (S8) (LRR K, L) (S9) (LRR K, L) (S89) (LRR K, L) (S89) (LRR K, L) (S98) (F12) (LRR K, L, R) (S018 (F19) (MLRA 149B) (MLRA 144A, 145, 149B) (ITF2) (Surface (TF12)
Restrictive Type:	Layer (if observed)	:		·				
Depth (ir	nches):		Productive Pro-Tr.				Hydric Soil Present?	Yes No X
Remarks:								

Project/Site: Glenwillow Su	bstation	City/County: Cu	iyahoga	Sampling Date: 07/18/12
Applicant/Owner: First Energ	ду		State: OH	Sampling Date: 07/18/12 Sampling Point: cfby w
Investigator(s). Flannagan		Section, Towns		. •
Landform (hillslope, terrace, et	c.): depression		I relief (concave, convex, none)	concave
Clara /0/3, U-Z	41.3661	Long: -81.459	396	Datum: WGS 84
Soil Map Unit Name: WaB: V	Vadsworth silt loam,	2-6% slopes	396 NWI classific	cation: PFO
Are climatic / hydrologic condit	ions on the site typical for	r this time of year? Yes X	No (If no, explain in F	Remarks.)
			Are "Normal Circumstances"	
Are Vegetation, Soil				
				, important features, etc.
		X Is the Sa	impled Area	
Hydrophytic Vegetation Present?	Yes X		Wetland? Yes X	No
Wetland Hydrology Present?			tional Wetland Site ID:	
Remarks: (Explain alternative	· · · · · · · · · · · · · · · · · · ·	7	MONEY PRESENT ONE ID.	
	e ponded for severa		located throughout this fo thus preventing vegetation	on to establish. Uncertain
HYDROLOGY				
Wetland Hydrology Indicato	ors:		Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum	of one is required; check	all that apply)	Surface Soil	Cracks (B6)
Surface Water (A1)	_	Water-Stained Leaves (B9)	Drainage Pa	` '
High Water Table (A2)		Aquatic Fauna (B13)	Moss Trim L	
Saturation (A3) Water Marks (B1)	=	Marl Deposits (B15)		Water Table (C2)
Water Marks (B1) Sediment Deposits (B2)		Hydrogen Sulfide Odor (C1) Oxídized Rhizospheres on Livin	Crayfish Bur	isible on Aerial Imagery (C9)
Drift Deposits (B3)		Presence of Reduced Iron (C4)	- Company	tressed Plants (D1)
Algal Mat or Crust (B4)	=	Recent Iron Reduction in Tilled		Position (D2)
Iron Deposits (B5)		Thin Muck Surface (C7)	Shallow Aqu	1
Inundation Visible on Aer	rial Imagery (B7) 🔲 🧘	Other (Explain in Remarks)	Microtopogra	aphic Relief (D4)
Sparsely Vegetated Cond	cave Surface (B8)		FAC-Neutra	Test (D5)
Field Observations:	X	Depth (inches):		
Surface Water Present?		Depth (inches):		
Water Table Present? Saturation Present?		Depth (inches):	- Wetland Hydrology Prese	nt? Yes X No
(includes capillary fringe)				III 165 IVU
Describe Recorded Data (stre	eam gauge, monitoring w	ell, aerial photos, previous insp	ections), if available:	
Remarks:				
l				

VEGETATION - Use scientific names of plants.

Sampling Point: cfby w

Tree Stratum (Plot size:)	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet:
	·	Number of Dominant Species
1		That Are OBL, FACW, or FAC:(A)
2		Total Number of Dominant Species Across All Strata: (B)
3		
4		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
5		That Ale Obl., FACW, of FAC. (AD)
6		Prevalence Index worksheet:
7.		Total % Cover of: Multiply by:
	= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:	<u></u>	FACW species x 2 =
1,		FAC species x 3 =
2		FACU species x 4 =
3.		UPL species x 5 =
		Column Totals: (A) (B)
4		Prevalence Index = B/A =
5		Hydrophytic Vegetation Indicators:
6		Rapid Test for Hydrophytic Vegetation
7		Dominance Test is >50%
	= Total Cover	Prevalence Index is ≤3.0°
Herb Stratum (Piot size;)		Morphological Adaptations (Provide supporting
1.		data in Remarks or on a separate sheet)
2.	<u> </u>	Problematic Hydrophytic Vegetation ¹ (Explain)
3		1
4.		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5		
6.		Definitions of Vegetation Strata:
		Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7		at breast height (DBH), regardless of height.
8		Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9		
10.		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11.		of size, and woody plants less than 5.20 it tail.
12.		Woody vines – All woody vines greater than 3.28 ft in height.
	= Total Cover	noight.
Woody Vine Stratum (Plot size:)		
1,		
2		
3.		Hydrophytic
~·		Vonetation
4,	= Total Cover	Present? Yes No X

amolina	Daint	cfby	٧

81	ЭI	1
	_	_

Profile Desc	ription: (Describe	to the de	oth needed to docum	ent the	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Feature			
(inches) 0-3	Color (moist) 10YR 3/3	<u>%</u> 100	Color (moist)	%	_Type¹_	Loc ²	Texture Remarks
3-15	10YR 4/1	90	10YR 5/8	10	С	M	CL
¹Type: C=Cc Hydric Soil I Histosol Histic Ep Black His	oncentration, D=Dep ndicators: (A1) ipedon (A2)		Polyvalue Belov MiLRA 149B) Thin Dark Surfa Loamy Mucky M	=Coverer v Surface ce (S9) (I	(S8) (LR	ed Sand Gr	rains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : 2 cm Muck (A10) (LRR K, L, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R)
Depleted Thick Da Sandy M Sandy G	l Below Dark Surface irk Surface (A12) lucky Mineral (S1) leyed Matrix (S4)	e (A11)	Depleted Matrix Redox Dark Sur Depleted Dark S Redox Depress	(F3) face (F6) Surfac e (F			Thin Dark Surface (S9) (LRR K, L) Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Stripped	edox (S5) Matrix (S6) face (S7) (LRR R, N	ILRA 149	B)				Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
			etland hydrology mus	t be pres	ent, unles	s disturbed	or problematic.
Type:	.ayer (if observed):						
Depth (inc	:hes):						Hydric Soil Present? Yes X No
Remarks:							

Project/Site: Glenwillow Substation	City/County: Cuyahoga Sampling Date: 07/18/12
Applicant/Owner: First Energy	City/County: Cuyahoga Sampling Date: 07/18/12 State: OH Sampling Point: cfcb w
Eleppede	Section, Township, Range:
Landform (hillslope, terrace, etc.): Summit	Local relief (concave, convex, none): CONVEX/CONCAVE
Slope (%): 3-8 Lat: 41.366501	-81.458099 WGS 84
Soil Map Unit Name: WaB: Wadsworth silt loam, 2-6% slope	Long: -81.458099 Datum: WGS 84
Are climatic / hydrologic conditions on the site typical for this time of ye	
	disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology naturally pro-	oblematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area
Hydric Soil Present? Yes X No	within a Wetland? Yes X No
Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedures here or in a separate repo	
HYDROLOGY	
HYDROLOGY	Consider the disable that the second of the
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required) Surface Soil Cracks (B6)
Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Water-Stained	no.
High Water Table (A2) Aquatic Fauna	= 5/4/10g / 5/6/10 (5/6)
Saturation (A3) Marl Deposits (
☐ Water Marks (B1) ☐ Hydrogen Sulfi	
Sediment Deposits (B2) Schized Rhize	spheres on Living Roots (C3) 🔲 Saturation Visible on Aerial Imagery (C9)
	educed Iron (C4) Stunted or Stressed Plants (D1)
	duction in Tilled Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Thin Muck Surf	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches (includes capillary fringe)	: Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photo	os, previous inspections), if available:
Remarks:	
1	

30	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30)		Species?		Number of Deminant Cassins
1. Acer rubrum 2 Ulmus americana	60 35	Y Y	FACW	That Are OBL, FACW, or FAC: 5 (A)
3 Fraxinus pennsylvanica	- 5	N	FACW	Total Number of Dominant
3. Traxinus pernisyivanica			FACVV	Species Across All Strata: (B)
4			***************************************	Percent of Dominant Species 100
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7		***************************************	. *************	Total % Cover of: Multiply by:
	100	= Total Cov	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15)				FACW species x 2 =
1.				FAC species x 3 =
Lindera benzoin	30	Y	FACW	FACU species x4 =
3. Carpinus caroliniana	25	Y	FAC	UPL species x 5 =
		•		Column Totals: (A) (B)
5				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophylic Vegetation
	55	= Total Cov		Dominance Test is >50%
Herb Stratum (Plot size: 5)		- Total Co	vei	Prevalence Index is ≤3.0¹
<u>Herb Stratum</u> (Plot size: <u>9</u> _{1.} Fraxinus pennsylvanica	35	Υ	FACW	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2.				Problematic Hydrophytic Vegetation¹ (Explain)
3.				
4				¹Indicators of hydric soil and wetland hydrology must
				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree - Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9				and greater than 5.26 ft (1 ft) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12			***************************************	Woody vines - All woody vines greater than 3.28 ft in height.
	35	= Total Cov	er	luciane
Woody Vine Stratum (Plot size: 15				
1	·			
2				
3				Hydrophytic
4.				Vegetation
	0	= Total Cov	rer	Present? Yes X No
Remarks: (include photo numbers here or on a separate	sheet.)			
				i

Sampling	Daint	cfcb	W
Jamping	FURR.		

SOIL

Profile Desc	cription: (Describe	to the de				or confirm	n the absence of indicators.)
Depth	Matrix	%		x Feature		Loc ²	Texture Remarks
(inches) 0-3	Color (moist) 10YR 3/3	100	Color (moist)	%	Type1_	LOG	Texture Remarks
3-9	10YR 4/2	95	10YR 5/6	5	C	M	SiCL
9-18	10YR 5/2	90	10YR 5/8	10	С	М	SiCL
					. —		
			,		. 		
					. <u> </u>		
ļ 				*			
					- ——		
Type: C=C	anapatratian D-Da	nlation Di	I=Reduced Matrix, C		d or Coate	d Sand G	rains. ² Location: PL=Pore Lining, M≈Matrix.
Hydric Soil		pieuon, reiv	=Reduced Matrix, C	2=Covere	e or Coale	a Sana Gi	Indicators for Problematic Hydric Soils ³ :
Histosol			Polyvalue Belo		(S8) (LRI	₹ ₹,	2 cm Muck (A10) (LRR K, L, MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R)
Black Hi	oipedon (A2) stic (A3)		MLRA 149B Thin Dark Surfa	•	LRR R, M	LRA 149B	
	n Sulfide (A4)		Loamy Mucky			., L)	Dark Surface (S7) (LRR K, L)
	d Layers (A5) d Below Dark Surfac	ce (A11)	Loamy Gleyed Depleted Matri		2)		Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)
	ark Surface (A12)	50 (, 1 , 1,	Redox Dark Su	rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Depleted Dark				Piedmont Floodplain Soils (F19) (MLRA 149B)
	Sleyed Matrix (S4) ledox (S5)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (TF2)
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)
La Dark Su	rface (S7) (LRR R, I	MLRA 149	B)				Other (Explain in Remarks)
			etland hydrology mu	st be pres	ent, unles:	disturbed	1 or problematic.
Restrictive I	Layer (if observed)	:					
Depth (inc	ches):						Hydric Soil Present? Yes X No
Remarks:							

Project/Site: Glenwillow Sub	station	City/C	cunty. Cuya	ıhoga		Sampling Date: 0	7/18/12
Applicant/Owner: First Energy		Ony/O			State: OH	Sampling P	oint: cfcb u
Investigator(s): Flannagan		Section	on, Township.				
Landform (hillslope, terrace, etc.							
Slope (%): 0-2 Lat:	,	Long:				Datum: WGS 84	4
Slope (%): 0-2 Lat: Soil Map Unit Name: WaB: Wa	adsworth silt loam, 2	2-6% slope			NWI classific	_{ation:} Upland	
Are climatic / hydrologic conditio							
Are Vegetation, Soil							No
Are Vegetation, Soil				If needed, expla			
SUMMARY OF FINDINGS							atures, etc.
Hydrophytic Vegetation Preser	nt? Yes	_{No} X	Is the Sam	pled Area			
Hydric Soil Present?	Yes	No X	within a We	etland?	Yes	No X	
Wetland Hydrology Present? Remarks: (Explain alternative	Yes	No X	If yes, option	nal Wetland Site	D;		
LIVEROL OCY							
HYDROLOGY Wetland Hydrology Indicator				Sa	condany Indica	tors (minimum of t	wo required)
Primary Indicators (minimum of		all that anniv)		<u> </u>	Surface Soil		wo required)
Surface Water (A1)		Vater-Stained Leave	s (B9)		Drainage Pat	` '	
High Water Table (A2)		quatic Fauna (B13)			Moss Trim Li	• •	
Saturation (A3)		farl Deposits (B15)				Water Table (C2)	-
Water Marks (B1)		lydrogen Sulfide Odd			Crayfish Buri		
Sediment Deposits (B2)		Oxidized Rhizosphere	-	Roots (C3)		sible on Aerial Ima	
Drift Deposits (B3) Algal Mat or Crust (B4)		resence of Reduced Recent Iron Reduction		ils (C6)	Geomorphic	ressed Plants (D1 Position (D2))
Iron Deposits (B5)		hin Muck Surface (C		"3 (00)	Shallow Aqui		
Inundation Visible on Aeria	beni	Other (Explain in Ren	·			phic Relief (D4)	
☐ Sparsely Vegetated Conca	ive Surface (B8)				FAC-Neutral	Test (D5)	
Field Observations:	V X	Davide Carlos					
Surface Water Present? Water Table Present?	Yes No X I	Depth (inches): Depth (inches):					
Saturation Present?		Depth (inches):		Wetland Hydr	ology Presen	t? Yes	No X
(includes capillary fringe)							
Describe Recorded Data (strea	ım gauge, monitoring we	ni, aeriai priotos, pre	vious inspect	ions), ii availabi	e :		
Remarks:							

VEGETATION – Use scientific names of plants.

PATROLIN AL	Absolute	Dominant	Indicator	
<u>Tree Stratum</u> (Plot size: 30		Species?		Dominance Test worksheet:
1 Carya ovata	60	Y	FACU	Number of Dominant Species That Are OPI, FACING - FACING - 4
2 Ulmus americana	40	Y	FACW	That Are OBL, FACW, or FAC: (A)
2. Office afficiation		<u></u>		Total Number of Dominant
3				Species Across All Strata: 10 (B)
4				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
5				That Are OBL, FACEV, of FAC. (A/B)
6.				Prevalence Index worksheet:
7	400			Total % Cover of: Multiply by:
		= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15)				FACW species x 2 =
1 Carya ovata	30	Υ	FACU	FAC species x 3 =
2 Ulmus americana	10	N	FACW	FACU species x 4 =
3 Cretaegus sp.	_ _	Y	NI	UPL species x 5 =
		·		Column Totals: (A) (B)
4. Acer rubrum	15	Υ	FAC	
5				Prevalence Index = B/A =
			· ——	Hydrophytic Vegetation Indicators:
6				
7				Rapid Test for Hydrophytic Vegetation
	70	= Total Co	ver	Dominance Test is >50%
Herb Stratum (Plot size: 5)				Prevalence Index is ≤3.0¹
1 Elymus hystrix	20	Υ	FACU	Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
2. Leersia oryzoides	20	<u>Y</u>	OBL	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Fraxinus pennsylvanica	15	Υ	FACW	
Allium cernuum	 15	Y	UPL	¹ Indicators of hydric soil and wetland hydrology must
т.	15	Y		be present, unless disturbed or problematic.
_{5.} Rosa multiflora	_ 13	1	FACU	Definitions of Vegetation Strata:
6				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
				at breast neight (DDH), regardless of height.
8		***************************************	************	Sapling/shrub - Woody plants less than 3 in. DBH
9,				and greater than 3.28 ft (1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
				of size, and woody plants less than 3.28 ft tall.
11.				
12				Woody vines ~ All woody vines greater than 3.28 ft in height.
	85	= Total Co	ver	rieight.
Woody Vine Stratum (Plot size: 15)				
1.				
2				
3				Hydrophytic
4			·	Venetation
4.	- 0 -			Present? Yes No X
		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			
•				

Sampling	Doint	cfcb	u
Sembining	i Ollik.		

						or contirr	n the absence of Indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature %	Type [†]	Loc²	Texture Remarks
0-4	10YR 3/3	100			1100		L
4-10	10YR 4/4	100	<u> </u>	 			L
10-16	10YR 5/3	90	10YR 6/8	5	С	М	CL
			10YR 5/1	5	D	М	
			-				
							
				.			
····							
				-	 		
***************************************			_ 		***************************************		
¹Type: C=C	oncentration. D=De	oletion. RI	M=Reduced Matrix, C	S=Covere	d or Coate	ed Sand G	rains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil		p 1					Indicators for Problematic Hydric Soils ³ :
Histosol			Polyvalue Beid		(S8) (LR	R R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pipedon (A2) istic (A3)		MLRA 1498 Thin Dark Surf		LOD D. M	1 17 A 440D	Coast Prairie Redox (A16) (LRR K, L, R) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
	on Sulfide (A4)		Loamy Mucky				Dark Surface (S7) (LRR K, L)
	d Layers (A5)		Loamy Gleyed			-,	Polyvalue Below Surface (S8) (LRR K, L)
	d Below Dark Surfa	ce (A11)	Depleted Matri				Thin Dark Surface (S9) (LRR K, L)
	ark Surface (A12)		Redox Dark St				Iron-Manganese Masses (F12) (LRR K, L, R)
	Mucky Mineral (S1) Bleyed Matrix (S4)		Depleted Dark Redox Depres				Piedmont Floodplain Soils (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Redox (S5)			······ (, · · ,			Red Parent Material (TF2)
	Markety (CC)						Very Shallow Dark Surface (TF12)
Stripped							Other (Explain in Remarks)
	rface (S7) (LRR R,	MLRA 14	9B)				
Dark Su Jandicators o	rface (S7) (LRR R, f hydrophytic veget	ation and v	9B) wetland hydrology mu	st be pres	ent, unles	s disturbed	
Dark Su Indicators o Restrictive	rface (S7) (LRR R,	ation and v		st be pres	ent, unles	s disturbed	
Dark Su alindicators o Restrictive i Type:	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	
Dark Su Jandicators o Restrictive Type:	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su Jandicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.
Dark Su alindicators o Restrictive i Type: Depth (in	rface (S7) (LRR R, f hydrophytic veget Layer (if observed	ation and v		st be pres	ent, unles	s disturbed	t or problematic.

Project/Site: Glenwillow Su	ubstation	City/C	county. Cuya	hoga		Sampling Date: 0	7/18/12
Applicant/Owner: First Ener		0.070	····) ·		State: OH	Sampling Date: $\frac{0}{2}$	oint cfcc w
Investigator(s): Flannagan		Section	on Township	Panan		Cemping (Oint.
Landform (hillslope, terrace, e		OCCIN		·	convex, none):	concave	
Slope (%): 0-2 Lat:	41.367001		Local le	4	convex, none;.	Datum: WGS 84	4
Soil Map Unit Name: WaB: V	Nadsworth silt loam	Long: , 2-6% slopes				PSS	
Are climatic / hydrologic condi							
Are Vegetation, Soil				re "Normal Ci	rcumstances" p	resent? Yes 🔼	No
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (f needed, exp	lain any answe	rs in Remarks.)	
SUMMARY OF FINDING	GS – Attach site п	nap showing san	npling poir	nt locations	s, transects	, important fe	atures, etc.
Hudronhutia Vacatatian Broa	sent? Yes X	No	is the Samp	oled Area			
Hydrophytic Vegetation Pres Hydric Soil Present?	Yes X	No	within a We		Yes X	No	
Wetland Hydrology Present?	V	No	If ves. option	nal Wetland Si			
Remarks: (Explain alternative			it yes, opasi	iai vvotaria ci	, , , , , , , , , , , , , , , , , , ,		
							48-alista - January (n. 1884), n. 1884
HYDROLOGY							
Wetland Hydrology Indicat				<u></u>	4	tors (minimum of t	lwo required)
Primary Indicators (minimum	of one is required; chec				3		
Surface Water (A1)	<u>L.1</u>	Water-Stained Leave			Drainage Pat		
High Water Table (A2)	닐	Aquatic Fauna (B13)		-	Moss Trim Li		
Saturation (A3) Water Marks (B1)		Marl Deposits (B15) Hydrogen Sulfide Od			Crayfish Buri	Water Table (C2)	
Sediment Deposits (B2)		Oxidized Rhizospher		Roots (C3)	-	sible on Aerial Ima	agery (C9)
Drift Deposits (B3)		Presence of Reduced		Ľ		tressed Plants (D1	
Algal Mat or Crust (B4)		Recent Iron Reduction		ls (C6)	71	Position (D2)	
Iron Deposits (B5)		Thin Muck Surface (C		<u> </u>	Shallow Aqui	, ,	
Inundation Visible on Ae	· · · · · · · · · · · · · · · · · · ·	Other (Explain in Rer	marks)	L	*	phic Relief (D4)	
Sparsely Vegetated Con	cave Surface (B8)		———	<u> </u>	FAC-Neutral	Test (D5)	
Field Observations: Surface Water Present?	Van Na X	_ Depth (inches):					
Water Table Present?		Depth (inches):					
Saturation Present?	Yes No X	Depth (inches):	· ·	Wetland Hyd	Irology Presen	nt? Yes X	No
(includes capillary fringe)							
Describe Recorded Data (str	eam gauge, monitoring v	well, aeriai photos, pre	vious inspecti	ions), if availa	Die:		
Remarks:							
					*		

<u></u>				y
Tree Stratum (Plot size: 30)		Dominant Species?		Dominance Test worksheet:
				Number of Dominant Species That Are OBL FACW or FAC: 2 (A)
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
				That Are OBL, FACW, or FAC: 66 (A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	0	= Total Cov	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15)				FACW species x 2 =
1 Lindera benzoin	40	Υ	FACW	FAC species x 3 =
l ',	10	Ÿ	FACU	FACU species x 4 =
2. Rosa multiflora	. —	<u> </u>	-ACU	UPL species x 5 =
3				
4				Column Totals: (A) (B)
				Prevalence Index = B/A =
5				
6				Hydrophytic Vegetation Indicators:
7	. ——			Rapid Test for Hydrophytic Vegetation
	50	= Total Cov	ver	Dominance Test is >50%
Herb Stratum (Plot size: 5)				Prevalence Index is ≤3.0¹
1 Lindera benzoin	20	N	FACW	Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
2. Leersia oryzoides	85	<u>Y</u>	OBL	Problematic Hydrophytic Vegetation¹ (Explain)
3. Parathelypteris noveboracensis	10	N	FAC	
4. Elymus hystrix	10	N	FACU	Indicators of hydric soil and wetland hydrology must
· · · · · · · · · · · · · · · · · · ·				be present, unless disturbed or problematic.
5	· 			Definitions of Vegetation Strata:
6				Trace Manda plants 3 in (7.6 am) as a series dismates
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8.				
				Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9				and greater than 3.20 it (1 iii) tail.
10				Herb - All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.				Woody vines - All woody vines greater than 3.28 ft in
	125	- T-4-1 O-		height,
15	,	= Total Cov	/er	
Woody Vine Stratum (Plot size: 15)				
1				
2				
		7	***************************************	
3.				Hydrophytic Vegetation
4				Present? Yes X No
	0	= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate s	heet.)		************	
				ļ

Sampling Point: cfcc w

Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confir	m the absence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	x Featur	esType ¹	_Loc²	Texture Remarks
0-4	10YR 4/1	90	10YR 5/6	10	C	M	CL
4-9	10YR 4/2	90	10YR 5/4	10	- c		CL
9-18	10YR 4/4	90	10YR 5/6	- 10 5	- č	. <u></u> M	CL
1			10YR 4/2	5	D	M	
			10111412	- —			
			-				
						• •••••	
		····		_			
				-			
·				-			
Type: C=C	oncentration D-De	ntetion PA	/≅Reduced Matrix, C	S=Cover	ed or Coat	ed Sand G	irains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil		hiedou' Lau	-Neduced Matrix, C	3-00461	eu o: Coai	cu oanu o	Indicators for Problematic Hydric Soils ³ :
Histosol			Polyvalue Belo	w Surfaç	e (S8) (LR	RR,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pípedon (A2)		MLRA 149B		// DD D N	U DA 4400	Coast Prairie Redox (A16) (LRR K, L, R) 5 cm Mucky Peat or Peat (\$3) (LRR K, L, R)
20000	istic (A3) en Sulfide (A4)		Thin Dark Surfa				Dark Surface (S7) (LRR K, L)
Stratifie	d Layers (A5)		Loamy Gleyed			-,	Polyvalue Below Surface (S8) (LRR K, L)
	d Below Dark Surfac	ce (A11)	Depleted Matri		.,		Thin Dark Surface (S9) (LRR K, L)
	ark Surface (A12) /ucky Mineral (S1)		Redox Dark Su Depleted Dark				☐ Iron-Manganese Masses (F12) (LRR K, L, R) ☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
	Gleyed Matrix (\$4)		Redox Depress				Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	Redox (\$5)						Red Parent Material (TF2)
	l Matrix (S6) Irface (S7) (LRR R, I	MI DA 440	ID\				☐ Very Shallow Dark Surface (TF12) ☐ Other (Explain in Remarks)
Les Daik Su	mace (G/) (ERK K,	WILKA 148	, do				Other (Explain in Remarks)
			etland hydrology mu	st be pre	sent, unles	s disturbed	d or problematic.
	Layer (if observed)	:					
Type:	-h)						Hydric Soil Present? Yes X No
Depth (in Remarks:	cnes):	*** ***					Trydrio don't leading the
Nemains.							

Project/Site: Willowgrove Transmission	City/County:		Sampling Date: 7/23/12
Applicant/Owner: First Energy			Sampling Point: TSDK
Investigator(s): Shinskey			
	Local re		
Slope (%): 0 - 2% Lat: 41.3675694007	Long: -81.4599	642666	Datum: WGS84
Soil Map Unit Name: WaB Wadsworth silt loam, 2	to 6 percent slopes	NIA# classific	PEM/PSS
Are climatic / hydrologic conditions on the site typical for the			
Are Vegetation, Soil, or Hydrology	•	Are "Normal Circumstances" p	
Are Vegetation, Soil, or Hydrology	naturally problematic?	if needed, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing sampling poi	nt locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes ✓ 1	No is the Sam		
Hydric Soil Present? Yes 🗸		etland? Yes <u>√</u>	No
		nal Wetland Site ID:	
Remarks: (Explain alternative procedures here or in a se			
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply)	✓ Surface Soil (Cracks (B6)
Surface Water (A1)	iter-Stained Leaves (B9)	Drainage Pat	
·	uatic Fauna (B13)	Moss Trim Li	
	rl Deposits (B15)		Vater Table (C2)
	drogen Sulfide Odor (C1)	Crayfish Burr	· '
· · · · · · · · · · · · · · · · · · ·	idized Rhizospheres on Living F		sible on Aerial Imagery (C9)
i e	esence of Reduced fron (C4) cent fron Reduction in Tilled So		ressed Plants (D1)
,	cent fron Reduction in Filled So in Muck Surface (C7)	olis (C6) Geomorphic of Shallow Aqui	` '
	ner (Explain in Remarks)		phic Relief (D4)
✓ Sparsely Vegetated Concave Surface (B8)	tor (Explain at the England)	✓ FAC-Neutral	· · · · · ·
Field Observations:			1001(2.5)
Surface Water Present? Yes No ✓ De	epth (inches):	•	
	epth (inches):		
Saturation Present? Yes ✓ No De		Wetland Hydrology Presen	t? Yes_ <u>√</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well,	parial photos, previous inspect	ione) if available:	
Describe Macolded Data (stream Savge, monthshing ment	delles pitotos, provious insposi	.ions), ii avanobie.	
Remarks:			
Feature consists of a number of depressions k	ocated on a terrace, in clo	ose proximity to each oth	ier.
			I

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 20		Species?		Dominance Test worksheet:
1 Fraxinus pennsylvanica	10	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
2 Fagus grandifolia	10	Yes	FACU	That Are OBL, FACW, or FAC: 5 (A)
3 Ulmus rubra	10	Yes	FAC	Total Number of Dominant Species Across All Strata: 7 (B)
Acer saccharum	5	No	FACU	Species Across All Strata: / (B)
			1700	Percent of Dominant Species That Are OBL, FACW, or FAC: 71 % (A/B)
5				That Ale OBL, FACTY, of FAC: 1773 (AV8)
6			·	Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	35	= Total Co	ver	OBL species 40 x 1 = 40
Sapling/Shrub Stratum (Plot size: 20)				FACW species <u>55</u> x 2 = <u>110</u>
1 Fagus grandifolia	5	Yes	FACU	FAC species 10 x3 = 30
2. Lindera benzoin	5	Yes	FACW	FACU species <u>25</u> x 4 = <u>100</u>
				UPL species <u>0</u> × 5 = <u>0</u>
3				Column Totals: 130 (A) 280 (B)
5				Prevalence Index = B/A = 2.15
6.			***************************************	Hydrophytic Vegetation Indicators:
i e		· ·		Rapid Test for Hydrophytic Vegetation
7	10	- T-1-1 O-		✓ Dominance Test is >50%
		= Total Co	ver	✓ Prevalence Index is ≤3.01
Herb Stratum (Plot size: 5) 1. Lindera benzoin	5	No	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2 Onoclea sensibilis	- <u>J</u> 10		FACW	Problematic Hydrophytic Vegetation [†] (Explain)
		No		Problematic Hydrophysic Vegetation (Explain)
3. Fraxinus pennsylvanica	_ 5	No	FACW	¹ Indicators of hydric soil and wetland hydrology must
4. Juncus effusus	_ 10	No	FACW	be present, unless disturbed or problematic.
5. Carex stipata	20	Yes	OBL	Definitions of Vegetation Strata:
6. Hystrix patula	_ 5	No	<u>FACU</u>	The 18/2 also already 2 in 17 C and an area in disperse.
7. Carex stricta	20	Yes	OBL	Tree Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8. Cinna arundinacea	10	No	FACW	Continue to the state of the st
9	-			Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10.				Heath Att hombonsons (was supported whenter repositions
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11.				Mindred Allerander visco mante than 2.20 ft in
12	- 			Woody vines – All woody vines greater than 3.28 ft in height.
	85	= Total Cov	/er	_
Woody Vine Stratum (Plot size: 20)				
1,				
2				
3				Hydrophytic
4.				Vegetation
	0	= Total Cov		Present? Yes No
Remarks: (Include photo numbers here or on a separate		- Total Cov	761	
remains. (more prote hamous note of on a separate	J.,000.,			

Sampling Point: TSDKwet

Profile Desc	ription: (Describe	to the de	oth needed to docum	nent the	indicator	or confirm	m the absence of indicators.)
Depth	Matrix			x Feature	s		
(inches) 0-5	Color (moist) 10YR 2/2	<u>%</u> 90	Color (moist) 2.5YR 3/4	<u>%</u> 10	<u>Type¹</u> C	Loc² PL	Texture Remarks CL
5-14	10YR 5/6	70	2.5YR 4/8	30	<u> </u>	<u></u>	SiC
		· ———				***************************************	
14-18	10YR 5/2	70	5YR 5/8	30	<u> </u>	<u>M</u>	<u>C</u>
	-						
		***************************************			-		
					·		
	T						
***************************************			***************************************				
	*						
	<u> </u>						,
							2
Type: C=Co		letion, RM	=Reduced Matrix, CS	=Covere	d or Coate	ed Sand G	Brains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol			Polyvalue Below	v Surface	(S8) (LRI	R.R.	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pipedon (A2)		MLRA 149B)		,	,	Coast Prairie Redox (A16) (LRR K, L, R)
Black His			Thin Dark Surfa				
	n Sulfide (A4)		Loamy Mucky M			., L)	Dark Surface (S7) (LRR K, L)
	Layers (A5) Below Dark Surface	. (441)	Loamy Gleyed M		:)		Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)
	rk Surface (A12)	, (A 1 1)	✓ Redox Dark Sur				iron-Manganese Masses (F12) (LRR K, L, R)
	lucky Mineral (S1)		Depleted Dark S				Pledmont Floodplain Soils (F19) (MLRA 149B)
	leyed Matrix (S4)		Redox Depressi		•		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)						Red Parent Material (F21)
	Matrix (S6)						Very Shallow Dark Surface (TF12)
Dark Sur	face (S7) (LRR R, N	ILRA 149	B)				Other (Explain in Remarks)
		ion and w	etland hydrology mus	t be prese	ent, unles	s disturbed	d or problematic.
Restrictive L Type: Cla	ayer (if observed):						
Depth (inc	•						Hydric Soil Present? Yes ✓ No
Remarks:	nes)						1.7,0.10 0011100011111111111111111111111111

Project/Site: Willowgrove Tra	nsmission	City/C	county: Cuy	/ahoga		Sampling Date:	7/23/12	
Applicant/Owner: First Energy			•			Sampling		
Investigator(s): Shinskey		Saati				Camping	r Onte.	
• • • • • • • • • • • • • • • • • • • •		Section				none		
Landform (hillslope, terrace, etc.):								
Slope (%): 0 - 2% Lat: 41								
Soil Map Unit Name: WaB Wad	dsworth silt loam	, 2 to 6 percent si	opes		NWI classifica	ation:		
Are climatic / hydrologic conditions	s on the site typical fe	or this time of year? Y	'es 1	40 (If n	o, explain in Re	emarks.)		
Are Vegetation, Soil	_, or Hydrology	significantly distur	bed?	Are "Normal Cir	cumstances" p	resent? Yes <u></u>	No	
Are Vegetation, Soil	, or Hydrology	naturally problema	atic?	(If needed, expl	ain any answer	s in Remarks.)		
SUMMARY OF FINDINGS	– Attach site m	nap showing san	npling poi	nt locations	, transects,	, important fe	eatures, etc.	
Hydrophytic Vegetation Present?	Yes	No	Is the Sam	pled Area				
Hydric Soil Present?		No 🗸	within a W	etland?	Yes	No <u>-</u> /		
Wetland Hydrology Present?		_ No	If yes, optio	nal Wetland Sit	e ID:			
HYDROLOGY								
Wetland Hydrology indicators:				Se	condary Indical	lors (minimum of	two required)	
Primary Indicators (minimum of c								
Surface Water (A1)		Water-Stained Leave						
High Water Table (A2)		Aquatic Fauna (B13)	Moss Trim Lines (B16)					
Saturation (A3) Water Marks (B1)		Mari Deposits (B15) Hydrogen Sulfide Od	· ·					
Sediment Deposits (82)	_	Oxidized Rhizosphere		Roots (C3)	-	sible on Aerial Im	agery (C9)	
Drift Deposits (B3)		Presence of Reduced				ressed Plants (D		
Algal Mat or Crust (B4)	_	Recent Iron Reduction	n in Tilled Sc	oils (C6)	Geomorphic I	Position (D2)		
Iron Deposits (B5)		Thin Muck Surface (C	27)		Shallow Aquil	tard (D3)		
Inundation Visible on Aerial I		Other (Explain in Rer	narks)	e0-540-18		phic Relief (D4)		
Sparsely Vegetated Concavi	e Surface (B8)				FAC-Neutral	Test (D5)		
Field Observations:	on No √	Donath /inches):						
		Depth (inches): Depth (inches):						
		Depth (inches):		Wetland Hyd	rology Presen	t? Yes	No. ✓	
(includes capillary fringe)								
Describe Recorded Data (stream	gauge, monitoring v	vell, aerial photos, pre	vious inspec	tions), if availab	ile:			
Remarks:								

	Absolute	Dominant	indicator	
Tree Stratum (Plot size: 20)	% Cover			Dominance Test worksheet:
1. Prunus serotina	20	Yes	FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2. Quercus alba	20	Yes	FACU	
3 Fagus grandifolia	20	Yes	FACU	Total Number of Dominant Species Across All Strata: 10 (B)
4 Acer saccharum	20	Yes	FACU	
5. Juglans nigra	20	Yes	FACU	Percent of Dominant Species That Are OBL, FACW, or FAC: 20 % (A/B)
				
6				Prevalence Index worksheet:
7	400			Total % Cover of:Multiply by:
	100	= Total Co	ver	OBL species $\frac{0}{5}$ $\times 1 = \frac{0}{10}$
Sapling/Shrub Stratum (Plot size: 20)				FACW species $\frac{5}{30}$ $\times 2 = \frac{10}{00}$
1. Carpinus caroliniana	30	Yes	FAC	FAC species 30 $x 3 = 90$ FACU species 110 $x 4 = 440$
2				
3			***************************************	UPL species 0 $x = 0$ (B) Column Totals: 145 (A) 540 (B)
4				Column Totals. 170 (A) 070 (B)
5				Prevalence Index = B/A = 4.9
6.				Hydrophytic Vegetation Indicators:
				Rapid Test for Hydrophytic Vegetation
7	20			Dominance Test is >50%
		= Total Co	ver	Prevalence Index is ≤3.01
Herb Stratum (Plot size: 5	_	V	FACIL	Morphological Adaptations ¹ (Provide supporting
Fagus grandifolia	<u> </u>	Yes	FACU	data in Remarks or on a separate sheet)
2. Carya ovata	. <u>5</u>	Yes	FACU	Problematic Hydrophytic Vegetation¹ (Explain)
3. Fraxinus pennsylvanica	5	Yes	FACW	¹ Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				
7				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8				
9.				Sapting/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
14				of size, and woody plants less than 3.28 ft tall.
12.	·			Woody vines – All woody vines greater than 3.28 ft in
12.	15	- Total Co.		height.
20	10	= Total Co	ver	
Woody Vine Stratum (Plot size: 20)	_	Vaa		
1. Vitis sp.	5	Yes		
2				
3				Hydrophytic
4				Vegetation Present? Yes No ✓
	5	= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate s	heet.)	,		

Sampling Point: TSDKup

SOIL

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirm	the absence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Feature %	s Type¹	Loc ²	Texture	Remarks	
0-6	10YR 4/3	100	Color (maist)		TYPE	LOC	Loam	Remarks	
								Dankara frank at 40%	
6-12	10YR 5/4	100					Loam	Rocky refusal at 12"	
									
	******				. ———				
					. ——				

	***************************************			***************************************		***************************************			
		*				-			
		<u> </u>						***************************************	
			·	***************************************	. ——				
					-	-			
		ietion, RM=	Reduced Matrix, CS	=Covered	d or Coate	d Sand Gr		cation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:						Indicators	s for Problematic Hydric Soils ³ :	
Histosol			Polyvalue Below		(S8) (LRF	ιR,		Muck (A10) (LRR K, L, MLRA 149B)	
Histic Ep	oipedon (A2)		MLRA 149B) Thin Dark Surfa		RRR MI	RA 149R		Prairie Redox (A16) (LRR K, L, R) Mucky Peat or Peat (S3) (LRR K, L, R)	
	n Sulfide (A4)		Loamy Mucky M					Surface (S7) (LRR K, L)	
Stratified	Layers (A5)		Loamy Gleyed N	Vatrix (F2			Polyva	alue Below Surface (S8) (LRR K, L)	
	Below Dark Surfac	e (A11)	Depleted Matrix					Dark Surface (S9) (LRR K, L)	
	irk Surface (A12) lucky Mineral (S1)		Redox Dark Sur Depleted Dark S					Manganese Masses (F12) (LRR K, L, R) nont Floodplain Soils (F19) (MLRA 149B)	
	leyed Matrix (S4)		Redox Depressi		· ()			Spodic (TA6) (MLRA 144A, 145, 149B)	
Sandy R	edox (S5)		•				Red Parent Material (F21)		
	Matrix (S6)							Shallow Dark Surface (TF12)	
Dark Sur	face (S7) (LRR R, I	/ILRA 1495	3)				Otner	(Explain in Remarks)	
³ Indicators of	hydrophytic vegeta	tion and we	tland hydrology mus	t be prese	ent, unless	disturbed	or problemati	c.	
	ayer (if observed):								
Туре:									
Depth (inc	ches):						Hydric Soil	I Present? Yes No ✓	
Remarks:					· · · ·				
								!	
								1	

Project/Site: Willowgrove Transn	nission	City/County: C	Cuyahoga	Sampling Date: 7/23/12
Applicant/Owner: First Energy				Sampling Point: TSDN
Investigator(s): Shinskey	The substitute of the substitu			
Landform (hillslope, terrace, etc.): ter				
Slope (%): 0 - 2% Lat: 41.36				
Soil Map Unit Name: WaB Wadsw	orth silt loam 2 to 6 r	percent slopes	AAA .1	PEM/PSS
•				
Are climatic / hydrologic conditions on				_
Are Vegetation, Soil, o	r Hydrologysignific	cantly disturbed?	Are "Normal Circumstances"	oresent? Yes 🗸 No
Are Vegetation, Soil, o	r Hydrology natura	lly problematic?	(If needed, explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS - /	Attach site map sho	wing sampling p	point locations, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes ✓ No		ampled Area	
Hydric Soil Present?	Yes No		Wetland? Yes <u>√</u>	No
Wetland Hydrology Present?	Yes ✓ No	if yes, o	ptional Wetland Site ID:	
HYDROLOGY				
Wetland Hydrology Indicators:		mmls à	• • • • • • • • • • • • • • • • • • • •	ators (minimum of two required)
Primary Indicators (minimum of one i			✓ Surface Soil	·
Surface Water (A1) High Water Table (A2)	vvater-Sta	ained Leaves (B9)	✓ Drainage Pa — Moss Trim L	
Saturation (A3)	Aquatic F			Water Table (C2)
Water Marks (B1)		Sulfide Odor (C1)	Crayfish Bur	- · · · · · · · · · · · · · · · · · · ·
Sediment Deposits (B2)		Rhizospheres on Livi		isible on Aerial Imagery (C9)
Drift Deposits (B3)	•	of Reduced Iron (C4		tressed Plants (D1)
Algal Mat or Crust (B4)	Recent In	on Reduction in Tilled	l Soils (C6) Geomorphic	Position (D2)
Iron Deposits (B5)		k Surface (C7)	Shallow Aqu	
Inundation Visible on Aerial Imag		plain in Remarks)	Microtopogra	•
✓ Sparsely Vegetated Concave Su	rface (B8)		✓ FAC-Neutra	Test (D5)
Field Observations:	N. J. B4.			
	No <u>√</u> Depth (ir No <u>√</u> Depth (ir			
	✓ No Depth (ir		— │ _ Wetland Hydrology Prese	nt? Yes ✓ No
(includes capillary fringe)				165 <u>-</u> 10
Describe Recorded Data (stream gau	ige, monitoring well, aerial	photos, previous insp	pections), if available:	
Remarks:			· · · · · · · · · · · · · · · · · · ·	
Feature is connected to wetlar	nds downslope by stre	eam TSDM-S.		

	Absolute	Dominant	Indicator	<u> </u>
<u>Tree Stratum</u> (Plot size: 20)	% Cover			Dominance Test worksheet:
1. Fraxinus pennsylvanica	30	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2 Fagus grandifolia	5	No	FACU	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
3 Ulmus rubra	10	Yes	FAC	Total Number of Dominant Species Across All Strata: 6 (B)
Acer saccharum	5	No	FACU	
	-			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
5.				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	50	= Total Co	ver	OBL species $\frac{60}{60}$ $\times 1 = \frac{60}{120}$
Sapling/Shrub Stratum (Plot size: 20)				FACW species 60 x2 = 120
1. Crataegus mollis	<u>10</u>	Yes	FAC	FAC species 50 x3 = 150
2. Lindera benzoin	10	Yes	FACW	FACU species 10 x 4 = 40 UPL species 0 x 5 = 0
3				400
4.				Column Totals: <u>180</u> (A) <u>370</u> (B)
5	*			Prevalence Index = B/A = 2.05
6.				Hydrophytic Vegetation Indicators:
			***************************************	Rapid Test for Hydrophytic Vegetation
7	20			✓ Dominance Test is >50%
.		= Total Co	ver	✓ Prevalence Index is ≤3.01
Herb Stratum (Plot size: 5)	30	Yes	OBL	Morphological Adaptations¹ (Provide supporting
1. Scirpus atrovirens				data in Remarks or on a separate sheet)
2. Onoclea sensibilis	_ <u>5</u>	No	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
3. Fraxinus pennsylvanica	_ <u>5</u>	No	FACW	¹Indicators of hydric soil and wetland hydrology must
4. Scirpus cyperinus	5	<u>No</u>	FACW	be present, unless disturbed or problematic.
5. Lindera benzoin	5	No	FACW	Definitions of Vegetation Strata:
6, Microstegium vimenum	30	Yes	FAC	
7. Carex stricta	10	No	OBL	Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10.				Herb - All herbaceous (non-woody) plants, regardless
11			<u></u>	of size, and woody plants less than 3.28 ft tall.
	-			Woody vines ~ All woody vines greater than 3.28 ft in
12.	90			height.
20	90	= Total Co	ver	
Woody Vine Stratum (Plot size: 20)				
1				
2.		***************************************	-	
3				Hydrophytic
4				Vegetation Present? Yes ✓ No
	0	= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)		***************************************	

Profile Des	cription: (Descri	be to the de	epth needed to doc	ument the	indicato	or or confi	m the absence of i	ndicators.)
Depth (inches)	Matrix Color (moist)	%	Color (maist)	dox Featu	es Type	Loc²	Texture	Remarks
0-8	10YR 2/1	90	2.5YR 3/6		_ <u>туре</u>	_ <u></u> PL	SiL	remarks
8-14	10YR 5/4	70	2.5YR 4/8	30	_ 	<u>- :-</u> М	- <u> </u>	
14-18	10YR 5/3	60	10YR 5/8	$-\frac{30}{40}$	- C	<u></u> M	CL CL	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
14-18	1011 3/3	<u> 00</u>	1011/3/6	40	- - -		<u> </u>	to the state of th
								
			·					
								
					<u></u>	<u> </u>	** ***********************************	
¹Type: C=C	oncentration D=D	enletion. RM	/I=Reduced Matrix,	CS=Cover	ed or Coa	ated Sand (Grains ² Locatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil		epiction, TXI	- reduced Matrix,	00-00101	00 01 002	ica oana (Problematic Hydric Soils ³ :
Black Hi Hydroge Stratified	pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surf	ace (A11)	Polyvalue Be MLRA 149 Thin Dark Su Loamy Muck Loamy Gleye Depleted Ma	9B) Irface (S9) y Mineral (ed Matrix (F	(LR R R, F1) (LRR	MLRA 149	Coast Prair B) 5 cm Muck Dark Surfa Polyvalue	(A10) (LRR K, L, MLRA 149B) irie Redox (A16) (LRR K, L, R) ky Peat or Peat (S3) (LRR K, L, R) ace (S7) (LRR K, L) Below Surface (S8) (LRR K, L) Surface (S9) (LRR K, L)
Sandy M Sandy G Sandy F Stripped	ark Surface (A12) Mucky Mineral (S1) Sleyed Matrix (S4) Redox (S5) I Matrix (S6) Irface (S7) (LRR R		✓ Redox Dark : Depleted Dark : Redox Depre	Surface (Fi k Surface	(F7)		Iron-Mang Piedmont Mesic Spo Red Parer Very Shall	anese Masses (F12) (LRR K, L, R) Floodplain Soils (F19) (MLRA 1498) idic (TA6) (MLRA 144A, 145, 1498) it Material (F21) ow Dark Surface (TF12) blain in Remarks)
	• , ,		•					,
	i nyaropnytic vege Layer (if observe		vetland hydrology m	ust be pre	sent, unic	ess disturbe	ed or problematic.	
Type: Cl	ay						Lincolnia Calit Dan	esent? Yes ✓ No
Depth (in- Remarks:	cnes): U						Tryunc 3011 File	35611LT 163 NO

Project/Site: Willowgrove Transmission	City/County:	Cuyahoga	Sampling Date: 7/23/12
Applicant/Owner: First Energy			H Sampling Point: TSDN
Oh in all	Section Toy	/nship, Range:	
		ocal relief (concave, convex, none	
		59155	
Soil Map Unit Name: WaB Wadsworth silt loam, 2 to	6 nercent slones	ANAN A	
		,	fication:
Are climatic / hydrologic conditions on the site typical for this			
Are Vegetation, Soil, or Hydrology si		Are "Normal Circumstances"	"present? Yes 🗸 No
Are Vegetation, Soil, or Hydrology no	aturally problematic?	(if needed, explain any answ	vers in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	showing sampling	point locations, transect	ts, important features, etc.
Hydrophytic Vegetation Present? YesNo	, / Is the	Sampled Area	
Hydric Soil Present? Yes No	withi	n a Wetland? Yes	No <u>-</u>
Wetland Hydrology Present? Yes No		, optional Wetland Site ID:	
Remarks: (Explain alternative procedures here or in a sepa			
			-
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary Indi	cators (minimum of two required)
Primary Indicators (minimum of one is required; check all the	nat apply)	Surface So	il Cracks (B6)
Surface Water (A1) Wate	r-Stained Leaves (B9)	Drainage F	Patterns (B10)
, ,	tic Fauna (B13)	Moss Trim	Lines (B16)
	Deposits (B15)		n Water Table (C2)
	ogen Sulfide Odor (C1)	· · · · · · · · · · · · · · · · · · ·	
		iving Roots (C3) Saturation	
<u> </u>	ence of Reduced Iron (int Iron Reduction in Til	, 	Stressed Plants (D1)
, , _	Muck Surface (C7)	ed Solis (Co) Shallow Ac	
	r (Explain in Remarks)		raphic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	(2), (2), (3), (3), (3), (4), (4), (4), (4), (4), (4), (4), (4	FAC-Neutr	
Field Observations:			
Surface Water Present? Yes No ✓ Dep	th (inches):		
Water Table Present? Yes No ✓ Dep			
Saturation Present? Yes No _✓ Dep			ent? Yes No <u>√</u>
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, a	eriai pnotos, previous i	ispections), if available:	
Remarks:			
•			

20	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20)		Species?	Status	Number of Dominant Species
1. Prunus serotina	10	No	FACU	That Are OBL, FACW, or FAC: 1 (A)
2. Carya alba	10	No	UPL	Total Number of Dominant
3. Fagus grandifolia	10	No	FACU	Species Across All Strata: 4 (B)
4. Acer saccharum	65	Yes	FACU	Percent of Dominant Species
5. Carya ovata	_ <u>5</u>	No	<u>FACU</u>	That Are OBL, FACW, or FAC: 25 % (A/B)
6			1-11-1-11	Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	400	= Total Co	er er	OBL species 0 x 1 = 0
Sapling/Shrub Stratum (Plot size: 20)				FACW species <u>5</u> x 2 = <u>10</u>
1. Fagus grandifolia	10	Yes	FACU	FAC species 0 x 3 = 0
2				FACU species 105 x 4 = 420
3.				UPL species 10 x 5 = 50
4				Column Totals: 120 (A) 480 (B)
5.				Prevalence Index = B/A = 4.0
				Hydrophytic Vegetation Indicators:
6				Rapid Test for Hydrophytic Vegetation
7	10	~		Dominance Test is >50%
		= Total Cov	/er	Prevalence Index is ≤3.0¹
Herb Stratum (Plot size: 5	c	Vac	EACH	Morphological Adaptations ¹ (Provide supporting
1. Hystrix patula	- 5	Yes	FACU	data in Remarks or on a separate sheet)
2. Fraxinus pennsylvanica	5		FACW	Problematic Hydrophytic Vegetation¹ (Explain)
3				Indicators of hydric soil and wetland hydrology must
4	- *			be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7			***************************************	at breast height (DBH), regardless of height.
8	<u> </u>		***************************************	Sapling/shrub - Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10,				Herb All herbaceous (non-woody) plants, regardless
11			***************************************	of size, and woody plants less than 3.28 ft tail.
12				Woody vines - All woody vines greater than 3.28 ft in
	10	= Total Cov	er er	height.
Woody Vine Stratum (Plot size: 20)				
1. Vitis sp.	5	Yes		
2				
3.				Hydrophytic
4				Vegetation
	5	= Total Cov	er	Present? Yes No ✓
Remarks: (Include photo numbers here or on a separate s				
,				

Sampling Point: TSDNup

SOIL

Profile Desc	cription: (Describe	to the dept	h needed to docur	nent the i	ndicator or confirm	the absence	of Indicators.)
Depth	Matrix			x Features	- -1 1 -2	T 4	Demode
(inches)	Color (moist)	<u>%</u>	Color (maist)	%	Type¹ Loc²	<u>Texture</u>	Remarks
0-5	10YR 4/3	100	_			Loam	
5-8	10YR 5/4	100				Loam	Rocky refusal at 8"
		·		• ——			
							
ļ	<u> </u>						
		``					
							
		 .					
				· ——			
 							
				. 			
¹Type: C=Ce	oncentration, D=Der	oletion, RM=	Reduced Matrix, CS	=Covered	or Coated Sand Gr	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil							s for Problematic Hydric Soils ³ :
Histosol	(A1)		Polyvalue Belov	w Surface	(S8) (LRR R,	2 cm	Muck (A10) (LRR K, L, MLRA 149B)
	oipedon (A2)		MLRA 149B)				t Prairie Redox (A16) (LRR K, L, R)
_	istic (A3)	΄.			RR R, MLRA 149B		Mucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)		Loamy Mucky N				Surface (S7) (LRR K, L)
	i Layers (A5) i Below Dark Surfac	(A11)	Loamy Gleyed Depleted Matrix)		alue Below Surface (S8) (LRR K, L) Dark Surface (S9) (LRR K, L)
	ark Surface (A12)	æ(ATT)	Depleted Matrix Redox Dark Su				Manganese Masses (F12) (LRR K, L, R)
	fucky Mineral (S1)	•	Depleted Dark :		7)		nont Floodplain Soils (F19) (MLRA 149B)
	Sleyed Matrix (S4)	1	Redox Depress	•	•		Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	tedox (S5)					Red F	Parent Material (F21)
1	Matrix (S6)						Shallow Dark Surface (TF12)
Dark Su	rface (S7) (LRR R, I	MLRA 149B)			Other	(Explain in Remarks)
3, , , , , , , , , ,	€ la coden — la codia o						l _a
	f hydrophytic vegeta Layer (if observed)		iana nyarology mus	t be prese	int, unless disturbed	or problemati	IC.
	Layer (III observed)	•					
Type:	<u> </u>						
Depth (inc	ches):		_			Hydric Soi	Il Present? Yes No _✓
Remarks:		months along the					
				-			

Project/Site: Willowgrove Transmission	City/County: Cuyahoga Sampling Date: 7/23/12
Applicant/Owner: First Energy	State: OH Sampling Point: TSDP
Investigator(s): Shinskey	
- · · · · · · · · · · · · · · · · · · ·	Local relief (concave, convex, none); concave
	Long: -81.4599652815 Datum: WGS84
	ercent slopes NWI classification: PFO
Are climatic / hydrologic conditions on the site typical for this time	
Are Vegetation, Soil, or Hydrology signification	
Are Vegetation, Soil, or Hydrology naturall	ly problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map show	ving sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ No	within a Wetland? Yes No
Remarks: (Explain alternative procedures here or in a separate	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that ap	
	ined Leaves (B9) Drainage Patterns (B10)
High Water Table (A2) Aquatic Fa	
Saturation (A3) Marl Depos Water Marks (B1) Hydrogen S	sits (B15) Dry-Season Water Table (C2) Sulfide Odor (C1) Crayfish Burrows (C8)
	Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
	of Reduced from (C4) Stunted or Stressed Plants (D1)
	in Reduction in Tilled Soils (C6) Geomorphic Position (D2)
iron Deposits (B5) Thin Muck	
ł	plain in Remarks) Microtopographic Relief (D4)
✓ Sparsely Vegetated Concave Surface (B8)	✓ FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No ✓ Depth (inc	ches):
Water Table Present? Yes No ✓ Depth (inc	
Saturation Present? Yes No _ / _ Depth (inc	
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial p	onotos, previous inspections), if available:
Remarks:	
	j

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 20)		Species?	Status	Dominance Test worksheet:
1. Fraxinus pennsylvanica	40	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2. Acer saccharum	40	Yes	FACU	
3 Ulmus rubra	10	No	FAC	Total Number of Dominant Species Across All Strata: 4 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 75 % (A/B)
6.				Prevalence Index worksheet:
7.	90			Total % Cover of: Multiply by:
20		= Total Cov	/er	OBL species 20 x1 = 20
Sapling/Shrub Stratum (Plot size: 20		v		FACW species 85
1. Carpinus caroliniana	10	Yes	FAC	FAC species $\frac{25}{40}$ $\times 3 = \frac{75}{160}$
2				UPL species 0 x 5 = 0
3,	··············			Column Totals: 170 (A) 425 (B)
4				
5				Prevalence Index = B/A = 2.5
6				Hydrophytic Vegetation Indicators:
7.				Rapid Test for Hydrophytic Vegetation
	40	= Total Cov	/er	✓ Dominance Test is >50%
Herb Stratum (Plot size: 5				✓ Prevalence Index is ≤3.0¹
Fraxinus pennsylvanica	5	No	FACW	Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
2. Scirpus atrovirens	<u></u> 10	No	OBL	Problematic Hydrophytic Vegetation¹ (Explain)
3. Poa palustris	30	Yes	FACW	
4. Juncus effusus	<u>30</u>	No	FACW	¹Indicators of hydric soil and wetland hydrology must
	<u>10</u> 10		OBL	be present, unless disturbed or problematic.
5. Carex stipata	 	No		Definitions of Vegetation Strata:
6. Microstegium vimenum		<u>No</u>	FAC	Tree - Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub - Woody plants less than 3 in. DBH
9				and greater than 3.28 ft (1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12				Woody vines - All woody vines greater than 3.28 ft in
	70	= Total Cov	er	height.
Woody Vine Stratum (Plot size: 20				<u> </u>
1				
2				
				1 hadron banks
3				Hydrophytic Vegetation
3.				y vegetation ,
3				Present? Yes No

Profile Des	cription: (Describe	to the de	="			or confir	m the absence of in	dicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	ox Feature	es Type ¹	Loc²	Town	Bonnelle
(inches) 0-7	10YR 3/2	. <u>%-</u> 95	2.5YR 3/6	- <u> </u>	C I ype	PL	<u>Texture</u> CL	Remarks
7-14	10YR 5/2	80	10YR 5/8	20	C	M	C	
14-18	10YR 4/2	50	5YR 4/6	50	- <u>-</u>	M		
	1017(4/2							
¹ Type: C=C	oncentration, D=Dep	letion, RN	M=Reduced Matrix, C	S=Covere	d or Coat	ed Sand G	Grains. ² Location	: PL=Pore Lining, M=Matrix.
Black H Hydroge Stratifier Deplete Thick Di Sandy M Sandy F Stripped			Polyvalue Beto MLRA 1498 Thin Dark Surf Loamy Mucky Loamy Gleyed Depleted Matri Redox Dark Si Depleted Dark Redox Depres	3) face (S9) (Mineral (F Matrix (F ix (F3) urface (F6 Surface ((LRR R, M F1) (LRR) (2)) F7)	ILRA 149E	Coast Prairi 5 cm Mucky Dark Surfac Polyvalue B Thin Dark S Iron-Manga Piedmont F Mesic Spod Red Parent Very Shallor	(A10) (LRR K, L, MLRA 149B) ie Redox (A16) (LRR K, L, R) ie Peat or Peat (S3) (LRR K, L, R) ie (S7) (LRR K, L) ielow Surface (S8) (LRR K, L) iurface (S9) (LRR K, L) nese Masses (F12) (LRR K, L, R) loodplain Soils (F19) (MLRA 149B) iic (TA6) (MLRA 144A, 145, 149B) Material (F21) w Dark Surface (TF12) ain in Remarks)
	f hydrophytic vegeta Layer (if observed):		vetland hydrology mu	st be pres	ent, unles	s disturbe	d or problematic.	
Type: _Cl								
2	ches): <u>7</u>						Hydric Soil Pres	ent? Yes <u>√</u> No
Remarks:							1	

Project/Site: Willowgrove Transmission	City/County: Cuyahoga Sampling Date: 7123/12					
•	State: OH Sampling Point: TSDQ					
Ohionion						
	Section, Township, Range:					
Landform (hillslope, terrace, etc.): terrace	Local relief (concave, convex, none): Concave					
Slope (%): U - 2% Lat: 41.36/1366812	Long: -81.4624650019 Datum: WGS84					
Soil Map Unit Name: Or Orrville silt loam, frequently floode						
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes No (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrology significant	ly disturbed? Are "Normal Circumstances" present? Yes 🗸 No					
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed, explain any answers in Remarks.)					
	g sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes _ ✓ No	is the Sampled Area					
Hydric Soil Present? Yes _ ✓ No						
Wetland Hydrology Present? Yes ✓ No	If yes, optional Wetland Site ID:					
Remarks: (Explain alternative procedures here or in a separate rep	ort.)					
HYDROLOGY						
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply						
Surface Water (A1) ✓ Water-Staine	· · · · · · · · · · · · · · · · · · ·					
High Water Table (A2) ✓ Saturation (A3) Aquatic Faun Marl Deposits	***					
	ide Odor (C1) Crayfish Burrows (C8)					
	pheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)					
✓ Drift Deposits (B3) Presence of F	· · · · · · · · · · · · · · · · · · ·					
Algal Mat or Crust (B4) Recent iron F	Reduction in Tilled Soils (C6) Geomorphic Position (D2)					
Iron Deposits (B5) Thin Muck Su	rface (C7) Shallow Aquitard (D3)					
	n in Remarks) Microtopographic Relief (D4)					
✓ Sparsely Vegetated Concave Surface (B8)	✓ FAC-Neutral Test (D5)					
Field Observations:						
Surface Water Present? Yes No V Depth (inche						
Water Table Present? Yes ✓ No Depth (inche						
Saturation Present? Yes ✓ No Depth (inche (includes capillary fringe)	s): 0 Wetland Hydrology Present? Yes ✓ No					
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if available:					
Remarks:						
Hydrology disturbed by railroad embankment along no	thern edge of feature, effectively isolating the feature					
Trydrology distarbed by ramoud embarrament dieng ne	thorn sage or reature, should by isolating the reature.					
1						
1						

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Platanus occidentalis	30	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
2. Salix nigra	20	Yes	FACW	That Ale OBE, FROM, OF FROM
3. Crataegus mollis	15	Yes	FAC	Total Number of Dominant Species Across All Strata: 6 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100 % (A/B)
6				Prevalence index worksheet:
7				Total % Cover of: Multiply by:
	G E	= Total Cov	/er	OBL species <u>5</u> <u>x1=5</u>
Sapling/Shrub Stratum (Plot size: 20)				FACW species 160 x 2 = 320
1. Salix nigra	30	Yes	FACW	FAC species 15 × 3 = 45
2.				FACU species $0 \times 4 = 0$
3.				UPL species $0 \times 5 = 0$
4.				Column Totals: 180 (A) 370 (B)
5.				Prevalence Index = B/A = 2.05
6.				Hydrophytic Vegetation Indicators:
7				Rapid Test for Hydrophytic Vegetation
, <u> </u>	30	= Total Cov		✓ Dominance Test is >50%
Herb Stratum (Plot size: 5	·	- 10(8) 00	,	✓ Prevalence Index is ≤3.0 ¹
1. Phalaris arundinacea	55	Yes	FACW	Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
2. Polygonum sp.	5	No		Problematic Hydrophytic Vegetation¹ (Explain)
3. Scirpus cyperinus	25	Yes	FACW	
4. Polygonum sagittatum	5	No	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5	-			
6				Definitions of Vegetation Strata:
7				Tree ~ Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
δ.				Sapling/shrub Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9				
10				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
12.	90	= Total Cov		height.
Woody Vine Stratum (Plot size: 20)		- Total Cov	/ei	
1				
2.				
3				Hydrophytic Vegetation
4		7.10		Present? Yes ✓ No
		⇒ Total Cov	er	
Remarks: (Include photo numbers here or on a separate	chact t			

Sampling Point: TSDQwet

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirm	n the absence of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo Color (moist)	x Feature %	Type ¹	Loc ²	Texture Remarks
0-5	10YR 2/2	- - 7° - 90	2.5YR 3/6	10	C C	PL	SiL Remaiks
5-18	10YR 3/1	90	2.5YR 3/6	10	<u>c</u>	M	SiC
			2.0777070				
							
							
		-					
							
l 		- 					
				<u> </u>	· •—••	**********	
		 		-		***************************************	
				. <u></u>			2
Type: C=Co Hydric Soil		oletion, RN	I=Reduced Matrix, C	S=Covere	d or Coate	ed Sand Gi	rains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
Histosol			Połyvalue Belo	w Surface	(S8) (LRI	R.R.	2 cm Muck (A10) (LRR K, L, MLRA 149B)
. —	oipedon (A2)		MLRA 149B		(50) (211	· / · · ·	Coast Prairie Redox (A16) (LRR K, L, R)
Black Hi			Thin Dark Surfa				
	n Sulfide (A4)		Loamy Mucky I			, L)	Dark Surface (S7) (LRR K, L)
	d Layers (A5) d Below Dark Surfac	o (A11)	Loamy Gleyed ✓ Depleted Matri		<u>2)</u>		Polyvalue Below Surface (S8) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)
	ark Surface (A12)	æ (ATT)	✓ Redox Dark St)		Iron-Manganese Masses (F12) (LRR K, L, R
Sandy M	lucky Mineral (S1)		Depleted Dark				Piedmont Floodplain Soils (F19) (MLRA 149)
	Bleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149E
	Redox (S5)						Red Parent Material (F21)
t	l Matrix (S6) rface (S7) (LRR R, I	MLRA 149	B)				Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	, (,,		-,				
			etland hydrology mus	st be presi	ent, unles:	disturbed	d or problematic.
Restrictive L Type: Cla	_ayer (if observed)	:					
							Hydric Soil Present? Yes / No
Depth (inc	ches):						Hydric Soil Present? Yes / No
Remarks:							

Project/Site: Willowgrove	Fransmission	City/Co	ounty: Cuya	hoga		Sampling Date:	7/23/12	
Applicant/Owner: First Ener		-				Sampling F		
Investigator(s): Shinskey		Section			_			
Landform (hillslope, terrace, et						none		
Slope (%): 7-15% Lat:							4	
Soil Map Unit Name:								
Are climatic / hydrologic condit								
							, N=	
Are Vegetation, Soil					•	resent? Yes 🗹	No	
Are Vegetation, Soil					plain any answer			
SUMMARY OF FINDING	S – Attach site n	nap showing sam	pling point	t locatio	ns, transects,	important fe	atures, etc.	
Hydrophytic Vegetation Press	ent? Yes	_ No	is the Sample					
Hydric Soil Present?	Yes	No✓	within a Weti	iland?	Yes	_ No		
Wetland Hydrology Present?	Yes		If yes, optiona	al Wetland	Site ID:			
				,				
HYDROLOGY								
Wetland Hydrology Indicato	ors:				Secondary Indical	ors (minimum of t	wo required)	
Primary Indicators (minimum	of one is required; chec	k all that apply)	y) Surfa			rface Soil Cracks (B6)		
Surface Water (A1)		Water-Stained Leaves	(B9)	-	Drainage Pati			
High Water Table (A2)		Aquatic Fauna (B13)			Moss Trim Lines (B16)			
Saturation (A3) Water Marks (B1)		Mari Deposits (B15) Hydrogen Sulfide Odo	· /C1\	Dry-Season Water Table (C2)				
Sediment Deposits (B2)		Oxidized Rhizosphere		Crayfish Burrows (C8) ng Roots (C3) Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3)		Presence of Reduced		ressed Plants (D1	· ·			
Algal Mat or Crust (B4)		Recent Iron Reduction		s (C6)	Geomorphic I		´	
Iron Deposits (B5)		Thin Muck Surface (C			Shallow Aquit	tard (D3)		
Inundation Visible on Aer		Other (Explain in Rem	arks)		Microtopogra	phic Relief (D4)		
Sparsely Vegetated Cond	cave Surface (B8)				FAC-Neutral	Test (D5)		
Field Observations:								
Surface Water Present?		_ Depth (inches):						
Water Table Present?		_ Depth (inches):		14f - 41	udaala ay Barana	10 V	N	
Saturation Present? (includes capillary fringe)	resNo_ y	_ Depth (inches):		wetiand ny	arology Presen	1? Yes	No_ <u>√</u>	
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, prev	ious inspectio	ons), if avail	able:			
Remarks:								
riemans.								

	Absolute	Dominant Indicator	. 1
Tree Stratum (Plot size: 20)	% Cover		FIGURIDATICE FEST WORKSHEET.
1 Prunus serotina	15	No FACU	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2 Fraxinus pennsylvanica	10	No FACW	
3 Fagus grandifolia	15	No FACU	Total Number of Dominant Species Across All Strata: 4 (B)
Acer saccharum	30	Yes FACU	
5 Carya ovata	20	Yes FACU	Percent of Dominant Species That Are OBL, FACW, or FAC: 25 % (A/B)
6. Ulmus rubra	10	No FAC	- 1101/10 054, 1101/10 1101
6. Omios rubia	. 10	NO FAC	Prevalence Index worksheet:
7			Total % Cover of:Multiply by:
	100	= Total Cover	OBL species $\frac{0}{10}$ $\times 1 = \frac{0}{0}$
Sapling/Shrub Stratum (Plot size: 20)			FACW species $\frac{10}{40}$ $\times 2 = \frac{20}{20}$
1. Acer saccharum		Yes FACU	FAC species 10 x3 = 30
2			FACU species 105 x 4 = 420
3			- × × × × × × × × × × × × × × × × × × ×
4			Column Totals: 125 (A) 470 (B)
5			Prevalence Index = B/A = 3.76
6			Hydrophytic Vegetation Indicators:
1			Rapid Test for Hydrophytic Vegetation
7	20	· ·	Dominance Test is >50%
_		= Total Cover	Prevalence Index is ≤3.0¹
Herb Stratum (Plot size: 5			Morphological Adaptations¹ (Provide supporting
Polystichum acrostichoides	<u> 5</u>	Yes FACU	data in Remarks or on a separate sheet)
2			Problematic Hydrophytic Vegetation ¹ (Explain)
3			¹Indicators of hydric soil and wetland hydrology must
4			be present, unless disturbed or problematic.
5			Definitions of Vegetation Strata:
6			Demations of vegetation Strata.
7			Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
8			- Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
9			• [
10			Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11			•
12			Woody vines - All woody vines greater than 3,28 ft in height.
	5	= Total Cover	
Woody Vine Stratum (Plot size: 20)			
1			-]
2			
3			. Hydrophytic
4			Vegetation
		= Total Cover	Present? Yes No V
Remarks: (Include photo numbers here or on a separate		1000	
•	,		

amolina	Daint	TSDQup

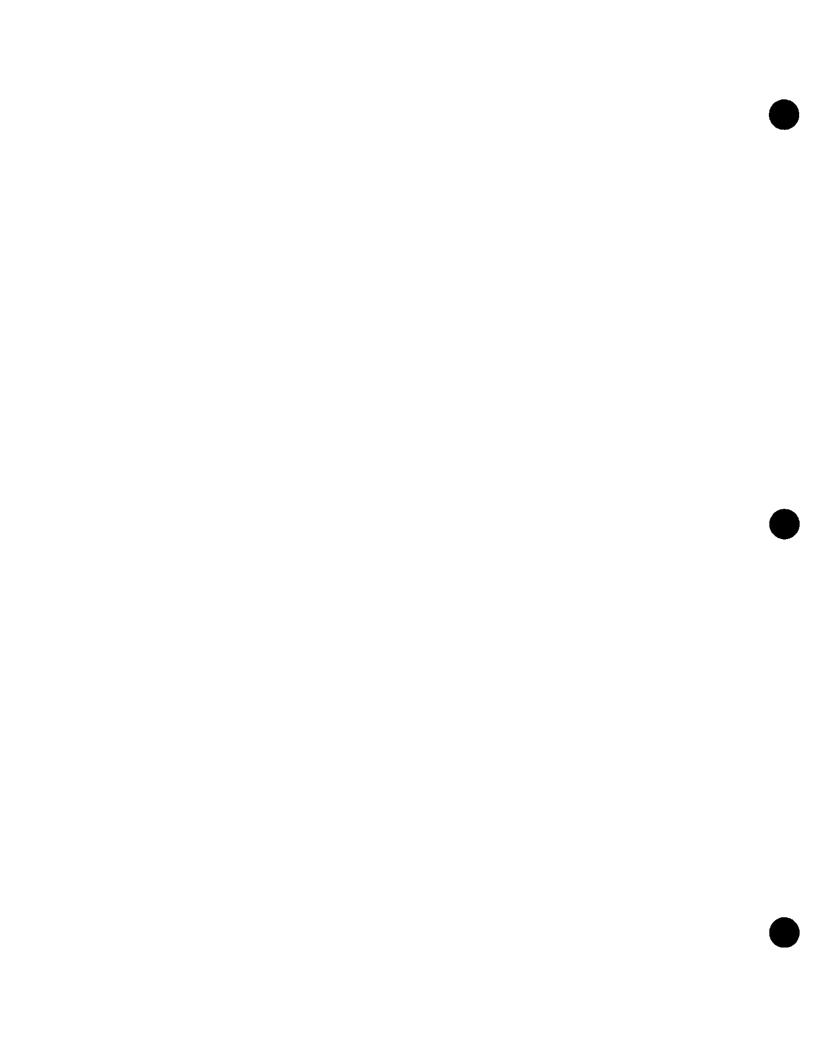
•	81	ŀ

Profile Desc	rlption: (Describe	to the depth				or confirm	the absence	of indicators	š.)	
Depth	Matrix			x Feature		Loc ²	Tardina		Domesto	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_LOC_	Texture	D 1	Remarks	
0-5	10YR 4/3	100			***************************************		Loam	Rocky ref	usai at 5"	
			·							
		 	···					-		
		·						****		
						•——				
l										
		-								
										·
				. ——						<u></u>
		· -								

	oncentration, D=Dep	letion, RM=F	Reduced Matrix, C	S=Covered	d or Coate	d Sand G		cation: PL=Po		
Hydric Soil	indicators:							for Problem	-	
Histosol		_	_ Polyvalue Belo		(\$8) (LRF	₹Ŕ,		Muck (A10) (L		
1	oipedon (A2)		MLRA 149B	•				Prairie Redox		
Black Hi			Thin Dark Surfa					Mucky Peat or		RR K, L, R)
	n Sulfide (A4)		Loamy Mucky I			, L)		Surface (S7) (I		
	l Layers (A5)	 - (444)	_ Loamy Gleyed)			alue Below Su Dark Surface (\$		
	i Below Dark Surfac irk Surface (A12)	e (ATT) _	_ Depleted Matrix _ Redox Dark Su					fanganese Ma		
	lucky Mineral (S1)	_	_ Depleted Dark	• ,				ont Floodplair		
	leyed Matrix (S4)	_	_ Redox Depress		•,			Spodic (TA6)		
	edox (S5)		/(040% Dop/000	, one (, e,				arent Material		, 140, 1402)
	Matrix (S6)							Shallow Dark 5		·)
	face (S7) (LRR R, N	ALRA 149B)						(Explain in Re		
	, , , , ,								•	
³ Indicators of	hydrophytic vegetat	tion and wetla	and hydrology mus	st be prese	ent, unless	disturbed	l or problemati	c.		
Restrictive I	ayer (if observed):				~					
Туре:			_							
Depth (inc	thes):						Hydric Soi	l Present?	Yes	No_ √
Remarks:						 				
ivemaiks.		*								
		*								

APPENDIX G OHIO EPA ORAM DATA SHEETS





Name: Onris Flannagan Date:
Date: 7/18/12
Affiliation: 18C
Address: 250 231° SE NW WEX DC 20037
Phone Number: 262 363 2853
e-mall address: cflannege a @ Lors begger - com
Name of Wetland: C+80 /CFBS / CFBT /CFBU
Vegetation Communit(ies): Emergat / Forest / Shruh
HGM Class(es): Depressional /Riverine
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
See affached maps in Report
Lat/Long or UTM Coordinate (11.3665 / - 81.4646
County County County
Township Glenwillow Village
Section and Subsection
Hydrologic Unit Code 0 4/1 000 7
Site Visit
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey hydric soil Delineation report/map
J. Seniodilon reportinap

etland Size (acres, hectares):
etland Size (acres, hectares):
etch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
See Mafs in accompanying refores
mments, Narrative Discussion, Justification of Category Changes:
The state of the s
nal score : (/Q Category:

,

Site:	CF	Bo (CFB) BT/BW Rater(s):	Flannagen	Date: 7//8/12
2	2	Metric 1. Wetland Area (size).	• •
max 6 pts	subtotal	Select one size class and assign score.		
8	10	Metric 2. Upland buffers and	I surrounding land use	•
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one WIDE. Buffers average 50m (164ft) or mor MEDIUM. Buffers average 25m to <50m (6 NARROW. Buffers average 10m to <25m VERY NARROW. Buffers average <10m (100 NARROW. Buffers average 10m (100 NARW). Buffers average 10m (100 NARW). Buf	e around wetland perimeter (7) 12 to <164ft) around wetland perimeter (4) (32ft to <82ft) around wetland perimeter (1) <32ft) around wetland perimeter (0) double check and average. airie, savannah, wildlife area, etc. (7) ung second growth forest. (5) pasture, park, conservation tillage, new fa	
22	32	Metric 3. Hydrology.		
max 30 pts	subloted	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Perecipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign to 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. Part of riparian 3d. Duration inundation/sa gn score. Regularly inund Seasonally inur Seasonally satu	lain (1) n/lake and other hurnan use (1) rupland (e.g. forest), complex (1) or upland corridor (1) aturation. Score one or dbl check. nently inundated/saturated (4) lated/saturated (3)
		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) Check all dist ditch ditch ditch	urbances observed	· ·
17	49	Metric 4. Habitat Alteration	and 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)	ck and average.	
		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)	n score.	
_		4c. Habitat alteration. Score one or double check an None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Check all dist mowing grazing clearcul	urbances observed shrub/sapling re herbaceous/aqu ting sedimentation	emoval uatic bed removal
subtrevised 1	Ug oral this pa Februar	woody of toxic po	e cutting dredging farming llutants utrient enrichm	ient

Site: (Bu .	1BS/BT/BL	Rater(s)	: 11	annalan	Date: +//1//)
<u> </u>		040,75			()	110/12
subtoti	49 of first page	a			J	,
-5 4	14	Metric 5. Special \	Vetland	5.		
max 10 pts. #u	utiotal	Che <u>ck all</u> that apply and score as it	ndicated.			
		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.	(5) ry wetland-unre ry wetland-resti s (Oak Opening	ricted hydrolo s) (10)	ogy (5)	
		Significant migratory son				1 . 10
		Category 1 Wetland. Se				where throughout
44	18	Metric 6. Plant co	mmuniti	es, inte	erspersion, micro	topography.
max 20 pts. s.	ublotal	6a. Wetland Vegetation Communi	ties.	egetation C	community Cover Scale	
		Score all present using 0 to 3 scale	3. <u> </u>	0	Absent or comprises <0.1ha (0	
		Aquatic bed Emergent		1	Present and either comprises a vegetation and is of moderate	
		Shrub			significant part but is of low of	
		Forest 2	-	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	
		Other		3	Present and comprises signific	• •
		6b. horizontal (plan view) Interspe	rsion.		vegetation and is of high qua	lity
	,	Select only one. High (5)		Jarrative Do	scription of Vegetation Quality	ı.
		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	onent of the vegetation,
		Low (1)				sturbance tolerant native spp
		None (0)	Dafas		can also be present, and spe	· · · · · · · · · · · · · · · · · · ·
		6c. Coverage of invasive plants. F to Table 1 ORAM long form for list.			moderately high, but general threatened or endangered sp	•
		or deduct points for coverage	_	high	A predominance of native spec	-
		Extensive >75% cover (-	5)		and/or disturbance tolerant n	-46
		Moderate 25-75% cover			absent, and high spp diversit	y and often, but not always,
		Sparse 5-25% cover (-1)	-		the presence of rare, threater	ned, or endangered spp
		Nearly absent <5% cove			O 12f-4 Ol O 114	
		Absent (1)	<u> </u>		Open Water Class Quality Absent <0.1ha (0.247 acres)	
		6d. Microtopography. Score all present using 0 to 3 scale	-	<u> </u>	Low 0.1 to <1ha (0.247 to 2.47	acres)
	,	Vegetated hummucks/tu		2	Moderate 1 to <4ha (2.47 to 9	
		Coarse woody debris >1		3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (1	Oin) dbh 🕻 🦷		·	
		Amphibian breeding poo	is <u>I</u>		aphy Cover Scale	
			-	0	Absent	I mara commor
				1	Present very small amounts or of marginal quality	n more common
			-	2	Present in moderate amounts,	but not of highest
				_	quality or in small amounts of	
			-	3	Present in moderate or greater	
1101					and of highest quality	

End of Quantitative Rating. Complete Categorization Worksheets.

Name: Chris Flannagan	
Date: 7/18/12	
Affiliation: The Louis Berger Group, Inc.	
Address: 1250 23rd Street NW Washington DC 20037	
Phone Number: 202,303.2853	The state of the s
e-mail address: cflannagan@louisberger.com	
Name of Wetland: CFBR	
Vegetation Communit(ies): Emergent / Foreste L	
HGM Class(es): Dep(155, 2) Mal/Riverine	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
Lat/Long or UTM Coordinate 41 3632 /-81. 4653-	
USGS Quad Name Twins burg	
County Cyahoga	
Township Twinsburg Glenwillow Village	
Section and Subsection	
Hydrologic Unit Code 04/10002	
Site Visit	
National Wetland Inventory Map Ohio Wetland Inventory Map	
Soil Suffithy	
Delineation report/map	

 Wetland Size (acres, hectares):
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
PFO / PEN Protes Comments, Narrative Discussion, Justification of Category Changes:
4
·

Site:		CFBR	Rater(s):	Tlanneson	Date: 7/18/12
a	2	Metric 1. Wetla	nd Area (size)).	
max 6 pts	subtotal	10 to <25 acres (4 3 to <10 acres (1.2 0.3 to <3 acres (0.01 to <0.3 acres (0.04 to <0.1 acres (0.04 to <0	a) (6 pts) 0.1 to <20.2ha) (5 pts) to <10.1ha) (4 pts) t to <4ha) (3 pts) 12 to <1.2ha) (2pts) 0.04 to <0.12ha) (1 pt) 1) (0 pts)		
5	7	Metric 2. Uplan	d buffers and	surrounding lan	d use.
max 14 pis	sublolai	WIDE. Buffers ave MEDIUM. Buffers NARROW. Buffers VERY NARROW. 2b. Intensity of surrounding VERY LOW. 2nd LOW. Old field (> MODERATELY HI	erage 50m (164ft) or more average 25m to <50m (8: s average 10m to <25m (8: s average 10m to <25m (8: s average 10m (< land use. Select one or c growth or older forest, pra 10 years), shrub land, you GH. Residential, fenced if	irie, savannah, wildlife area, etc ing second growth forest. (5) pasture, park, conservation tillag	imeter (4) primeter (1) (0) c. (7) ge, new fallow field. (3)
) <u>(</u>	211	Metric 3. Hydro		cropping, mining, construction.	(1)
mex 30 pts.	sublota	3c, Maximum water depth. 3c, Variable 20.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 20.4m (<15.7in) (1	ter (5) (3) See (5) ent surface water (3) water (lake or stream) (5) Select only one and assig	100 y Betwee Part of 3d. Duration inu n score. Semi- Regui	y. Score all that apply. rear floodplain (1) rear stream/lake and other human use (1) of wetland/upland (e.g. forest), complex (1) of riparian or upland corridor (1) andation/saturation. Score one or dbl check to permanently inundated/saturated (4) larly inundated/saturated (3) onally inundated (2) onally saturated in upper 30cm (12in) (1) ge.
	76	Recovering (3) Recent or no recovering	ditch	filling/ road t dredg	· - n
13	2	Metric 4. Habit		and Development	
max 20 pts	subtotal	4a. Substrate disturbance. 3 None or none apprix Recovered (3) Recovering (2) Recent or no recover. 4b. Habitat development. Since Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	Score one or double checarent (4) rery (1) elect only one and assign	k and average.	
[35	4c. Habitat alteration. Score None or none apparent Recovered (6) Recovering (3) Recent or no recovered	rent (9) Check all disturbed mowing grazing clearcutt selective	ing herba sedim cutting dredg ebris removal farmir	
	htotal this pa	I ge ry 2001 jjm	τολίο μα	nuerenuere	T. OTHORNOIR

7

Site:	6.	FBR	Rater(s): F	lannagan	Date: 7/14/12
max 10 pts.	35 abtotal first pa	Metric 5. Special V Check all that apply and score as in		S.	-	
7-	42	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributan Lake Erie coastal/tributan Lake Plain Sand Prairies Reilct Wet Prairies (10) Known occurrence state/i Significant migratory song Category 1 Wetland. See	y wetland-unr y wetland-res (Oak Opening rederal threate bird/water for e Question 1 (tricted hydrologs) (10) ened or endan wl habitat or u Qualitative Rat	gy (5) gered species (10) sage (10) ling (-10)	opography.
(B)	WV]				•
rnax 20 pts.	subtotal	6a. Wetland Vegetation Communiti Score all present using 0 to 3 scale.		Vegetation C	ommunity Cover Scale Absent or comprises <0.1ha (0.2)	471 acres) continuous area
		Aquatic bed Emergent 2		1	Present and either comprises sm vegetation and is of moderate of significant part but is of low que	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) Interspen	 sion.	3	Present and comprises significant vegetation and is of high quality	= -
		Select only one.		Namethia Dan	and the second of the second o	
		High (5) Moderately high(4)		low	scription of Vegetation Quality Low spp diversity and/or predom	
		Moderate (3) Moderately low (2)		mod	disturbance tolerant native spe- Native spp are dominant compon	
		Low (1)		11.00	although nonnative and/or distu	
		None (0)			can also be present, and speck	, ,
		6c. Coverage of invasive plants. R to Table 1 ORAM long form for list.			moderately high, but generally threatened or endangered spp	w/o presence of rare
		or deduct points for coverage		high	A predominance of native specie	
		Extensive >75% cover (-5			and/or disturbance tolerant nati	
	(🙆	Moderate 25-75% cover (Sparse 5-25% cover (-1)	-3)		absent, and high spp diversity a the presence of rare, threatene	
rag priv rest en s Phaloms	ent 🙆	Needs also an over	(0)		the processes of faire, threatene	a, or orderigoree opp
ng J	: . 	Absent (1)		Mudflat and (Open Water Class Quality	
				0	Absent <0.1ha (0.247 acres)	
Ykrovýlu	7UT	Score all present using 0 to 3 scale.		1	Low 0.1 to <1ha (0.247 to 2.47 ac	
		Vegetated hummucks/tus Coarse woody debris >15		3	Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	acres)
		Standing dead >25cm (10			The Court Boles, or more	
		Amphibian breeding pools	· •	Microtopogra	phy Cover Scale	
			•	0	Absent	
				1	Present very small amounts or if of marginal quality	more common
				2	Present in moderate amounts, bu	t not of highest
(i)					quality or in small amounts of h	_
<u> </u>	1			3	Present in moderate or greater a	nounts

End of Quantitative Rating. Complete Categorization Worksheets.

Name: Chris Flannasan	
Date: 7/17/12	
Affiliation: LBC	
Address: 1250 23rd St NW WD	20037
Phone Number: 202 S03 2853	
e-mail address: cflannagan @ louisberger.	(112)
Name of Wetland: CFBP	
Vegetation Communit(les):	
HGM Class(es): Deps = 35,0 nal	
Location of Website include map, address, north arrow, landmarks, distances, roads, etc.	
See affached maps.	
Lat/Long or UTM Coordinate	
IJSCS Ouad Nama	<u> </u>
County Cuyahoga	
Township Olamba 1/ Mark	
Section and Subsection	
Hydrologic Unit Code 04/10002	
Site Visit	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey Hydric Soil	
Delineation report/map	

Name of Wetland: CTBP
Wetland Size (acres, hectares):
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
Please See Maps in accompanying Refort
Comments, Narrative Discussion, Justification of Category Changes: Area receives drainage from offs, he by find
(evidenced by culvert), 100%, coverage by Phalarir arundinacea, Drains to effem chambs.
Final score : ﴿ Category: \



End of Quantitative Rating. Complete Categorization Worksheets.

quality or in small amounts of highest quality

Present in moderate or greater amounts

and of highest quality

Site: Glenvillow	Rater(s):	il maccin	Date: 7/17/12
2 2 Metric 1. Wetlan	d Area (size).	J	
max 6 pis subtotal Select one size class and assig >50 acres (>20.2ha) 25 to <50 acres (10.1 10 to <25 acres (4 to 3 to <10 acres (1.2 to 0.3 to <3 acres (0.12 to 0.1 to <0.3 acres (0.04ha) (0.1 acres (0.1 acr	6 pts) to <20.2ha) (5 pts) <10.1ha) (4 pts) <4ha) (3 pts) to <1.2ha) (2pts) 4 to <0.12ha) (1 pt)		
	• •	urrounding land	use.
WIDE. Buffers avera MEDIUM. Buffers av NARROW. Buffers a VERY NARROW. Bu 2b. Intensity of surrounding lan VERY LOW. 2nd gro LOW. Old field (>10 MODERATELY HIGH	ge 50m (164ft) or more ar erage 25m to <50m (82 to verage 10m to <25m (32) ffor average <10m (<32) ffor severage <10m (<32) duse. Select one or dou with or older forest, prairie years), shrub land, young l. Residential, fenced pas	assign score. Do not double chound wetland perimeter (7) c164ft) around wetland perimet it to <82ft) around wetland perimet it around wetland perimet it around wetland perimeter (0) ble check and average. It is a savannah, wildlife area, etc. (7 second growth forest. (5) sture, park, conservation tillage, upping, mining, construction. (1)	ter (4) eter (1)
5 15 Metric 3. Hydrole	ogy.		
max 30 pts. subtotal 3a. Sources of Water. Score a High pH groundwater (3 Precipitation (1) Seasonal/Intermittent Perennial surface wal 3c. Maximum water depth. Sel 20.4 to 0.7m (15.7 to 2 40.4m (<15.7in) (1) 3e. Modifications to natural hydrogeness of Water. Score a High pH groundwater (3 Precipitation (1) Seasonal/Intermittent Perennial surface wal 3c. Maximum water depth. Sel 20.4 to 0.7m (15.7 to 2 Modifications to natural hydrogeness)	(5) surface water (3) er (lake or stream) (5) ect only one and assign s 7.6in) (2)	Between Part of w Part of ri 3d. Duration inunda core. Regularly Seasona Seasona	core all that apply. floodplain (1) stream/lake and other human use (1) etland/upland (e.g. forest), complex (1) parian or upland corridor (1) stron/saturation. Score one or dbl check. permanently inundated/saturated (4) inundated/saturated (3) lly inundated (2) lly saturated in upper 30cm (12in) (1)
None or none appare Recovered (7) Recovering (3) Recent or no recoven	check all disturbated title (1) Check all disturbated title (1	point sou filling/gra road bed	rce (nonstormwater) ding (RR track Area receives 420 from Shorm water Rind (Dry)
子 2)Metric 4. Habitat	Alteration an	d Development.	Stormwater fond (Dry)
max 20 pts. subtotal 4a. Substrate disturbance. Sec None or none appare Recovered (3) Recovering (2) Recent or no recovery 4b. Habitat development. Sele Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	nt (4)	pre.	
Poor (1) 4c. Habitat alteration. Score or		erage. Area Cr	eated as stormwater meatment
None or none apparer Recovered (6) Recovering (3) Recent or no recovery subtotal this page last revised 1 February 2001 jim	mowing grazing	tting dedging farming	ous/aquatic bed removal

Name: Chris Flannagan	
Date: 7/18/12	
Affiliation: The Louis Berger Group, Inc.	
Address:	
1250 23rd Street NW Washington DC 20037 Phone Number:	
202.303.2853	· · · · · · · · · · · · · · · · · · ·
e-mall address: cflannagan@louisberger.com	
Name of Wetland: CFBV	
Vegetation Communit(ies): Emergent openwater HGM Class(es): YOURS JOHNAL	-
HGM Class(es):	
Location of Wetland: include map, address, north arrow, landmarks, distances, roa	nds, etc.
See attached maps in this report	
Lat/Long or UTM Coordinate	
USGS Quaid Name Twins burs	
County	
Township 010 1110 11110 11110	
Section and Subsection	
041/0002	
Site Visit	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
SoilaSurvey	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Delineation report/map	

Name of Wetland:

(FRV

Wetland Size (acres, hectares):

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Please see maps in accompanying

Comments, Narrative Discussion, Justification of Category Changes:

Area appears to have been formed by the memoral of Soil to create an area for stormwater runoff to sit. Vog dominated by head concern gress which exceeds 80% coverage. No connection to surface water this is isolated.

Final score:

4

Category:

Sita:		CF	BV	Rater(s):	Flanna	isan	Date: 7	118/12
	M	letric 1.	Wetland A	rea (size).		U		
	ubiotai Se	>50 ac 25 to < 10 to < 3 to <1	lass and assign sco res (>20.2ha) (6 pts 50 acres (10.1 to <2 25 acres (4 to <10.1 0 acres (1.2 to <4ha 3 acres (0.12 to <1 50.3 acres (0.04 to <) 20.2ha) (5 pts) ha) (4 pts) i) (3 pts) .2ha) (2pts)				
5	M	<0.1 ad	cres (0.04ha) (0 pts) Upland bu		surround	ling land	use.	
		WIDE. MEDIU NARRO VERY Intensity of s VERY LOW. MODE	erage buffer width. Buffers average 50 M. Buffers average DW. Buffers average NAROW. Buffers urrounding land use LOW. 2nd growth o Old field (>10 years RATELY HIGH. Re Urban, industrial, o	m (164ft) or more at 25m to <50m (82 fte 10m to <25m (33 average <10m (<33 select one or do rolder forest, prairi), shrub land, younsidential, fenced passidential, fenced passid	round wetland good 164ff) around 2ff to <82ff) around 2ff) around wetlauble check and e, savannah, will g second growth 1sture, park, con	perimeter (7) If wetland perimeter Ind wetland perimeter (0) Industrial experimenter (7) Industrial experimenter (7) Industrial experimenter (5) Industrial experimenter (5) Industrial experimenter (7) Industrial experimenter (er (4) eter (1)	
/			Hydrology	•	opping, mining,	construction. (1)		
	ubiotal 3a.	High plants of the control of the co	nal/Intermittent surfa lial surface water (la lter depth. Select of	ce water (3) ke or stream) (5) nly one and assign (2) ic regime. Score o	3d. score. ne or double che	Duration inunda Regularly Regularly Seasonal Calcal average.	core all that apply. floodplain (1) stream/lake and other letland/upland (e.g. foreverian or upland corridotion/saturation. Score commanently inundated, inundated/saturated (2) ly inundated in upper 30	st), complex (1) or (1) one or dbl check. /saturated (4) 3)
	-	Recove Recove Recent	ered (7) ering (3) or no recovery (1)	ditch tile dike weir stormwate	r input	point sou filling/grad road bed/ dredging other_/	RR track	d fun oH
, ,			Habitat Al			opment.		
max 20 pls s	4 b.	None of Recovery Recovery Recent Habitat deve Exceller Very good (Modern Fair (3) Poor (1) Habitat altera	or no recovery (1) lopment. Select onlint (7) ood (6) 5) stely good (4)	y one and assign s double check and a	core. iverage.	1		
subtol	al this page February 20	Recove	ered (6)	mowing grazing clearcuttin selective of	g cutting oris removal tants	shrub/sag herbaceo sediment X dredgi ng farming nutrient e	nrichment	
_	•				\$	white	semoved to	

Site: /	IAL	Mou	SS	Rater(s	رځ :(ع	Lannasan	Date: 7/18//2
		1					
	19						
subto	otal first pa	ne					
		ĭ	5 Sneci	ial Wetland	le		
-10	9	Metric	o. Opeo	iai vvetiant	13.		
	subtotal	 Check all t	hat apply and sco	re as indicated.			
			3og (10)				
			Fen (10)	(4.0)			
			Did growth forest (Mature forested we				- led by
				tributary wetland-un	restricted h	ydrology (10)	Dominated by Phataris Am
				ributary wetland-res	-	rology (5)	O) In a s Agui
				rairies (Oak Openin	gs) (10)	-	1 Ku 191 13
			Relict Wet Prairies Known occurrence		ened or en	dangered species (10)	• •
				ry songbird/water fo			
			Category 1 Wetlan	d. See Question 1	Qualitative	Rating (-10)	
\sim	9	Metric	c 6. Plant	communit	ies, in	terspersion, mic	rotopography.
\bigcirc	1				·	•	
max 20 pts.	sublotal		nd Vegetation Con			n Community Cover Scale	
			r esent u sing 0 to 3 Aquatic bed	3 scale.	0		ha (0.2471 acres) contiguous area ses small part of wetland's
			Emergent (•	,	derate quality, or comprises a
			Shrub			significant part but is of I	ow quality
			Forest		2		ses significant part of wetland's
			vludflats Open water 1			part and is of high qualit	derate quality or comprises a small
			Other		3		gnificant part, or more, of wetland's
		6b. horizoi	ntal (plan view) Int	terspersion.		vegetation and is of high	
		Select only			Namatina		
			-ligh (5) Moderately high(4)	•	low	Description of Vegetation Quality and/or p	vedominance of nonnative or
			Moderate (3)	•		disturbance tolerant nati	
			Moderately low (2)		mod	1	component of the vegetation,
			.ow (1) Vone (0)			-	or disturbance tolerant native spp d species diversity moderate to
			age of invasive pla	ints. Refer			nerally w/o presence of rare
		to Table 1	ORAM long form f	for list. Add		threatened or endangere	ed spp
			oints for coverage		high		species, with nonnative spp
			Extensive >75% co Moderate 25-75%			1	ant native spp absent or virtually versity and often, but not always,
		*****	Sparse 5-25% cov	. ,			eatened, or endangered spp
			viearly absent <5%	cover (0)			
		المستالحيا	Absent (1)			nd Open Water Class Quality	
		6d. Microto Score all pr	opograpny. r esent using 0 to 3	R scale	<u>0</u>	Absent <0.1ha (0.247 acr Low 0.1 to <1ha (0.247 to	
			egetated hummu		2	Moderate 1 to <4ha (2.47	
			Coarse woody deb		3	High 4ha (9.88 acres) or n	nore
			Standing dead >25		Misseles	ageanhu Count Coul	
		LX (*	Amphibian breedin	ig pools	Microtopo	graphy Cover Scale Absent	· · · · · · · · · · · · · · · · · · ·
					1	Present very small amoun	ts or if more common
						of marginal quality	···
					2	Present in moderate amou	
					3	quality or in small amour Present in moderate or gre	
					-	and of highest quality	Settor dirivativo

End of Quantitative Rating, Complete Categorization Worksheets.

Name: Chris Flannagan	
Date: 7/19/12	
Affillation:	
The Louis Berger Group, Inc.	
Address: 1250 23rd Street NW Washington DC 20037	
Phone Number: 202.303.2853	
e-mail address: cflannagan@louisberger.com	
Name of Wetland: CFDX	
Vegetation Communit(ies): Fore S+	
HGM Class(es): Dept = 55,7571a L	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
See attached maps in this report	
Lat/Long or UTM Coordinate U1.3661/-81.4613 USGS Quad Name Twinsburg	
USGS Quad Name	
County	
Township Clenwillan Villaxe	
Section and Subsection	
Hydrologic Unit Code 04/1000	<u></u>
Site Visit	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey hydric soil	
Defineation report/map	

lame of Wetland:			
Vetland Size (acres, hectares):	51		
Sketch: Include north arrow, relationship with othe	r surface waters, vegetat	ion zones, etc.	
Mense see	o maps	in a	accompliany, h
regio; C			
omments, Narrative Discussion, Justification of C	Category Changes:		
inal score : 40		Catego	ma ^



End of Quantitative Rating. Complete Categorization Worksheets.

and of highest quality

Site:	7/19	Rater(s):	-lannajan	Date: CFBX
	Metric 1.	` Wetland Area (size)		
max 6 pls	>50 acr 25 to <5 10 to <2 3 to <10 0.3 to <	ass and assign score. es (>20.2ha) (6 pts) i0 acres (10.1 to <20.2ha) (5 pts) i5 acres (4 to <10.1ha) (4 pts) i0 acres (1.2 to <4ha) (3 pts) i3 acres (0.12 to <1.2ha) (2pts) i23 acres (0.04 to <0.12ha) (1 pt) res (0.04ha) (0 pts)		
9	Metric 2.	Upland buffers and	surrounding land u	se.
max 14 pis	WiDE. MEDIU! NARRO VERY N LOW. C MODER	rage buffer width. Select only one ar Buffers average 50m (164ft) or more M. Buffers average 25m to <50m (82 kW. Buffers average 10m to <25m (34 kRROW. Buffers average <10m (<3 krounding land use. Select one or d OW. 2nd growth or older forest, praiold field (>10 years), shrub land, your KATELY HIGH. Residential, fenced purban, industrial, open pasture, row of	around wetland perimeter (7) to <164ft) around wetland perimeter 32ft to <82ft) around wetland perimeter 32ft) around wetland perimeter (0) ouble check and average. rie, savannah, wildlife area, etc. (7) ng second growth forest. (5) nasture, park, conservation tillage, ne	r (4) er (1)
14	Metric 3.	Hydrology.		
max 30 pts	High pH Other g Yercipit Season Ferenni 3c. Maximum wat 1 >0.7 (27 0.4 to 0.	al/Intermittent surface water (3) al surface water (lake or stream) (5) er depth. Select only one and assign 7.6in) (3) .7m (15.7 to 27.6in) (2)	Part of wett Part of ripa 3d. Duration inundation score. Semi- to pe Regularly ir Seasonally Seasonally	
	Recove	red (7) ditch	filling/grading road bed/R dredging	
13	Metric 4.	Habitat Alteration a	nd Development.	
max 20 pts	None or Recover Recover Recover Recover Recover Recont 4b. Habitat develor Exceller Very go Good (5 X Moderat Fair (3) Poor to Poor (1)	ring (2) or no recovery (1) opment. Select only one and assign at (7) od (6)) tely good (4) fair (2)	score.	
Si	None or Recover	none apparent (9) red (6) ring (3) or no recovery (1) Check all distured mowing grazing clearcutting selective	rbances observed shrub/saplin herbaceous sedimentat dredging bris removal	s/aquatic bed removal ion

last revised 1 February 2001 jjm

Name: Chris Flannagan Date:	
Date: 7/18/12	
Affiliation: 184	
Address: 250 23' SE NW WEX DC 20	037
Phone Number: 262 363 2853	
e-mail address: cflannegan (a) Lors begger. com	_
Name of Wetland: CTBS 7 CFBT /	(FBU)
Vegetation Communit(ies): Emergat / Forest / Shuh	
HGM Class(es): Depressional /Riverin-	٤
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
See attached maps in	report
Lat/Long or UTM Coordinate (11.3665 / - 81.4646	*.
USGS Quad Name TWIN Shurs	
County	
Township Glenwillow Village	
Section and Subsection Hydrologic Unit Code	
Hydrologic Unit Code 6 4/1 000 7 Site Visit	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey	
Delineation report/map	
<u> </u>	1

Name of Wetland:	(FBS/CFI	BO/CFBT/CTI	7W
Wetland Size (acres, hectare	98):	29	
Sketch: Include north arrow	, relationship with other sur	face waters, vegetation zones, etc.	
		accompany,ng	reforts
A Name Alexander	alon bushing the of floor	Ob	
Comments, Narrative Discus	ssion, Justification of Categ	ory Changes:	
			i
			İ
Final score : (10	A-1	orv:

Site:	CF	30 (0.FB) /BT/BW Rater(s)	: Flannascn	Date: 7//8/12
2	2	Metric 1. Wetland Area (siz	J	
_ <u>~</u>	Subtotal	Calent and along along and analog areas		
max 6 pts	SLEMOLEI	Select one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)		
8	10	Metric 2. Upland buffers ar	nd surrounding land use	•
mex 14 pts.	subtotal	2b. Intensity of surrounding land use. Select one VERY LOW. 2nd growth or older forest, LOW. Old field (>10 years), shrub land,	tore around wetland perimeter (7) (82 to <164ft) around wetland perimeter (4) (32ft to <82ft) around wetland perimeter (1) (<32ft) around wetland perimeter (0) or double check and average. prairie, savannah, wildlife area, etc. (7) young second growth forest. (5) ad pasture, park, conservation tillage, new fal	
22	32	Metric 3. Hydrology.		
max 30 pts.	aubioles	3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Percepitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) 3c. Maximum water depth. Select only one and as	Part of wetland/ Part of riparian of section inundation/sa	
		>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)	Regularly inund. Seasonally inund	ated/saturated (3) dated (2)
		3e. Modifications to natural hydrologic regime. Sc.		rated in upper 30cm (12in) (1)
		Recovered (7) Recovering (3) Recent or no recovery (1) ditch tile dike weir	isturbances observed point source (no filling/grading road bed/RR tradredging other	· I
17	49	Metric 4. Habitat Alteration	and Development.	
max 20 pls	subiotal	4a. Substrate disturbance. Score one or double cf None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)	neck and average.	
		4b. Habitat development. Select only one and ass Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	ign score.	
		4c. Habitet alteration. Score one or double check :	isturbances observed	moval
1	 7 -	Recovering (3) grazing Recent or no recovery (1) dear		atic bed removal
<u>RU</u>	49 biotal this pa	wood	y debris removal farming pollutants	ent
last revised	•	·		

Site: (下汉,	125/RT/KI.	Rater(s):	1	lannasan	Date: 7//1//2
<u> </u>	FIL	10101100	inater(s).	+ 1	ionraciwn	
subt	49 lotal first pag	e			9	
-5	44	Metric 5. Special V	Vetlands	•		
ex 10 pts.	sublotal	Check all that apply and score as in	ndicated.			
		Bog (10) Fen (10) Old growth forest (10) Mature forested wetland Lake Erie coastal/tributar	y wetland-unres	-	4 -2 · · ·	
		Lake Erie coastal/tributar Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/	(Oak Openings)	(10)		
		Significant migratory son	gbird/water fowl	habitat or u	usage (10)	Pholoris thrughout
		Category 1 Wetland. Se				_
4	48	Metric 6. Plant cor		•	•	otopograpny.
nax 20 pts.		6a. Wetland Vegetation Communit			Community Cover Scale	/0.7474 cores) continuous area
		Score all present using 0 to 3 scale Aquatic bed		<u>0</u> 1	Present and either comprise	(0.2471 acres) contiguous area
		Emergent		•	_	rate quality, or comprises a
		7 Shrub			significant part but is of lo	w quality
		Forest 2		2	Present and either comprise	es significant part of wetland's
		Mudflats			I	rate quality or comprises a small
		Open water Other		3	part and is of high quality	ificant and are seen of water-the
		6b. horizontal (plan view) Intersper	meion	J	vegetation and is of high	rificant part, or more, of wetland's
		Select only one.			Vegetadori aria is or rigir v	(vant)
		High (5)	Na	arrative De	scription of Vegetation Qu	ality
		Moderately high(4)	_	low		edominance of nonnative or
		Moderate (3)	_		disturbance tolerant native	
		Moderately low (2)		mod	Native spp are dominant co	•
		None (0)			-	r disturbance tolerant native spp species diversity moderate to
		6c. Coverage of invasive plants. R	Refer		· ·	erally w/o presence of rare
		to Table 1 ORAM long form for list.			threatened or endangered	
		or deduct points for coverage		high	A predominance of native s	pecies, with nonnative spp
		Extensive >75% cover (-			I .	nt native spp absent or virtually
		Moderate 25-75% cover				rsity and often, but not always,
		Sparse 5-25% cover (-1)			the presence of rare, three	atened, or endangered spp
		Nearly absent <5% cover Absent (1)	• •	udflat and	Open Water Class Quality	
		6d. Microtopography.		0	Absent <0.1ha (0.247 acres	<u>s)</u>
		Score all present using 0 to 3 scale	_	1	Low 0.1 to <1ha (0.247 to 2	
		Vegetated hummucks/tus	ssucks	2	Moderate 1 to <4ha (2.47 to	9.88 acres)
		Coarse woody debris >15		3	High 4ha (9.88 acres) or mo	ore
		Standing dead >25cm (1				
		Amphibian breeding pool	s Mi		aphy Cover Scale	-
			_	<u>0</u>	Absent	or if more commen
				'	Present very small amounts of marginal quality	ALIE HIOLE COLUMNIA
			-	2	Present in moderate amoun	ts, but not of highest
				•	quality or in small amount	
			_	3	Present in moderate or great	
					and of highest quality	

End of Quantitative Rating. Complete Categorization Worksheets.

Name:
homas Shinskey
Date: 7 3 12
Affiliation: The Louis Berger Group, Inc.
Address: 12 Mt. Kemble Ave, Morristown NJ 07962
Phone Number: 173-407-1470
e-mail address: shinskey@louisberger.com
Name of Wetland: TS
Vegetation Communit(ies):
HGM Class(es): ORDRESS ION G
Location of Wetland: include map, addiess, north arrow, landmarks, distances, roads, etc.
SEE MAP Chemillow Substatur area A
SEE MAP GWWWWW JOUSTON STORY
Lat/Long or UTM Coordinate 41.3661 81.460
USGS Quad Name
County
Township
Hydrologic Unit Code OU 10002
Site Visit
National Wetland Inventory Map
Ohio Wetland Inventory Map N
Obje Welland Javenton Man

Name of Wetland:			
Wetland Size (acres, hectares):			
Sketch: include north arrow, relationship wi	th other surface waters,	vegetation zones, etc.	
Forest	202	forest	N
	Sut	station area l	
	(terx)	ig timnsmission	ine ROW
Comments, Narrative Discussion, Justificati	ion of Category Changes		
Final score :		Catego	ry:

ORAM v. 5.0 Field F	orm Quantitative Rating			ı l
Site: 15) P	Rater(s): SHINSI	(EY	Date: 7 23/13
subtotal first p	Metric 5. Special V Check all that apply and score as in Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (dicated. 5)		
	Lake Erie coastal/tributary Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/f	y wetland-unrestricted hydrol y wetland-restricted hydrol (Oak Openings) (10) (ederal threatened or endal gbird/water fowl habitat or o e Question 1 Qualitative Ra	ogy (5) ngered species (10) usage (10)	
5 50	Metric 6. Plant con	nmunities, inte	erspersion, microt	opography.
max 20 pts. subtotal	6a. Wetland Vegetation Communiti	es. Vegetation (Community Cover Scale	
	Score all present using 0 to 3 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	quality, or comprises a
u	Shrub		significant part but is of low qu	ality
}	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		part and is of high quality	
	Other	3	Present and comprises significa	int part, or more, of wetland's
	6b. horizontal (plan view) Interspers	sion.	vegetation and is of high quali	=
	Select only one.			
	High (5)	Narrative De	scription of Vegetation Quality	
	Moderately high(4)	low	Low spp diversity and/or predon	
	Moderate (3)		disturbance tolerant native sp	
	Moderately low (2)	mod	Native spp are dominant compo	-
	Low (1)		although nonnative and/or dis	
	None (0)	_	can also be present, and spec	•
	6c. Coverage of invasive plants. Re		moderately high, but generally	
	to Table 1 ORAM long form for list.	400-000-00	threatened or endangered spi	
	or deduct points for coverage	high	A predominance of native speci-	
	Extensive >75% cover (-5	•	and/or disturbance tolerant na	•
_l	Moderate 25-75% cover (-		absent, and high spp diversity	•
7	Sparse 5-25% cover (-1)	luhas Xaha	the presence of rare, threaten	ed, or endangered spp
	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.		Low 0.1 to <1ha (0.247 to 2.47 a	neroe)
	Vegetated hummucks/tus		Moderate 1 to <4ha (2.47 to 9.8	
	Coarse woody debris >15		High 4ha (9.88 acres) or more	30 80,037
	Standing dead >25cm (10		Trigit the (5.00 deles) of those	
	Amphibian breeding pools	,	aphy Cover Scale	
		0	Absent	
		1	Present very small amounts or it	more common
		•	of marginal quality	- The second second
		2	Present in moderate amounts, b	out not of highest
			quality or in small amounts of	
		3	Present in moderate or greater	
		J	and of highest quality	
[Cn]			mile of sufferent documents	
1701				

End of Quantitative Rating. Complete Categorization Worksheets.

Name of Wetland: TS DK & STOCK
Wetland Size (acres, hectares): Q. U. Q.C. (1) Western An Total
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.
FOR TOOK TOOK TOOK TOOK TOOK TOOK TOOK TO
Social
Comments, Narrative Discussion, Justification of Category Changes:
TSDX feature is a series of isolated dipressions on a terrorce. Larger portion of TSDK and TSDN are connected to downslope wetlands and stream
are connected to downslope bettends and Jurean
CPBM-5 by ephemeral streams TSDL-5, TSDM-S
and tSDO-S.
Final score: 50 Category:

ORAM v. 5.0 Field F	orm Quantitative	Rating			, 1
Site:	KIPN	& CFCC	Rater(s): SHINSKE	<u> </u>	Date: 7/23/12-
max 6 pis sublotal	_]	. Wetland A			·
	>50 a 25 to 25 to 3 to 3 to 4 0.3 to 4 0.1 to 4	acres (>20.2ha) (6 pts) <50 acres (10.1 to <2 <25 acres (4 to <10.1 <10 acres (1.2 to <4ha o <3 acres (0.12 to <1. o <0.3 acres (0.04 to < acres (0.04ha) (0 pts)) (0.2ha) (5 pts) (ha) (4 pts) (1) (3 pts) (2ha) (2pts) (0.12ha) (1 pt)		
14/16	Metric 2	. Upland bu	iffers and surrou	inding land use.	
max 14 pts. subtotal	A WIDS MED NAR NAR NER Sity of LOW MOD	E. Buffers average 50 IUM. Buffers average ROW. Buffers averag Y NARROW. Buffers surrounding land use Y LOW. 2nd growth o . Old field (>10 years ERATELY HIGH. Res	Select only one and assign som (164ft) or more around weth 125m to <50m (82 to <164ft) are 10m to <25m (32ft to <82ft) average <10m (<32ft) around . Select one or double check or older forest, prairie, savanna), shrub land, young second grisidential, fenced pasture, park pen pasture, row cropping, mire	and perimeter (7) round wetland perimeter (4) around wetland perimeter (1) wetland perimeter (0) and average. h, wildlife area, etc. (7) rowth forest. (5) , conservation tillage, new falk	ow field. (3)
(53)	Metric 3	. Hydrology	<i>1</i> .	·	
max 30 pts. subtotal	High Othe Precises Seas Pere 3c. Maximum v >0.7 0.4 to 20.4r 3e. Modificatio	(27.6in) (3) 5 0.7m (15,7 to 27.6in) n (<15.7in) (1) ns to natural hydrologi	ce water (3) ke or stream) (5) nly one and assign score. (2) c regime, Score one or double	Part of wetland/u Part of riparian or 3d. Duration inundation/sat Semi- to permane Regularly inunda Seasonally inunda Seasonally satura e check and average.	in (1) lake and other human use (1) pland (e.g. forest), complex (1) upland corridor (1) upland corridor (1) curation. Score one or dbl check. ently inundated/saturated (4) led/saturated (3)
	Reco	or none apparent (12 vered (7) vering (3) nt or no recovery (1)	Check all disturbances obs	point source (nor filling/grading road bed/RR tracdredging other	· •
max 20 pts. sublotal	4a. <u>Substrate</u> d	tisturbance. Score on or none apparent (4)	teration and Develor double check and average	•	
	4b. Habitat dev Excer Very Good Mode Fair (Poor Poor	lent (7) good (6) (5) rately good (4) 3) to fair (2) (1)	y one and assign score.		
subtotal this po	None Reco	or none apparent (9) vered (6) vering (3) nt or no recovery (1)	Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling ren herbaceous/aqua sedimentation dredging	tic bed removal
last revised 1 Februa	•		Appears to	have been larged	long ago.

ORAM v.	5.0 Field F	orm Quai	ntitative	Rating						1	1
Site:	150	K ()	&	CFCC		Rater(s	s): SHINSI	KEY	Date: 7	13	12
	aubiotal first pa	Ϋ́		• • • • • • • • • • • • • • • • • • •	-:-! 364		I.		·	,	r
()	147	wet	ric :	o. Spe	cial W	etiano	15.				
max 10 pts	subtetal	Check	Bog Fen Old Matu Lake Lake Lake Know Sign	(10) (10) growth fore are forested e Erie coast e Plain Sand ct Wet Prair win occurrer ifficant migr	d wetland (5 lal/tributary v lal/tributary v d Prairies (0 lies (10) ince state/fer atory songb) wetland-un wetland-res Dak Openir deral threat ird/water fo	,	ogy (5) ngered species (10) usage (10)	•		
5	52	Met	ric 6	6. Plar	nt com	munit	ies, inte	erspersion, microto	pograp	hy.	
max 20 pts.	subtotal] 6a. We	etland V	egetation (Communities	š .	Vegetation (Community Cover Scale			
	3	_ 🗆	Aqui X Eme	•	to 3 scale.		1	Absent or comprises <0.1ha (0.24) Present and either comprises small vegetation and is of moderate of	all part of wett quality, or com	ands	area
	9	1	K Shru Fore Mud Ope	est			2	significant part but is of low qua Present and either comprises sign vegetation and is of moderate q part and is of high quality	nificant part of		
		6b. ho	Othe		interspersion	 on.	3	Present and comprises significant vegetation and is of high quality	•	of wetla	and's
		Select	only one	θ,			Narrative De	scription of Vegetation Quality			
		ιH	Mod	erately high erate (3)	n(4)		low	Low spp diversity and/or predomin		native or	
		6c. Co	Mod Low None verage	erately low (1) e (0) of invasive	(2) plants. Ref m for list. A		m od	disturbance tolerant native spec Native spp are dominant compone although nonnative and/or distu- can also be present, and specie moderately high, but generally we threatened or endangered spp	ent of the veg irbance tolera es diversity mo	nt native oderate te	
			ct point Exte	ts for covera	age cover (-5)		high /N	A predominance of native species and/or disturbance tolerant native absent, and high spp diversity a	ve spp absent ind often, but	t or virtua not alway	-
	_	1	- Near	ily append a	% cover (-3 cover (-1) \ :5% cover ((yloss.)		the presence of rare, threatener	I, or endange	red spp	
		6d. Mic		ent (1) graphy.			0	Open Water Class Quality Absent <0.1ha (0.247 acres)			
		Score a	_	int using 0 t			1	Low 0.1 to <1ha (0.247 to 2.47 ac			
		1 H	-		mucks/tussu lebris >15cr		3	Moderate 1 to <4ha (2.47 to 9.88 High 4ha (9.88 acres) or more	acres)		
			Stan	ding dead >	>25cm (10in						
			_ Amp	hibian bree	ung pools		Microtopogr	aphy Cover Scale Absent			
							1	Present very small amounts or if r of marginal quality	nore common		
							2	Present in moderate amounts, but quality or in small amounts of his		şt	
<u>ر</u>]						3	Present in moderate or greater an and of highest quality			



Name: Chris Flannagan		
Date: 7/19/12		
Affiliation: Louis Berger Group		
	Washington DC 20037	
Phone Number: 202-303-2853		
e-mail address: cflannagan@louisber	ger.com	
Name of Wetlan	CFBY, CFBZ, CFBA, CFBE	
Vegetation Communit(is	s): Forested area	
HGM Class(es): De	pression	
Location of Wetland: Inc	clude map, address, north arrow, landmarks, distances, roads, etc.	
Dlagse see mans in	accompanying wetland delineation report	
Flease acc mape in	accompanying wedario delineator report	
i:		
Lat/Long or UTM Coordin		-
USGS Quad Name	Twinsburg	
County Cuyal	noga	
Township	Glenwillow Village	
Section and Subsection		
Hydrologic Unit Code	04110002	
City Visit		•
Site Visit	yes	
National Wetland Inventor	ry Map no	
	ry Map no	
National Wetland Inventor	ry Map no	
National Wetland Inventor Ohio Wetland Inventory N	ny Map no	

Name of Wetland: CFBY, CFBZ, CFBA, CFBE		
Wetland Size (acres, hectares): 0.05		
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.		
Please see maps in accompanying wetland delineation report		İ
		=-
Comments, Narrative Discussion, Justification of Category Changes:		
		i
Areas are isolated depressions within a forest with no vegetation but strong indica	ators of	hydric soils.
]
		1
		j
		ł
Final score: 39 Catego	ry: a	lod 2
	- 1	

Site: Glenwillov	v substation	Rater(s): Flannaga	n	Date: 7/19/12
0 0	Metric 1. Wet	and Area (size).		
max 6 pls. subtotat	10 to <25 acres 3 to <10 acres (0.3 to <3 acres 0.1 to <0.3 acres (X) <0.1 acres (0.04)	2ha) (6 pts) (10.1 to <20.2ha) (5 pts) (4 to <10.1ha) (4 pts) 1.2 to <4ha) (3 pts) (0.12 to <1.2ha) (2pts) s (0.04 to <0.12ha) (1 pt)		
12 12	Metric 2. Upla	and buffers and surro	ounding land use	•
max 14 pts. sublotal	WIDE. Buffers a MEDIUM. Buffe NARROW. Buff VERY NARROW. Buff VERY NARROW. 2b. Intensity of surroundir VERY LOW. 2r. X LOW. Old field MODERATELY	ffer width. Select only one and assign average 50m (164ft) or more around wers average 25m to <50m (82 to <164ft) fers average 25m to <25m (32ft to <82 V. Buffers average <10m (<32ft) aroung land use. Select one or double chend growth or older forest, prairie, savan (>10 years), shrub land, young second HIGH. Residential, fenced pasture, pandustrial, open pasture, row cropping, to	etland perimeter (7)) around wetland perimeter (4) Iff) around wetland perimeter (1) nd wetland perimeter (0) nck and average. nah, wildlife area, etc. (7) growth forest. (5) ark, conservation tillage, new fal	,
17 29	Metric 3. Hyd	rology.		
max 30 pts. subtotei	3c. Maximum water depth >0.7 (27.6in) (3) 0.4 to 0.7m (15. \$\infty\$ 0.4m (<15.7in)	water (5) iter (3) iter (3) iter (3) iter (3) iter (a) water (lake or stream) (5) iter (a) iter (some and assign score) iter (a)	Part of wetland/ Part of riparian of ripar	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)
	Recovered (7) Recovering (3) Recent or no rec	covery (1) I ditch tile dike weir stormwater input	point source (no filling/grading road bed/RR tradredging other	
8 37	Metric 4. Hab	itat Alteration and Do	evelopment.	
max 20 pls. subtotal	None or none at Recovered (3) Recovering (2) Recent or no received the Recovering (2) Recent or no received the Recovering (2) Recent or no received the Recovering (2) Recovering (2) Recovering (2) Recovering (2) Recovering (3) Recovering (2) Recovering (3) Recovering (3) Recovering (3) Recovering (3) Recovering (3) Recovering (4) Rec	covery (1) Select only one and assign score.	age.	
	4c. Habitat alteration. Sci	ore one or double check and average. Operation (9) Check all disturbances of	bserved	
37 sublotal this pa	Recovered (6) Recovering (3) Recent or no rec	mowing grazing	shrub/sapling re herbaceous/aqu sedimentation dredging	iatic bed removal

Metric 5. Special Wetlands. Substitute	Site:Gle	enwillov	v substation	Rater(s): Flannag	an	Date: 7/19/12
Bog (10) Fen (10) Old growth forest (19) Mature forested wethard (5) Lake Eric coastal/tribulary wethand-restricted hydrology (10) Lake Eric coastal/tribulary wethand-restricted hydrology (5) Lake Eric coastal/tribulary wethand-restricted hydrology (6) Lake Eric coastal/tribulary wethand-restricted hydrology (7) Relict Wet Prairies (10) Known occurrance state/federal threatened or endangered species (10) Significant migratory sonopii/dwater fow hebitat or usage (10) Significant migratory sonopii/dwater fow hebitat or usage (10) Score all present using 0 to 3 scale. Augustic bed Emergent Strub Forest 1 Mudfats Open water Other Other Other Other Other Set. horizontal (plan view) Interspersion. Select only one. High (5) Moderately high(4) Moderately no (7) Moderately high (8) Moderately in (2) Low (1) Moderately in (2) Moderate in (2) Moderate in (2) Moderately in (2) Moderate in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in (2) Moderately in		ototal first pa	1	Vetland	ls.		
Sorore all present using 0 to 3 scale. Aquatic bed Emergent Sinub	max 10 pts.	subtotal	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (Lake Erie coastal/tributany Lake Plain Sand Prairies Relict Wet Prairies (10) Known occurrence state/f Significant migratory song Category 1 Wetland. See	(5) y wetland-uni y wetland-res (Oak Openin federal threat gbird/water fo e Question 1	tricted hydrok gs) (10) ened or endar wi habitat or u Qualitative Ra	ngered species (10) usage (10) uting (-10)	
Score all present using 0 to 3 scale. Aquatic bed Emergent Shrub Shrub Thresent and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of flow quality. Or comprises a significant part but is of flow quality. Or comprises a significant part but is of flow quality. Or comprises a significant part but is of flow quality or comprises a significant part but is of flow quality. Or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality. Other Other Other High (5) Moderately high(4) Moderately bigh(4) Moderately jow (2) Low (1) None (0) Extensive >75% cover (-6) Nearly absent 45% cover (-3) Sparse 5-25% cover (-1) Nearly absent 45% cover (-1) Nearly absent 45% cover (0) Absent (1) Absent (1) Absent (1) Absent (1) Absent (1) Absent (1) Amphibian breeding pools O Absent (1) Moderately absent 45% cover (-1) Amphibian breeding pools O Absent (1) Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of migh quality or comprises a significant part of wetland's vegetation and is of migh quality or comprises a significant part of wetland's vegetation and is of migh quality or comprises a significant part of wetland's vegetation and is of migh quality or comprises a significant part of wetland's vegetation and is of migh quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality or of more of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality or omprises a small and on present and comprises significant part or wetland's vegetation and is of high quality or omprises a small part and is of high quality or omprises a small part and is of high quality or	2	39	Metric 6. Plant con	nmunit	ies, inte	erspersion, microto	pography.
Score all present using 0 to 3 scale. Aquatic bed Aquatic bed Emergent Shrub X Forest 1 Mudflats Open water Other Other High (5) Moderately high(4) Moderatel (3) Moderately low (2) X 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 (-3) Sparse 5-25% cover (-1) X Naary absent <5% cover (0) Absent or dead or deduct points for coverage Vegetation and is of moderate quality, or comprises a small part and is of high quality Narrative Description of Vegetation Quality low glowersity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native species mod Mudflat and Open Water Class Quality Absent (1) 8d. Microtopography. Score all present using 0 to 3 scale. Vegetation and is of moderate quality, or comprises a significant part out is of low quality Narrative Description of Vegetation Quality low Low spp diversity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native species mod staturbance tolerant native species, with nonnative spp and/or disturbance tolerant native spp and/or disturbance	max 20 pts.	subtotel	」 6a. Wetland Vegetation Communiti	es.	Vegetation C	Community Cover Scale	
Shrub Shrub Threshold Shrub Shrub Threshold Shrub Shrub Threshold Shrub Shrub Threshold Shrub Thre							71 acres) contiguous area
Shrub 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			······································		1	1	•
Audiflats Open water O						<u> </u>	
Mudflats Vegetation and is of moderate quality or comprises a small part and is of high quality						<u> </u>	-
Open water Other Other Obter Other O					2	■	The state of the s
3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality Nortzontal (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 (-1) Moderate 25-75% 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. Ocarase woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Amphibian breeding pools 3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality Narrative Description of Vegetation Quality low Low spp diversity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative spp and/or disturbance tolerant native species with nonnative species with non							uality or comprises a small
Select only one. Select only							
Select only one. High (5)					3	1	-
High (5) Moderately high(4)				sion.		vegetation and is of high quality	
Moderately high(4) Moderate (3) Moderately low (2) X Low (1) None (0) C. 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 <1) Nearly absent <1) Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Microtopography Cover Scale O Absent Moderately high, but generally w/o presence of rare threatened or endangered spp Amphibian breeding pools Mudflat and Open Water Class Quality Uegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Microtopography Cover Scale O Absent 1 Present very small amounts or if more common of marginal quality Present in moderate arounts, but not of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts							
Moderate (3) Moderately low (2) Although nonnative 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							
Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Moderate 25-75% cover (-5) Moderate 25-75% cover (-1) X Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummuck/fussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale O Absent 1 Present very small amounts or fighest quality Present in moderate amounts, but not of highest quality Present in moderate amounts and foliphest quality O Present in moderate amounts and foliphest quality Present in moderate or greater amounts although nonnative and/or disturbance tolerant native spp can although nonnative spp can also be present, and species diversity moderate to moderate to rands perces of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp and species diversity moderate to moderate to rate who presente to moderate of native species, with nonnative spp and/or disturbance tolerant native spp and species diversity moderate to rands perces of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp and/or present end species, with nonnative spp and/or disturbance tolerant native spp can also be present, and species, with nonnative spp and/or disturbance tolerant native spp and/or present threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spec					low		
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 Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent (5) 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 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 Present in moderate or greater amounts and of highest quality although nonnative and/or disturbance tolerant native spp and although nonnative in moderate or endangered spp Migh A predominance of native species, with nonnative spp and/or disturbance tolerant native spp and/or disturbance tolerant							
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) Nearry 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 (10lin) dbh Amphibian breeding pools Microtopography Cover Scale O Absent 1 Present very small amounts or finore common of marginal quality Present in moderate amounts, but not of highest quality also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality O Absent <1 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <4 to <					mod		
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 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 7 Present in moderate amounts and folichest quality 1 Present in moderate arounts and folichest quality 1 Present in moderate arounts and folichest quality 1 Present in moderate arounts and of highest quality 1 Present in moderate arounts						"	· ·
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 Microtopography Cover Scale O Absent Microtopography Cover Scale O Absent Present very small amounts or lifmore common of marginal quality Present in moderate a mounts, but not of highest quality abent, and high spp diversity and often, but not adways, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality O Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres) Wicrotopography Cover Scale O Absent Present very small amounts or if more common of marginal quality Present in moderate a mounts, but not of highest quality Present in moderate or greater amounts and of highest quality				_		1	
or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) 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 O 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 fighest quality Present in moderate or greater amounts and fighest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts Absent on the fighest quality Present in moderate or greater amounts Application of native species, with nonnative spp and/or disturbance tolerant native species, with nonnative spp and/or disturbance tolerant native species, with nonnative species, with nonnative spp and/or disturbance tolerant native species, with nonnative species, with not not always, the present of highest quality absent, and high species, with not of highest quality and office of victies of species, with nondation species and of highest quality and office of victies of species, with nondation species and of highest quality and office of victies of vic							v/o presence of rare
Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) X 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 D Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh 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 of highest quality Present in moderate or greater amounts and of highest quality			_	Add		• • • • • • • • • • • • • • • • • • • •	
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) Mudflat and Open Water Class Quality O Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres) 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 always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality O Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 acres) Wicrotopography Cover Scale O 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				-1	nign	1 .	• • •
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 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 Present in moderate or greater amounts and of highest quality							
Nearty 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 Nearty absent <0.1ha (0.247 acres) 1				(-3)		- ''	
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 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				(a)		the presence of rare, threatened	, or endangered spp
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 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 2 Present in moderate or greater amounts and of highest quality					Manadelas anad	Onen Water Class Gunlife	
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 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			` '				
Vegetated hummucks/tussucks 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							real .
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						<u> </u>	
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						· · · · · · · · · · · · · · · · · · ·	acres)
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>ə</u>	High 4ria (9.06 acres) or 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					Microtono-	anhy 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			Tampingan precord poor	•			
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							nore common
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		IVIS WIRRUIT
3 Present in moderate or greater amounts and of highest quality					2	Present in moderate amounts, but	
and of highest quality					- 2	<u> </u>	 _
and or nightest quarty					J	· ·	TO MIND
39	39					and or riightest quality	·····

End of Quantitative Rating. Complete Categorization Worksheets.

Background Information

Name: Chris Flannagan		
Date: 7/19/12		
Affiliation: Louis Berger Group		
Address: 1250 23rd Street NW	/ Washington DC 20037	
Phone Number: 202-303-2853		
e-mail address: cflannagan@louisbe	rger.com	
Name of Wetlar		
Vegetation Communit(i		
HGM Class(es):	epression/Flats/Riverine	
L	nclude map, address, north arrow, landmarks, distances, roads, etc.	
-		
Please see maps in	accompanying wetland delineation report	
		e de la constantina del constantina del constantina de la constantina del constantina
Lat/Long or UTM Coordi		
USGS Quad Name	Twinsburg	
	nhoga	
Township	Glenwillow Village	
Section and Subsection		
Hydrologic Unit Code	04110002	
Site Visit	yes	
National Wetland Invento		
Ohio Wetland Inventory I	Map no	
Soil Survey	no	
Delineation report/map	yes	

Name of Wetland:		
Wetland Size (acres, hectares): 0.52		
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.		
		ŧ
		1
Please see maps in accompanying wetland delineation report		
Please see maps in accompanying welland delineation report		
		†
Comments, Narrative Discussion, Justification of Category Changes:		
·		
		;
Final score: 56.5 Categ	orv:	2
	,	j -

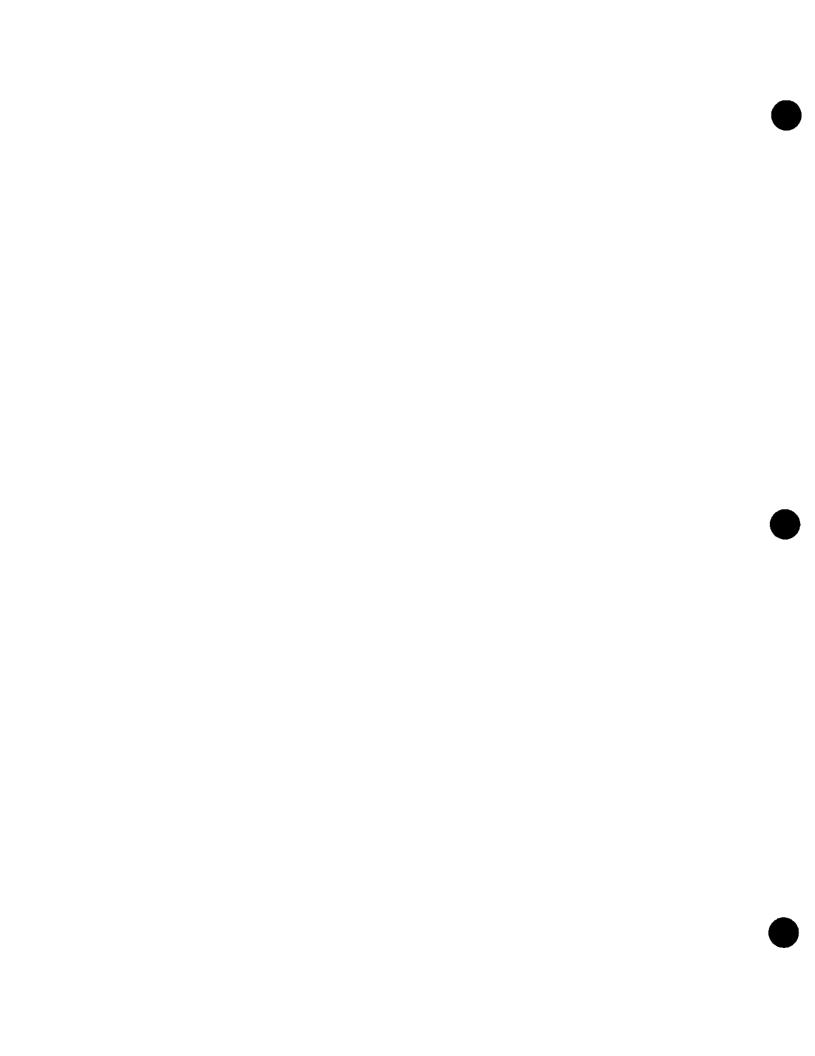
Site: Glenwillow	v substation	Rater(s): Flannaga	ın	Date: 7/19/12
1 1	Metric 1. Wetla	nd Area (size).		
max 6 pts. subtotal		a) (6 pts) 0.1 to <20.2ha) (5 pts)		
	3 to <10 acres (1.2 0.3 to <3 acres (0. × 0.1 to <0.3 acres (12 to <1.2ha) (2pts) 0.04 to <0.12ha) (1 pt)		
13 13	Metric 2. Uplan	a) (0 pts) ad buffers and surro	ounding land us	S e .
max 14 pts. subtotal	WIDE. Buffers ave MEDIUM. Buffers NARROW. Buffer VERY NARROW. 2b. Intensity of surrounding X VERY LOW. 2nd X LOW. Old field (> MODERATELY HI	r width. Select only one and assign erage 50m (164ft) or more around w average 25m to <50m (82 to <164ft s average 10m to <25m (32ft to <82 Buffers average <10m (<32ft) arour land use. Select one or double che growth or older forest, prairie, savan 10 years), shrub land, young second GH. Residential, fenced pasture, pount ustrial, open pasture, row cropping,	retland perimeter (7) c) around wetland perimeter (2) ch) around wetland perimeter (0) ck and average. nnah, wildlife area, etc. (7) d growth forest. (5) ark, conservation tillage, new	(4) r (1)
20.5 33.5	Metric 3. Hydro		,	
max 30 pts. subtotal	3c. Maximum water depth. >0.7 (27.6in) (3) x 0.4 to 0.7m (15.7 t <0.4m (<15.7in) (1	ter (5) (3) ent surface water (3) water (lake or stream) (5) Select only one and assign score. o 27.6in) (2)	X Part of wetta X Part of riparia 3d. Duration inundation Semi- to pen Regularly inu X Seasonally in X Seasonally s	odplain (1) eam/lake and other human use ind/upland (e.g. forest), compley an or upland corridor (1) in/saturation. Score one or dbl of manently inundated/saturated (- undated/saturated (3)
		arent (12) Check all disturbances o	bserved	
12 45.5	Metric 4. Habit	at Alteration and De	evelopment.	
max 20 pts. subtotal	None or none application (3) Recovering (2)		age.	
	Excellent (7) Very good (6) Good (5) Moderately good (elect only one and assign score.		
	4c. Habitat alteration. Score None or none app	e one or double check and average. arent (9) Check all disturbances of	bbserved	
45.5	Recovered (6) Recovering (3) Recent or no recovering	/ery (1) mowing grazing clearcutting selective cutting	shrub/sapling herbaceous/ sedimentatio dredging	aquatic bed removal
J40.0	i	woody debris remo	oval farming nutrient enrice	

Site:Glenwillow	w substation	Rater(s): Flannag	pan Date: 7/19/12
45.5 sublotal first p 5 50.5	Metric 5. Special W	etlands.	
max 10 pts. subtotal	Check all that apply and score as indi Bog (10) Fen (10) Old growth forest (10) X Mature forested wetland (5) Lake Erie coastal/tributary of Lake Erie coastal/tributary of Lake Plain Sand Prairies (0) Relict Wet Prairies (10) Known occurrence state/fed Significant mlgratory songb Category 1 Wetland. See (1)	wetland-unrestricted hyd wetland-restricted hydrol Dak Openings) (10) deral threatened or enda ird/water fowl habitat or Question 1 Qualitative Ra	ogy (5) ingered species (10) usage (10) ating (-10)
6 56.5	Metric o. Flant com	mumues, mu	erspersion, microtopography.
max 20 pts. subtotal	6a. Wetland Vegetation Communitles	S. Vegetation	Community Cover Scale
	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 small part of wetland's
	Emergent 1 Shrub 1		vegetation and is of moderate quality, or comprises a
	× Forest 2	2	significant part but is of low quality
	Mudflats	2	Present and either comprises significant part of wetland's
	Open water		vegetation and is of moderate quality or comprises a small
	Other	3	part and is of high quality Present and comprises significant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion		vegetation and is of high quality
	Select only one.		vegetation and is or riight quality
	High (5)	Narrative O	escription of Vegetation Quality
	Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
	Moderate (3)	1011	disturbance tolerant native species
	Moderately low (2)	mod	Native spp are dominant component of the vegetation,
	X Low (1)	mou	although nonnative and/or disturbance tolerant native spp
	None (0)		can also be present, and species diversity moderate to
	6c. Coverage of invasive plants. Ref	er	moderately high, but generally w/o presence of rare
	to Table 1 ORAM long form for list. A		threatened or endangered spp
	or deduct points for coverage	high	A predominance of native species, with nonnative spp
	Extensive >75% cover (-5)	• (19.1	and/or disturbance tolerant native spp absent or virtually
	Moderate 25-75% cover (-3	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	n	and processed or raise, an addition, or distanting and appr
	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 acres)
	Vegetated hummucks/tussu		Moderate 1 to <4ha (2.47 to 9.88 acres)
	Coarse woody debris >15cr		High 4ha (9.88 acres) or more
	Standing dead >25cm (10in	` ′	11.131.11.00 (0.00) 0.11.010
	X Amphibian breeding pools	´ •	raphy Cover Scale
	surprise to acquire hoose	0	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
		3	Present in moderate or greater amounts
		J	and of highest quality
39			1 and or register deems

End of Quantitative Rating. Complete Categorization Worksheets.

Appendix H OHIO EPA QHEI DATA SHEETS





	-6	A
. 0		
	-	

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:	78
-------------	----

**Commission of the Commission
Stream & Location: CFBL TINKES CIERT RM: Date: 7/18/12
See Report Map Scorers Full Name & Affiliation: Tlummus n / LBG
River Code: 64/1600 STORET #: Lat./Long.:41.3664 18/.4635 Office verified location
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present Check ONE (Or 2 & average) BEST TYPES POOL BISTLE OTHER TYPES POOL BISTLE ORIGIN QUALITY
□□ BLDR /SLABS [10] □□ HARDPAN [4] □ LIMESTONE [1] □ HEAVY [-2]
□ □ BOULDER [9] 10 □ □ DETRITUS [3] □ SILT □ MODERATE [-1] Substrate □ □ COBBLE [8] 50 60 □ □ MUCK [2] □ WETLANDS [0]
GRAVEL [7] 20 70 GILT [2] 70 3 HARDPAN [0] FREE [1]
SAND [6] SANDSTONE [0] SANDSTONE [0] SANDSTONE [1] SANDSTO
NUMBER OF BEST TYPES or more [2] sludge from point-sources) LACUSTURINE [0] WORMAL [0] 20
Comments SHALE [-1] SHALE [-1] NONE [1] COAL FINES [-2]
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest
quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootway in deep / fast water, or deep, well-defined, functional pools.
UNDERCUT BANKS [1] POOLS > 70cm [2] OXBOWS, BACKWATERS [1] MODERATE 26-75% [7]
OVERHANGING VEGETATION [1] ROOTWADS [1] AQUATIC MACROPHYTES [1] SPARSE 5 < 25% [3] SHALLOWS (IN SLOW WATER) [1] BOULDERS [1] LOGS OR WOODY DEBRIS [1] NEARLY ABSENT < 5% [1]
X ROOTMATS [1]
Comments Maximum 20
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)
SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY HIGH MISS CONTROL CHANNELIZATION STABILITY CHANNELIZATION CHANNEL
☐ MODERATE [3] DE GOOD [5] A GOOD [5] A GOOD [6] A GOO
FAIR 3 RECOVERING (3) LOW (1) Channel Channel
Comments Maximum US
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY
EROSION DIMINE > 50m [4] DEB FOREST, SWAMP [3] FOREST OF DIDICONSERVATION TILLAGE [1] DIMINE / CITILE [3] DEB MODERATE 10-50m [3] DESHRUB OR OLD FIELD [2] DILURBAN OR INDUSTRIAL [0]
MODERATE [2] NARROW 5-10m [2] RESIDENTIAL PARK, NEW FIELD [1] MINING / CONSTRUCTION [0]
☐ HEAVY / SEVERE [1] ☐ VERY NARROW < 5m [1] ☐ FENCED PASTURE [1] Indicate predominant land use(s) ☐ NONE [0] ☐ OPEN PASTURE, ROWCROP [0] past 100m riparian. Riparian
Comments District Comments Comments
10
5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH CHANNEL WIDTH CURRENT VELOCITY Recreation Potential
Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply Primary Contact
> 1m [6] POOL WIDTH > RIFFLE WIDTH [2] TORRENTIAL [-1] SLOW [1] SECONDARY CONTACT [1] O.7-<1m [4] POOL WIDTH = RIFFLE WIDTH [1] VERY FAST [1] SLOW [1] CIPTURE AND AND CONTROL OF THE PROPERTY
□ 0.4-<0.7m [2] □ POOL WIDTH < RIFFLE WIDTH [0] □ FAST [1] □ INTERMITTENT [-2]
☐ 0.2-<0.4m [1]
Comments Maximum 12
Indicate for functional riffles; Best areas must be large enough to support a population One (No. 2 & average) One (No. 2 & average)
of riffle-obligate species: Check ONE (Or 2 & average). Check ONE (Or 2 & average). Check ONE (Or 2 & average). Check ONE (Or 2 & average). Check ONE (Or 2 & average). Check ONE (Or 2 & average).
□ BEST AREAS > 10cm [2] □ MAXIMUM > 50cm [2] STABLE (e.g., Cobble, Boulder) [2] □ NONE [2]
BEST AREAS 5-10cm [1] MAXIMUM < 50cm [1] MOD, STABLE (e.g., Large Gravel) [1] CLOW [1] CMAXIMUM < 50cm [1] MODERATE [0] Riffle / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] MODERATE [0] RIFFLE / CMAXIMUM < 50cm [1] RIFFLE / CMAXIMUM < 50cm
[metric=0] Comments [metric=0] Run Maximum Signature And [5]
C) CPADICAT >=
TO A STATE OF THE
DRAINAGE AREA MODERATE [6-10]

FI MEASUREMENTS bankfull max. depth Roodprone x* width entrench.ratio bankfull 7 depth X bankfull width 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 HARDENED / URBAN / DIRT&GRIME FALSE BANK / MANURE / LAGOON LOGGING / IRRIGATION / COOLING WWTP / CSO / NPDES / INDUSTRY BMPs-CONSTRUCTION-SEDIMENT NATURAL / WETLAND / STAGNAN ACID / MINE / QUARRY / FLOW ATMOSPHERE / DATA PAUCITY BANK / EROSION / SURFACE WASH H20 / TILE / H20 TABLE PARK / GOLF / LAWN / HOME CONTAMINATED / LANDFILL EJ ISSUES Circle some & COMMENT 爿 PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA FLOOD CONTROL / DRAINAGE MODIFIED / DIPPED OUT / NA MOVING-BEDLOAD-STABLE YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED IMPOUNDED / DESICCATED D) MAINTENANCE RELOCATED / CUTOFFS ARMOURED / SLUMPS ISLANDS / SCOURED LEVEED / ONE SIDED INVASIVE MACROPHYTES **BIAESTHETICS** □ CSO₆/SSO₆/QUTFAI □ NUISANCE ALGAE **EXCESS TURBIDITY** POOL: □>100ft2□>3ft AREA DEPTH ☐ DISCOLORATION
☐ FOAM (SCUM
☐ OIL SHEEN
☐ TRASH/(LITTER)
☐ NUISANCE/ODOR NUISANCEODOR DISCOLORATION CJ RECREATION SECCH! DEPTH DE COMPANDE DE COM 1st -sarrole pass- 2nd -- securio pass--0 > 70 cm/ CTB CLARITY STAGE □ 20 <4) cm Stream Drawing: A] SAMPLED REACH □ 40-70 cm Check ALL that apply < 20 cm CLOSED □ > 85%-OPEN □ 55%-<85% CANOPY DISTANCE BOAT WADE METHOD meters

		В	A
U.	اسرو		A

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 18

Stream & Location: CFBL TIDERS CLOCK RM: Date: 7/18/12
See Rowie Man Scorers Full Name & Affiliation: Flanguista / LBG
River Code: 64/1600 STORET#: Lat./Long.:41.3664 181.4635 Office verified location
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES;
DECT TYPES OTHER TYPES ORIGIN OHALITY
BLDR /SLABS [10] HARDPAN [4] LIMESTONE [1] HEAVY [-2]
□ BOULDER [9] 10 20 □ □ DETRITUS [3] ■ TILLS [1] SILT □ MODERATE [-1] Substrate
☐ COBBLE [8] SO GO ☐ MUCK [2] ☐ WETLANDS [0] SILT SUNORMAL [0] ☐ GRAVEL [7] SO TO ☐ SILT [2] SILT [2] ☐ HARDPAN [0] ☐ FREE [1]
SAND [6] 10 5 GARTIFICIAL [0] SANDSTONE [0] ODE DEXTENSIVE [-2]
BEDROCK [5]
2 3 OF ISSS [0]
Comments Coal fines [-2],
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal AMOUNT
quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large Check ONE (Or 2 & average)
diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.
UNDERCUT BANKS [1]
SHALLOWS (IN SLOW WATER) [1] BOULDERS [1] LOGS OR WOODY DEBRIS [1] NEARLY ABSENT <5% [1]
Cover
Comments Maximum 20
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)
SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY
☐ HIGH [4] → □ EXCELLENT [7] → NONE [6] ☐ HIGH [3]
☐ MODERATE [3]
I LOW [2] THE FAIR [3] IN RECOVERING [3] LOW [1] Channel Channel
Comments Maximum 120
AT DANIE PROGRAM AND DIDABLAN TONE OF THE PARTY OF THE PA
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average) River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REPOSION DIMINES 50m [4] FOREST SWAMP 1318 18 18 18 19 10 CONSERVATION TILLAGE [1]
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY EROSION
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY EROSION DOWNER SOM [4] SEE FOREST, SWAMP [3] CONSERVATION TILLAGE [1] NONE / LITTLE [3] SEE MODERATE 10-50m [3] SESHOUS OR OLD FIELD [2] DOWNER OR INDUSTRIAL [0] MODERATE [2] NARROW 5-10m [2] DOWNER OF THE PARK, NEW FIELD [1] DOWNING / CONSTRUCTION [0]
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY EROSION WIDE > 50m [4] SEMIODERATE 10-50m [3] SEMIODERATE 10-50m [3] SHRUB OR OLD FIELD [2] URBAN OR INDUSTRIAL [0] MODERATE [2] NARROW 5-10m [2] RESIDENTIAL PARK, NEW FIELD [1] Indicate predominant land use(s)
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY EROSION WIDE > 50m [4] SEM FOREST, SWAMP [3] >
River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY EROSION
RIVER right looking downstream RIPARIAN WIDTH REROSION RIVER Som [4] RIPARIAN WIDTH REROSION RIVER SOM [4] REROSION RIVER SOM [4] REROSION RIVER SOM [4] REROSION RIVER SOM [5] RESIDENTIAL PARK, NEW FIELD [7] RIPARIAN WIDTH REPOSION RIVER [7] RIPARIAN WIDTH REPOSION RIVER [7] REPOSION RIVER PARK NEW FIELD [7] REPOSION RIV
RIVER right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REROSION CONSERVATION TILLAGE [1] CONSERVATION TILLAGE
RIVER right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY FOREST, SWAMP [3] SIMODERATE 10-50m [3] SIMO
RIPARIAN WIDTH EROSION
RIPARIAN WIDTH EROSION WIDE > 50m [4] SIPARIAN WIDTH FLOOD PLAIN QUALITY CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] WINING / CONSTRUCTION [0] HEAVY / SEVERE [1] VERY NARROW < 5m [1] FENCED PASTURE [1] Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10 FOOL / GLIDE AND RIFFLE / RUN QUALITY Check ONE (Or 2 & average) Check ALL that apply Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply Check ONE (ONLY!) Check ONE (Or 2 & average) Check ALL that apply Check ALL that apply Check ONE (ONLY!)
RIPARIAN WIDTH EROSION
RIPARIAN WIDTH EROSION WIDE > 50m [4] SUFFREST, SWAMP [3] CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] Indicate predominant land use(s) past 100m riparian. Riparian Maximum DEPTH Check ONE (O/L/Y) Check ON
RIPARIAN WIDTH EROSION NONE / LITTLE [3] MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] SUBSTRUME OR OLD FIELD [2]: MIDE > 50m [4] MIDE >
RIPARIAN WIDTH EROSION NONE / LITTLE (3) MODERATE 10-50m [4] MIDE > 50m [4
RIPARIAN WIDTH EROSION MNDE > 50m [4] SHRUB OR OLD FIELD [2]: MODERATE [2] NARROW < 5m [1] FENCED PASTURE [1] NARROW < 5m [1] FENCED PASTURE [1] NONE [0] Comments RIPARIAN WIDTH FOREST, SWAMP [3] SHRUB OR OLD FIELD [2]: Indicate predominant land use(s) Past 100m riparian. Riparian Maximum Maximum NoNE [0] POOL / GLIDE AND RIFFLE / RUN QUALITY Check ONE (ONLY) ShruB OR OLD FIELD [2]: Indicate predominant land use(s) Past 100m riparian. Riparian Maximum Naximum Naximum 10 Recreation Potential Primary Contact Fecondary Contact Fec
RIPARIAN WIDTH EROSION WIDE SOM [4] SUBSTINATE 10 SOM [3] SHRUE OR OLD FIELD [3] URBAN OR INDUSTRIAL [0] Indicate predominant land use(s) past 100m riparian. Riparian Reparian Reparian Reparian Reparian Reparian Reparian Reparian Recreation Potential Primary Contact Secondary Contact S
RIVER right looking downstream RIPARIAN WIDTH ROSION NONE LITTLE [3] MODERATE [3] NARROW 5-10m [2] RESIDENTIAL PARIAN FOREST, SWAMP [3] MODERATE [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] MODERATE [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL [1]
RIPARIAN WIDTH FLOOD PLAIN QUALITY RROSION Wide Som [4] FOREST, SWAMP [3] CONSERVATION ILLAGE [1] Wide Som [4] Riparian Construction Illage [1] Wide Som [4] Riparian R
RIVER right looking downstream RIPARIAN WIDTH ROSION NONE LITTLE [3] MODERATE [3] NARROW 5-10m [2] RESIDENTIAL PARIAN FOREST, SWAMP [3] MODERATE [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] MODERATE [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL [1] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL PARIAN FOREST, SWAMP [3] RESIDENTIAL [1]

OhioEPA

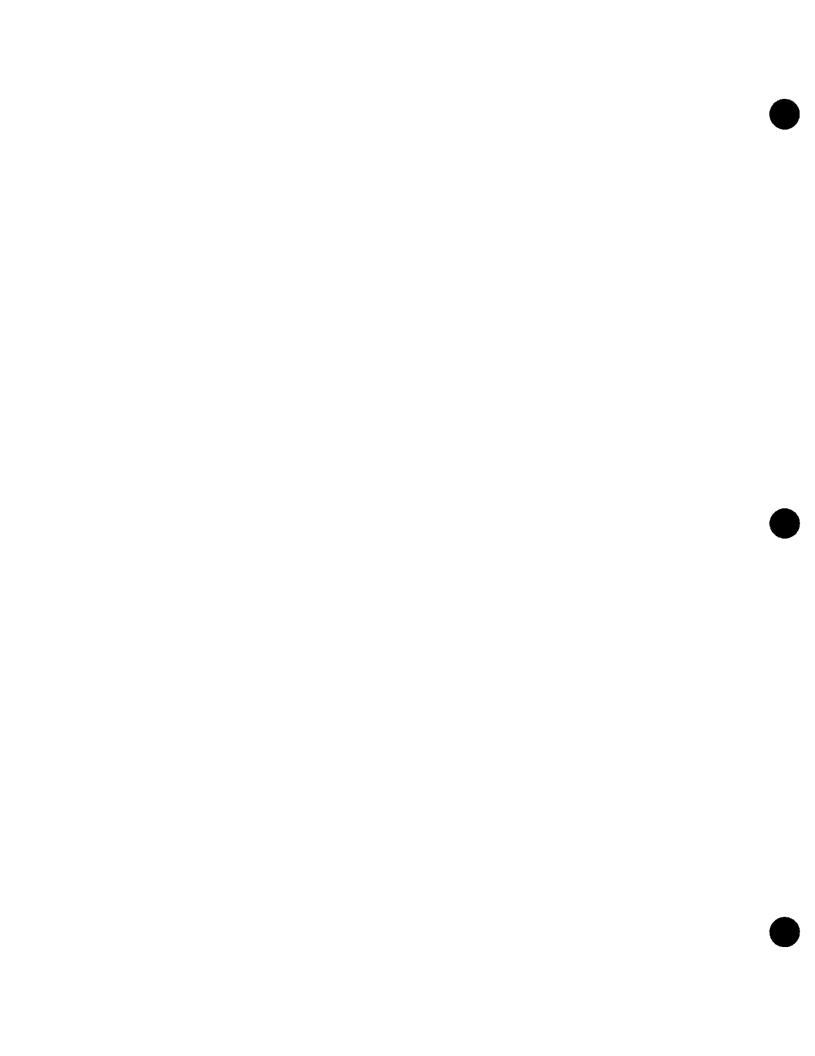
Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI	Score:	(K.S)
------	--------	-------

Stream & Location: しゃるM	RM: Date: 7116-172
Tinkers Creek Scorers Full Name & Affiliation:	: Thinnogan @ LBC-
River Code:	72 181.4581 Office verified Location
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLE ORIGIN BLDR /SLABS [10]	ONE (Or 2 & average) QUALITY HEAVY [-2] SILT MODERATE [-1] Substrate NORMAL [0] FREE [1] DESCRIPTION OF THE PROPERTY OF
□□ BEDROCK [5] (Score natural substrates; ignore □ RIP/RAP [0] NUMBER OF BEST TYPES: □ 4 or more [2] sludge from point-sources) □ LACUSTURINE [0] □ SHALE [-1] □ COAL FINES [-2]	OJ MODERATE [-1] Maximum 20 NONE [1]
2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more commo quality; 2-Moderate amounts, but not of highest quality or in small amounts quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional UNDERCUT BANKS [1] POOLS > 70cm [2] OXBOWS, BACKWATE OVERHANGING VEGETATION [1] ROOTWADS [1] AQUATIC MACROPHY SHALLOWS (IN SLOW WATER) [1] BOULDERS [1] LOGS OR WOODY DEED COmments	check ONE (Or 2 & average) al pools. ERS [1] MODERATE 25-75% [7] YTES [1] R SPARSE 5-<25% [3]
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average) SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY HIGH [4] EXCELLENT [7] NONE [6] HIGH [3]	4.9
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (OI River right looking downstream RIPARIAN WIDTH REROSION WIDE > 50m [4] WIDE > 50m [4] WIDE > 50m [3] WIDE > 50m [4] WIDE >	LITY R CONSERVATION TILL AGE [1] URBAN OR INDUSTRIAL [0] D (1] WINING / CONSTRUCTION [0]
	10
5] POOL / GLIDE AND RIFFLE / RUN QUALITY MAXIMUM DEPTH Check ONE (ONLY!) Check ONE (Or 2 & average) The result of the result	Primary Contact Secondary Contact (circle one and comment on back) Pool/
Indicate for functional riffles; Best areas must be large enough to support of riffle-obligate species: Check ONE (Or 2 & average). Check ONE (Or 2 & average). RIFFLE DEPTH RIFFLE / RUN SUBSTRATE RIFFLE	
6] GRADIENT (44 ft/mi) UVERY LOW - LOW [2-4] %POOL: 15 DRAINAGE AREA MODERATE [6-10] %RUN: 15	%GLIDE: Ø Gradient Maximum 10

APPENDIX I OHIO EPA HHEI DATA SHEETS





ChicEPA Primary Headwater Habitat Evaluation Form

·						
ITE NAM E/LOCATION	UFBN)-S	1)NT 71	2 Tinters	(rect		189 This bu
SITE ENGTH OF STREAM REACH (ft)	NUMBER	RIVER BASIN	4613 5000	DRAII	NAGE AREA (mi²)	Petennia
ength of Stream Reach (1) Tate 7/14/12 Scorer	CF/NT COU	LONG 5	E Ohemora	/ CODE	RIVER MILE	····
NOTE: Complete All Items C			•			
	_					
TREAM CHANNEL (***) X	LNONE / NATURAL CHAN	NEL RECOVE	RED RECOV	ERING DE	RECENT OR NO REC	OVERÝ
			C19107	- Fr		*.
	ercent of every type of sub ber of significant substrate t					HHEI
TYPE	PERCENT	TVDE			PERCENT	Metric
BLDR SLABS [16 pts]		SILT LEAF	[3 pt]	DDIO Martol		Points
BOULDER (>256 mm) BEDROCK [16 pt]	fae bis}		PACKWOODÝ DE DETRITUS [3 pts]			Substrate
OBBLE (65-256 mm)	[12 pfs]	□ 🕮 CLAY	or HARDPAN In a	ntl :	40	Max = 40
☐		OO MUC	K [0 pts]	J-18-1		13
		ARTII	FICIAL [3 pts]	e vita	·, -	
Total of Percentages Bidr Slabs, Boulder, Cobbl		(A) 9			(B) 2/	A+B
CORE OF TWO MOST PREDOM		s: 	TOTAL NUMBER O	F SUBSTRA	TE TYPES:	
Maximum Pool Depth (Mo	easure the maximum pool	depth within the b	i1 meter (200 ft) ev	aluation read	h at the time of	Poel Depth
evaluation. Avoid plunge p	pols from road culverts or st	orm water pipes)	(Check ONLY one	box):		Max = 30
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]		□ <59	cm - 10 cm [15 pts] cm [5 pts]			
أستند أحمد المستريخ والمراجع و						
> 10 - 22.5 cm [25 pts]		NO.	WATER OR MOIST	CHANNEL	0 pts)	1
COMMENTS	sured as the average of 3-	4 measurements)	_MAXIMUM POOL	DEPTH (ce	ntimeters):	Bankfull
COMMENTSBANK FULL WIDTH (Mea	sured as the average of 3-	4 measurements)	_MAXIMUM POOL (Check 0)) m = 1.5 m (> 3.3"=	. DEPTH (ce NLY one bo: 4'8') (15 pts	ntimeters):	Width
COMMENTSBANK FULL WIDTH (Mea	sured as the average of 3-	4 measurements)	_ MAXIMUM POOL	. DEPTH (ce NLY one bo: 4'8') (15 pts	ntimeters):	
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13' > 1.5 m - 3.0 m (> 4'8'-8'7	sured as the average of 3-) [25 pts] ") [20 pts]	4 measurements)	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3°3" -) m (≤ 3°3" (5 pts)	DEPTH (ce NLY one bo 4'8') [15 pts	ntimeters):	Width
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13' > 1.5 m - 3.0 m (> 4'8'-8'7	sured as the average of 3-	4 measurements)	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3°3" -) m (≤ 3°3" (5 pts)	DEPTH (ce NLY one bo 4'8') [15 pts	ntimeters):	Width
COMMENTS	sured as the average of 3-) [25 pts] ") [20 pts] This int	4 measurements) > 1,0 \$ \left(\frac{1}{2} \right) \left(\frac{1} \right) \left(\frac{1}{2} \right) \left(\frac{1}{2} \right	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3"-) m (≤ 3.3") [5 pts] _ AVERAGE BANK so be completed	DEPTH (ce NLY one bo: 4' 8") [15 pts	ntimeters):	Width
COMMENTS BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13' > 1.5 m - 3.0 m (> 4' 8" - 9') COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH	sured as the average of 3- [25 pts] [120 pts] This interpretation of the state o	4 measurements) 2 1,1 2 1,1 3 1,1 5 1,1 6	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3/3*-) m (≤ 3/3*) [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig	DEPTH (ce NLY one bo: 4' 8") [15 pts	ntimeters):	Width
COMMENTS BANK FULL WIDTH (Mea) > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13' > 1.5 m - 3.0 m (> 4' 8" - 9" 7 COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L. R. (Per Bank)	This into the complete of 3-1 (25 pts) This into the complete of 3-1 (25 pts) The complete of 3-1 (25 pts)	4 measurements) 1		DEPTH (ce NLY one box 187 [15 pts (FULL WIDT ht (R) as look	ntimeters): (i): (ii): (iii): (iii): (iiii): (iii): (iiii): Width	
COMMENTS BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13' > 1.5 m - 3.0 m (> 4'8"- 9'7' COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10m	This into the complete of 3-1 (25 pts) This into the complete of 3-1 (25 pts) The complete of	4 measurements) 1.1 5 1.1 6 1.1	_ MAXIMUM POOL (Check O) m - 1.5 m (> 333*-) m (≤ 33*) [5 pts] AVERAGE BANK so be completed ver Lefl (L) and Rig per Bank) and	DEPTH (ce	thimeters): (a): (b): (c): (d):	Width
COMMENTS BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7" - 13' > 1.5 m - 3.0 m (> 4'8" - 9'7) COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m	Sured as the average of 3- [25 pts] [120 pts] This into the sure of the sur	formation must als Y TNOTE: Ri AIN QUALITY Most Predominant Wature Forest, Serield	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3"-) m (≤ 3.3") [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig per Bank) and and arub or Old	DEPTH (ce	ntimeters): (a): (b): (c): (d):	Width
COMMENTS BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13' > 1.5 m - 3.0 m (> 4'8"- 9'7' COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10m Moderate 5-10m Narrow < 5m	Sured as the average of 3- [25 pts] This int IND FLOODPLAIN QUALIT L R L R IND FLOODPL	formation must also state of the state of t	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3"-) m (≤ 3.3") [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig per Bank) and and arub or Old	DEPTH (ce	chilmeters): All (meters) All (meters) Conservation Tiliage Urban or Industrial Open Pasture, Row Crop	Width
COMMENTS BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7" - 13' > 1.5 m - 3.0 m (> 4'8" - 9'7) COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m	Sured as the average of 3- [25 pts] This int IND FLOODPLAIN QUALIT L R L R IND FLOODPL	formation must als Y TNOTE: Ri AIN QUALITY Most Predominant Wature Forest, Serield	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3"-) m (≤ 3.3") [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig per Bank) and and arub or Old	DEPTH (ce	thineters): (a): (b): (c): (d):	Width
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m -4.0 m (> 9'7"-13') > 1.5 m -3.0 m (> 4'8"-9") COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide >10 m Moderate 5-10 m Narrow <5 m None COMMENTS	Sured as the average of 3- [25 pts] This int IND FLOODPLAIN QUALIT L R L R IND FLOODPL	formation must also some formation must also some formation must also some formation must also some formation for some forest, we formature Forest, we formature Forest, some formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest fores	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3") D m (≤ 3.3") [5 pts] AVERAGE BANK so be completed ver Left (L) and Rig per Bank) land nrub or Old lew Field	DEPTH (ce	chilmeters): All (meters) All (meters) Conservation Tiliage Urban or Industrial Open Pasture, Row Crop	Width
BANK FULL WIDTH (Meal > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13') > 1.5 m - 3.0 m (> 4'8"- 9'7') COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH Wide > 10 m Moderate 5-10 m Moderate 5-10 m None COMMENTS FLOW REGIME (A Stream Flowing	This into the control of the control	formation must also sometimes of the second pasture forest, Second pasture forest, Park, Note of the second pasture forest of the second pasture forest of the second pasture forest of the second pasture forest of the second pasture for the second pastu	_ MAXIMUM POOL (Check O) m = 1.5 m (> 3.3"- D m (≤ 3.3") [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig per Bank) and arub or Old lew Field Moist Channel,	L R C	intimeters): (a): (b): (c): (d): Width Max=30	
BANK FULL WIDTH (Meal > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'- 13') > 1.5 m - 3.0 m (> 4'8"- 9'7') COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH Wide > 10 m Moderate 5-10 m Moderate 5-10 m None COMMENTS FLOW REGIME (A Stream Flowing	This into the company of 3-1 (25 pts) This into the company of th	formation must also some formation must also some formation must also some formation must also some formation for some forest, we formature Forest, we formature Forest, some formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest formation for some forest fores	_ MAXIMUM POOL (Check O) m - 1.5 m (> 3.3"-) m (≤ 3.3" [5 pts] _ AVERAGE BANK so be completed ver Left (L) and Rig per Bank) land arub or Old lew Field	L R C	intimeters): (a): (b): (c): (d): Width Max=30	
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m	This into the control of the control	formation must also also also also also also also also	MAXIMUM POOL (Check O)m - 1.5 m (> 3.3",)m (≤ 3.3") [5 pts] AVERAGE BANK so be completed ver Left (L) and Rig per Bank) land hrub or Old lew Field Moist Channel, no	DEPTH (ce NLY one box (FULL WIDT ht (R) as look R CFULL WIDT ht (R) as look water (Epherical Solution of the color	intimeters): (a): (b): (c): (d): Width Max=30	
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m -4.0 m (> 9'7'-13' > 1.5 m -3.0 m (> 4'8'-8') COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m None COMMENTS FLOW REGIME (A Stream Flowing Subsurface flow with COMMENTS SINUOSITY (Numb None	This interpretation (Cherisolated pools (Interstitial)	formation must all Y 2 NOTE: Ris AIN QUALITY Most Predominant Mature Forest, Wet mmature Forest, Seld Residential, Park, Note Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture Control Pasture	MAXIMUM POOL (Check O) m - 1.5 m (> 3.3") M (≤ 3.3") [5 pts] AVERAGE BANK so be completed ver Left (L) and Rig per Bank) land nrub or Old lew Field Moist Channel, Dry channel, no eck ONLY one box 2.0	DEPTH (ce NLY one box (FULL WIDT IN (R) as look IN (R) as look IN (R) (R) (R) (R) (R) (R) (R) (R) (R) (R)	intimeters): (a): (b): (c): (d): Width Max=30	
BANK FULL WIDTH (Mea > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9'7'-13' > 1.5 m - 3.0 m (> 4'8'-8') COMMENTS RIPARIAN ZONE A RIPARIAN WIDTH L R (Per Bank) Wide > 10 m Moderate 5-10 m Narrow < 5 m None COMMENTS FLOW REGIME (A Stream Flowing Subsurface flow with COMMENTS SINUOSITY (Numb	This interpretation (Check isolated pools (Interstitial) Time of Evaluation) (Check isolated pools (Interstitial) 1.5	formation must also also also also also also also also	_ MAXIMUM POOL (Check O)m - 1.5 m (> 3 3") Om (≤ 3 3") [5 pts] AVERAGE BANK so be completed ver Left (L) and Rig per Bank) land hrub or Old Moist Channel, in Dry channel, no	DEPTH (ce NLY one box (FULL WIDT ht (R) as look R CFULL WIDT ht (R) as look water (Epherical Solution of the color	thimeters): H (meters) Conservation Tillage Urban or Industrial Open Pasture, Row Crop Alining or Construction s, no flow (Intermittent meral)	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORNIED? - TYes JUNO QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
Distance from Evaluated Stream
OWH 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: / WINSDUS NRCS Soil Map Page: NRCS Soil Map Stream Order County: Cuyahasa Township City. Clonullaw Villay
County: Live Name Township / City. Carrowillow Direct
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of lest precipitation: Quantity:
Photograph Information: CFW U/D
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): (Note lab sample no, or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
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) Salamanders Observed? (Y/N) Voucher? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology.
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location (F87) Linkes Geek
FLOW - CFBM)
THE PETERS

ChieFPA Primary Headwater Habitat Evaluation Form HHELScore (sum of metrics 1.2.3): 78

SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A 8 B. TYPE BLDR SLABS [16 pts] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] Total of Percentages of Bid Slabs, Boulder, Cobble, Bedrock 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 sform water pipes) COMMENTS MAXIMUM POOL DEPTH (centimeters): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13) [36 pts] NO WATER OR MOIST CHANNEL [0 pts] NO WATER OR MOIST CHANNEL [0 pts] > 1.5 m (> 3° 3° -4.8°) [15 pts] Videntage	UP B/U-S	UNT 70 7	inters (reet	·	60 /	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions TREAM CHANNEL		SITE NUMBER	RIVER BASIN	DF	AINAGE AREA (mi²) 🏒	89 (his
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions TREAM CHANNEL RECOVERED RECEVERING RECENT OR NO RECOVERY MODIFICATIONS: SUBSTRATE (Estimato percent of every type of substrate present. Check Only type percentions of significant substrate types found (data of 8). Final metric score is sum of boxes A & B. PERCENT YPE BOULDER (P256 mm) (19 pts) SILT (3 pt) COBULE (65-256 mm) (12 pts) SILT (3 pt) COBULE (65-256 mm) (19 pts) SILT (3 pt) COBULE (65-256 mm) (19 pts) SAND (27 mm) (2 pts) ARTIFICIAL (3 pts) 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 sform water pipes) (Check ONLY one box): 30 sentimeters (25 pts) SILT (3 pts) Som (3 pts) 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 sform water pipes) (Check ONLY one box): 30 sentimeters (25 pts) Silt (3 pts)	ENGTH OF STREAM REACH	1(ft) 55 LAT 41.54	6 + LONG -81.457	A RIVER CODE_	RIVER MILE	<i>}</i>
SUBSTRATE (Estimate percent of every type of substrate present. Check C/MLY two predominent substrate TYPE boxes (Max of 40). And total number of significant substrate types found (Mex of 8). Final metric score is sum of boxes A & B. PERCENT TYPE BOXLDER (2-266 mm) [19 pts]	ATE 7/14/12 SCO	RER CF/NI COMM	MENTS <u>ΞΩΛ</u>	emera l		
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A 8 B. Metric PPE BLDR SLABS [18 pts]	NOTE: Complete All Iten	ns On This Form - Refer to "	Field Evaluation Mar	ual for Ohio's PHV	VH Streams" for Instr	uctions
SUBSTRATE (Estimate percent of every type of substrate present. Check CNLY two predominent substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Mex of 8). Final metric score is sum of boxes A & B. PERCENT TYPE BOXIDER (2-266 mm) [18 pits]	TREAM CHANNEL	MINONE/NATURAL CHANN	EL RECOVERED	☐ RECOVERING C	RECENT OF NO RECO	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check C/NLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. PERCENT TYPE BOXIDER (6286 mm) [19 pis]	MODIFICATIONS:		() (c)	US T. P	HWH	
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A 8 B. Metric PPE BLDR SLABS [18 pts]						
### BLDR SLABS [16] pts] BLDR SLABS [16] pts] BOULDER (>256 mm) [16 pts] COBLE (68-256 mm) [12 pts] COBLE (68-256 mm) [12 pts] CRAVEL (2-64 mm) [19 pts] Total of Percentages of Bldr Slabs Boulder, Cooble, Bedrock Bldr Slabs Boulder, Cooble, Bedrock 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 sform water pipes) COMMENTS COMMENTS AVERAGE BANKFULL WIDTH (Measured as the average of 3-4 measurements) AVERAGE BANKFULL WIDTH (Measured as the average of 3-4 measurements) AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN WIDTH RIPARIAN W		·	·			HHEI
BOULDER (>226 mm) [16 pts]	TYPE		TYPE			Metric
BEDROCK [16 pt]					(61.1	Points
COBBLE (65-256 mm) [12 pits]					18]	Substrate
A ARTIFICIAL [3 pts] Total of Percentages of Bidd Sides Boulder, Cobble, Bedrock CORE 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 evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box). 30 ceintimeters [20 pts] > 22.5 - 30 cm [36 pts] > 20.5 - 30 cm [36 pts] 20.5 -					40	Max = 40
A * B Total of Percentages of Blor Slabs, Boulder, Cobble, Bedrock 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 centifyineters (200 fts) 40			=		13	
Elict Slabs, Boulder, Cooble, Bedrock	_J ≥ SAND (<2 mm) [6	pts) 13	□□ ARTIFICIAL	[3 pts]	·	
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]			^{A)} [q]		(B) 2/	A+B
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 30 centiffysiters [20 pts]			TOTAL	NUMBER OF SUBST	RATE TYPES: 7	
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): 30 centiffysiters [20 pts]	Maximum Bool Donal	h (Massura the maximum east)	lanth within the 64 ment	ar (200 ff) evaluation re	each at the time of	Pool Cartt
>-1022.5 cm [25 pts] Sank Full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Max=30) Sa	evaluation. Avoid plus	oe nools from road culverts or sto	orm water nines) (Chec		sacil at the time of	
>-1022.5 cm [25 pts] Sank Full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Measured as the average of 3-4 measurements) Check ONLY one box): Sank full Width (Max=30) Sa	> 30 centimeters [20 pt	[8]	>5 cm - 10			
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 137) [36 pts]					L [0 pts]	$\ \varphi \ $
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 137) [36 pts]	COMMENTS		MAX	IMUM POOL DEPTH (centimeters):	
> 4.0 meters (> 13) [30 piss] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 piss] > 1.0 m (> 3' 3" - 4' 8") [15 piss] Number of bends per 61 m (200 ft) of channel; Otheck ONLY one box): Number of bends per 61 m (200 ft) of channel; Otheck ONLY one box): None						
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY RIPARIAN WIDTH FLOODPLAIN QUALITY Residential, Park, New Field Open Pasture, Row Crop Residential, Park, New Field Open Pasture, Row Crop Residential, Park, New Field Open Pasture, Row Crop None COMMENTS Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None 1.0 2.0 3.0	DAME FILL MARKET	Manager 1 and 1 and 2 an		(Observe AMI) Verse I		Dawles de
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY RIPARIAN WIDTH RIPARIAN WIDTH L R (Per Bank) Mide > 10m Mature Forest, Wetland Moderate 5-10m Residential, Park, New Field Narrow <5m Residential, Park, New Field Component Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Residential, Park, New Field Comments Floow Residential Comments Sinual Stream Flowing Subsurface flow with isolated pools (interstitial) Comments Sinual Stry (Number of bends per 61 m (200 ft) of channel) Comments Sinual Stry (Number of bends per 61 m (200 ft) of channel) Check ONLY one box): None 1.0 3.0	BANK FULL WIDTH (> 4,0 meters (> 13) [36	Measured as the average of 3-4 pts]		.5 m (> 3' 3" - 4' 8") [15]	pts]	
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	>4.0 meters (> 13') [36 >3.0 m -4.0 m (> 9' 7"	pts] 13) [25 pts]		.5 m (> 3° 3" - 4' 8") [15]	pts]	Width
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) Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest, Shrub or Old Mining or Industrial Field Narrow <5m Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (Al Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): None 1.0 Check ONLY one box): None 3.0	> 4,0 meters (> 131) [36] > 3,0 m - 4,0 m (> 9'7" > 1.5 m - 3.0 m (> 4'8"	pts] - 13) [25 pts] - 9' 7") [20 pts]	☐ > 1:0 m = 1 50	.5 m (> 3' 3" - 4' 8") [15 _] 3' 3") [5 pts]	33	Width
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) Mature Forest, Wetland Mature Forest, Shrub or Old Immature Forest, Shrub or Old Mining or Industrial Field Narrow <5m Residential, Park, New Field Open Pasture, Row Crop Mining or Construction COMMENTS FLOW REGIME (Al Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 Check ONLY one box): None 1.0 Check ONLY one box): None 3.0	> 4,0 meters (> 131) [36] > 3,0 m - 4,0 m (> 9'7" > 1.5 m - 3.0 m (> 4'8"	pts] - 13) [25 pts] - 9' 7") [20 pts]	☐ > 1:0 m = 1 50	.5 m (> 3' 3" - 4' 8") [15 _] 3' 3") [5 pts]	33	Width
L R (Per Bank)	> 4,0 meters (> 131) [36] > 3,0 m - 4,0 m (> 9'7" > 1.5 m - 3.0 m (> 4'8"	pts] - 13) [25 pts] - 9' 7") [20 pts]	> t:0 m - t S s 1.0 m (s	5m (> 3 3" - 4'8") [15] 3 3") [5 pts] RAGE BANKFULL WI	33	Width
Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m	> 4,0 meters (> 13') [36 > 3.0 m - 4.0 m (> 9' 7" > 1.5 m - 3.0 m (> 4' 8" COMMENTS	pts] - 13) [25 pts] - 9' 7') [20 pts] This info	AVE primation must also be of the Arnotte: River Lei	5 m (> 3 3" - 4 8") [15] 3 3") [5 pts] RAGE BANKFULL WI	DTH (meters)	Width
Narrow <5m	> 4,0 meters (> 13') [36' > 3.0 m - 4.0 m (> 9' 7" > 1.5 m - 3.0 m (> 4' 8" COMMENTS	pts] - 13) [25 pts] - 9' 7') [20 pts] This info NE AND FLOODPLAIN QUALITY HOTH FLOODPLA	AVE primation must also be of the third QUALITY	5 m (> 3 3" - 4 8") [15] 3 3") [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I	DTH (meters)	Width
Narrow <5m	> 4,0 meters (> 13') [36 > 3.0 m - 4.0 m (> 9' 7" > 1.5 m - 3.0 m (> 4' 8" COMMENTS	Prising This info	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3") [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I	DTH (meters)	Width
None Fenced Pasture Mining or Construction 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 SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 2,0 3,0	> 4.0 meters (> 13') [36' > 3.0 m - 4.0 m (> 9' 7" > 1.5 m - 3.0 m (> 4' 8" COMMENTS RIPARIAN ZO RIPARIAN W L R (Per Bank) Wide > 10m	This info NE AND FLOODPLAIN QUALITY #IDTH L R (N	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3") [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I	DTH (meters) coking downstream & Conservation Tiliage	Width
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing	> 4,0 meters (> 13') [36	Prising Prisin	AVE AVE AVE AVE AVE AVE AVE AVE	5m (>33"-48") [15] 33") [5 pts] RAGE BANKFULL WI completed f(L) and Right (R) as I	DTH (meters) Ooking downstream & Conservation Tiliage Urban or Industrial Open Pasture, Row	Width
Stream Flowing Subsurface flow with isolated pools (interstitiel) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) (Check ONLY one box): 2,0 3,0	> 4,0 meters (> 13') [36	Pte) - 13') [25 pte) - 13') [25 pte) - 9' 7') [20 pte) This info NE AND FLOODPLAIN QUALITY FLOODPLA L R (N M -10m	AVE AVE AVE AVE AVE ANOTE: River Let ANOTE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed f (L) and Right (R) as I	DTH (meters) coking downstream tr Conservation Tiliage Urban or Industrial Open Pasture, Row Crop	Width
Stream Flowing Subsurface flow with isolated pools (interstitiel) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) (Check ONLY one box): 2,0 3,0	> 4,0 meters (> 13') [36	Pte) - 13') [25 pte) - 13') [25 pte) - 9' 7') [20 pte) This info NE AND FLOODPLAIN QUALITY FLOODPLA L R (N M -10m	AVE AVE AVE AVE AVE ANOTE: River Let ANOTE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed f (L) and Right (R) as I	DTH (meters) coking downstream tr Conservation Tiliage Urban or Industrial Open Pasture, Row Crop	Width
COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	> 4,0 meters (> 13') [36	Pts] - 13) [25 pts] - 9 7) [20 pts] This info NE AND FLOODPLAIN QUALITY MOTH L R (N MOTH -10m	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed f (L) and Right (R) as I	DTH (meters) coking downstream tr Conservation Tiliage Urban or Industrial Open Pasture, Row Crop	Width
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 2 1.0 2.0 3.0	A,0 meters (> 13') [36' > 3.0 m - 4.0 m (> 9' 7" > 1.5 m - 3.0 m (> 4' 8" COMMENTS	This info PAR AND FLOODPLAIN QUALITY MDTH L R (N MDTH -10m R FE E (At Time of Evaluation) (Check	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I Old Id Id Id Id Id Id Id Incompleted Id Id Id Id Id Id Id Id Id I	cooking downstream & Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
☐ None ☐ 1.0 ☐ 2,0 ☐ 3,0	A,0 meters (> 13) [36] > 3,0 m - 4,0 m (> 9' 7") > 1.5 m - 3.0 m (> 4' 8") COMMENTS RIPARIAN ZO RIPARIAN W Per Bank) Noderate 5. None COMMENTS FLOW REGIM Stream Flowing Subsurface flow	This info - 13') [25 pts] - 9' 7') [20 pts] This info NE AND FLOODPLAIN QUALITY (IDTH FLOODPLA - 10m	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I Old Id Id Id Id Id Id Id Incompleted Id Id Id Id Id Id Id Id Id I	cooking downstream & Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
	A,0 meters (> 13) [36] > 3,0 m -4,0 m (> 9' 7") > 1.5 m -3.0 m (> 4' 8") COMMENTS RIPARIAN ZO RIPARIAN W (Per Bank) Wide >10 m Moderate 5: None COMMENTS FLOW REGIM Stream Flowing Subsurface flow COMMENTS	This info PRE AND FLOODPLAIN QUALITY FLOODPLA L R (N FI THE INFO THE IN	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I nk) Old old cthannel, isolated pothannel, no water (Ep	cooking downstream & Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	Width Max=30
	A,0 meters (> 13') [36' > 3.0 m -4.0 m (> 9' 7" > 1.5 m -3.0 m (> 4' 8" COMMENTS RIPARIAN ZO RIPARIAN W (Per Bank) RIPARIAN W (Per Bank) Moderate 5. Narrow <5m None COMMENTS_ FLOW REGIM Stream Flowing Subsurface flow COMMENTS_ SINUOSITY (N	This info PRE AND FLOODPLAIN QUALITY FLOODPLA L R (N This info The info	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I nk) Old old cthannel, isolated pothannel, no water (Ep	coking downstream & Conservation Tiliage Urban or Industrial Open Pasture, Row Crop Mining or Construction cols, no flow (Intermittent) chemeral)	Width Max=30
☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)	A,0 meters (> 13') [36 > 3.0 m -4.0 m (> 9' 7" > 1.5 m -3.0 m (> 4' 8" COMMENTS RIPARIAN ZO RIPARIAN W (Per Bank) Wide >10m Moderate 5 Narrow <5m None COMMENTS FLOW REGIM Stream Flowing Subsurface flow COMMENTS SINUOSITY (N	This info PE (Al Time of Evaluation) (Check with isolated pools (Interstitial) Cumber of bends per 61 m (200 ft) 1.5 ESTIMATE	AVE AVE AVE AVE AVE AVE AVE AVE	5 m (> 3 3" - 4 8") [15] 3 3" [5 pts] RAGE BANKFULL WI completed 1 (L) and Right (R) as I nk) Old di st Channel, isolated por channel, no water (E)	cooking downstream of Conservation Tiliage Urban or Industrial Open Pasture, Row Crop Mining or Construction cools, no flow (Intermittent) chemeral)	Width Max=30

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Tyes KNo QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S) WWH Name: Distance from Evaluated Stream 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: Twinsbus NRCS Soil Map Page: NRCS Soil Map Stream Order County: Cuyahasa Township/City: Chrowillow Village MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:
Photograph information: CFBU U/D
Elevated Turbidity? (Y/N): Canopy (% open):
Were samples collected for water chemistry? (Y/N): (Note lab sample no or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: BIOTIC EVALUATION (If Yes, Record all observations, Voucher collections optional, NOTE: all voucher samples must be labeled with the site ID number, include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher?
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 (F8) Introduced (F8)
FLOW - CFBW
THE HELLER
PHWH Form Page - 2

ChieFA Primary Headwater Habitat Evaluation Form

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

41	

LENGTU OF STORAM BEAC			
I CHATH AC STOCAM DEAC		ER BASIN UNT TO TINKE OD	
T/C/6	H(N) 1.0 FO LAT. 44.3689	LONG -81.463 RIVER CODE	Alver Mile
	- 17	TS Mod Class II PH	
NOTE: Complete All Ite		ld Evaluation Manual for Ohio's PH	
STREAM CHANNEL	NONE / NATURAL CHANNEL	☐ RECOVERED ☐ RECOVERING	TRECENT OR NO RECOVERY
MODIFICATIONS:	Draws wetlow up	P stream to Tinkers	(reet
A OUDOTOLTE (E-M-		As a second Objects OUR VALUE and a second	
		te present. Check ONLY two predominant found (Max of 8). Final metric score is sur	n of boxes A & B. HHEI
TYPE BLOR SLABS (1)		/PE	PERCENT Metric Points
BLOR SLABS (1)	mm) [16 pts]	SILT (3 pl) LEAF PACKWOODY DEBRIS (3)	pfs]
BEDROCK [18]		FINE DETRITUS (3 pis)	Substrate Max = 40
COBBLE (65-256	· · · · · · · · · · · · · · · · · · ·	CLAY of HARDPAN [0 pt]	
□ □ SAND (<2 mm) [ARTIFICIAL D pts)	76
Total of Percer	ntages of (A)	3.]	(B) A+B
Bidr Slabs, Boulder,	ntages of (A) Cobble, Bedrock <u>50</u> (A) Cobble, Bedrock <u>50</u> (B) COMINATE SÚBSTRATE TYPES:	TOTAL NUMBER OF SUBS	15 11 272
		h within the 61 meter (200 ft) evaluation (water pipes) (Check ONLY one box):	reach at the time of Pool Depth Max = 30
>30 centimeters [20]	ots)	🔲 > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pt		Scm [5 pts] No water or moist chann	Et [0 pts]
comments A	10 Flow	MAXIMUM POOL DEPTH	0
00111112110			
3. BANK FULL WIDTH > 4.0 meters (> 13) [30	(Measured as the average of 3-4 me	asurements) {Check ONLY one > 1.0 m - 1.5 m (> 3' 3" + 4' 8") [15	
>3.0m -4.0m (>9.7 >1.5m -3.0m (>4.6	" - 13') [25 pts]	≤ 1.0 m (≤ 3° 3") [5 pts]	Max=30
			10/15
		AVERAGE BANKFULL W	IDTH (meters)
	Vo Beaches		
COMMENTS	This information of the state o	ation <u>must</u> also be completed なNOTE: River Left (L) and Right (R) as	looking downstream☆
COMMENTSRIPARIAN ZO	This information of the state o	ation <u>must</u> also be completed なNOTE: River Left (L) and Right (R) as DUALITY	looking downstream☆
COMMENTS	This information of the composition of the composit	ation must also be completed ANOTE: River Left (L) and Right (R) as DUALITY Predominant per Bank) L R re Forest, Wetland	looking downstream☆ Conservation Tillage
COMMENTS RIPARIAN ZO RIPARIAN Y L R (Per Bank)	This information and FLOODPLAIN QUALITY MIDTH FLOODPLAIN C L R (Most Most	ation must also be completed	-
RIPARIAN ZO RIPARIAN ZO RIPARIAN I	This information in the second	atton must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) L R re Forest, Wetland I I	Conservation Tillage Urban or Industrial Open Pasture, Row
RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN NO (Per Bank) L R (Per Bank) Wide >10r Moderate Narrow <5	This information in the second	ation must also be completed ANOTE: River Left (L) and Right (R) as DUALITY Predominant per Bank) L R re Forest, Wetland ture Forest, Shrub or Old	Conservation Tillage Urban or Industrial
RIPARIAN ZO RIPARI	This information in the second	ation must also be completed ANOTE: River Left (L) and Right (R) as CUALITY Predominant per Bank) L R re Forest, Wetland ture Forest, Shrub or Old cential, Park, New Field	Conservation Tillage Urban or Industrial Open Pasture, Row Crop
RIPARIAN ZO RIPARI	This information This information This information This information This information FLOODPLAIN QUALITY MOST Matur ME (At Time of Evaluation) (Check Only)	ation must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) E Forest, Wetland ture Forest, Shrub or Old Ichtial, Park, New Field A Pasture	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
RIPARIAN ZS RIPARI	This information of Evaluation) This information of Evaluation (Check Or grave) This information of Evaluation (Check Or grave) This information of Evaluation of Evaluation (Check Or grave)	ation must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) E Forest, Wetland ture Forest, Shrub or Old Ichtial, Park, New Field A Pasture	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
RIPARIAN ZO RIPARI	This information of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This informat	atton must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) E Forest, Wetland ture Forest, Wetland cential, Park, New Field ded Pasture Moist Channel, isolated p Dry channel, no water (E	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO RIPARIAN ZO MODERNI ZO MODERNI ZO SUBSURFACE FLOW REGIT SUBSURFACE FLO	This information Company of the comp	atton must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) Per Forest, Wetland ture Forest, Wetland chential, Park, New Field Moist Channel, isolated pry channel, no water (Echannel) Check ONLY one box):	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction pools, no flow (Intermittent)
RIPARIAN ZO RIPARI	This information of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information in the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This information is the state of Evaluation (Check Of grave) This informat	atton must also be completed ANOTE: River Left (L) and Right (R) as QUALITY Predominant per Bank) E Forest, Wetland ture Forest, Wetland cential, Park, New Field ded Pasture Moist Channel, isolated p Dry channel, no water (E	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS RIPARIAN ZS None COMMENTS SINUOSITY (None 0.5 STREAM GRADIENT	This information of bends per 61 m (200 ft) of 0	atton must also be completed ANOTE: River Left (L) and Right (R) as DUALITY Predominant per Bank) The Forest, Wetland The Forest, Wetland The Forest, Shrub or Old The Park, New Field The Par	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction pools, no flow (Intermittent)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes Atlact	Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
	Distance from Evaluated Stream
CWH Name:	
U EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED A	
USGS Quadrangle Name: NRCS Soil Map Pa	ge: NRCS Soil Map Stream Order
USGS Quadrangle Name: Twinship NRCS Soil Map Pa County: Cuya hoga Township / City: Cu	mullow Village
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph information: CF3U U/D	
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. an	d 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:	

Pieto PALLiamen	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations: Voucher collections optional. ID number, Include appropriate field data sheets from the Print	•
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrate	Voucher? (Y/N) s Observed? (Y/N)Voucher? (Y/N)
Comments Regarding Biology:	
And the second s	
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 and	a narrative description of the stream's location
(XX)	
	1/100/
FLOW -	
FLOW	
3()	1/2/
	1 1 / + /
$\mathcal{I}_{I}}}}}}}}}}$	> 1 1/2 ×
	11.1/-
	Y / /
	1 / /
	· · · · · · · · · · · · · · · · · · ·

Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):	
SITE NAMEROCATION UNI to Tinkers Light	
SITE NUMBER RIVER BASIN NINGE'S CREEK DRAINAGE AREA (mi²) 1.11 LENGTH OF/STREAM REACH (ft) LAT. 41.36.25 LONG. S1.459. RIVER CODE RIVER MILE DATE 733/2 SCORER Shinsley COMMENTS PHWH Streams" for Instructions NOTE: Complete All Items On This Form Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions	105 17-
STREAM CHANNEL AND A NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY MODIFICATIONS:	•
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. TYPE PERCENT PERCENT PERCENT PERCENT PERCENT PERCENT PERCENT PERCENT POINT SILT [3 pt] BLDR SLABS [18 pts] SLAP PACKWOODY DEBRIS [3 pts] Substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate TYPE boxes (Max of 40). Add total number of significant substrate TYPE boxes (Max of 40). Add total number of significant substrate TYPE boxes (Max of 40). Add total number of significant substrate TYPE boxes (Max of 40). A BLOR of 40). Add total number of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 40). A Check Only of the percent of significant substrate TYPE boxes (Max of 8). Final metric score is sum of boxes A & B. HHI Metroper of the percent of t	rate 40
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): Sometimeters [20 pts] Some 10 cm [15 pts] > 22.5 - 30 cm [30 pts] Some 10 cm [15 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL to pts] COMMENTS MAXIMUM POOL DEPTH (centimeters):	•
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13) [38 pts]	h
This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS Woist 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 3.0 1,0 2.0 2,5 3.0 3,0 3.0 2,5 3.0	
STREAM GRADIENT ESTIMATE ☐ Flat (0 5 1/100 R) ☐ Flat to Moderate	_

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - 🗍 Yes 🕡 No QHEI Score(If Yes, At	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	·
WWH Name:	
CWH Name:	
EWH Name:	Distance from Evaluated Stream
. MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	
USGS Quadrangle Name: WITS WITS NRCS Soil Map	Page: NRCS Soil Map Stream Order
County: (UMANOGO Township/City: W)	out only
$J = J^{-1}$	
MISCELLAN EOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information: TSDL VOSTICON TOWNS COM	
Elevated Turbidity? (Y/N): NA Canopy (% open): 35%	
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): (If Yes, Record all observations. Voucher collections option ID number. Include appropriate field data sheets from the F	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebr	Voucher? (Y/N)Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation	
· A	
wetland	W.
CFCC -	-> (\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
FLOW - ITSIX	
LECON A MANUAL SALE	") { \
West land	40/
FLOW - Worland TSDK	$\frac{1}{c}$
	Las Las Las Las Las Las Las Las Las Las
	1.87
W. Land	
	MCPCCY

June 20, 2008 Revision
Stream becomes diffuse in two wetland greas.

Primary Headwater Habitat Evaluatio	
	of metrics 1, 2, 3).
SITE NAME/LOCATION UNT to Traver record	10145tv
SITE NUMBER RIVER BASIN TO LECT (FCOK LENGTH OF STREAM REACH (#) LAT. 41.3672 LONG. \$1.4589 RIVER CO	DRAINAGE AREA (mi²)
LENGTH OF STREAM REACH (R) 10 LAT. 41. 36.72 LONG, SIMON RIVER CO	DDERIVER MILE CO
DATE 7 3 SCORER Shirsten COMMENTS CHARLES	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio"	
STREAM CHANNEL ONONE / NATURAL CHANNEL OR RECOVERED RECOVERED MODIFICATIONS:	NG TRECENT OR NO RECOVERY
 SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predon (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score 	
TYPE PERCENT TYPE	PERCENT Metric Points
BOULDER (>256 mm) [18 pts] SILT [3 pt]:	
BEDROCK [18 pt] FINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	90 Max = 40
GRAVEL (2-64 mm) [8 pts]	\(\partial \)
□ □ SAND (<2 mm) [6 pts]	[L_`_
Total of Percentages of (A) (A) (Bldr Slabs, Boulder, Cobble, Bedrock	(B) 17 A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF S	SUBSTRATE TYPES:
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evalue	ation 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] □ < 5 cm [5 pts]	Cal
☐ > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CI	ANNEL [0 pts]
COMMENTS MAXIMUM POOL DI	EPTH (centimeters):
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL)	Y one box): Bankfull
□ > 4,0 meters (> 13') [30 pts] □ > 1.0 m - 1.5 m (> 3' 3" - 4' 8	•
□ > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	Max=30
□ > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	(S) (S)
□ > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts]	(5) (A) Max=30
□ > 3.0 m - 4.0 m (> 9 7'- 13') [25 pts]	ILL WIDTH (meters)
> 3.0 m - 4.0 m (> 9 7'- 13') [25 pts]	ILL WIDTH (meters)
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (RIPARIAN WIDTH FLOODPLAIN QUALITY L R (Per Bank) L R (Most Predominant per Bank) L	R) as looking downstream &
3.0 m - 4.0 m (> 9 7'-13') [25 pts]	R) as looking downstreams
3.0 m - 4.0 m (> 9 7'-13') [25 pts]	ILL WIDTH (meters)
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream\$\text{\text{\$\text{Conservation Tillage}}}\$ Urban or Industrial Open Pasture, Row
3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream & Conservation Tiliage Urban or Industrial
3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream\$\text{T}\$ Conservation Tiliage Urban or Industrial Open Pasture, Row Crop
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream a Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream\$\(\frac{1}{2}\) Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.0 m (s 3'3') [5 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7') [20 pts] AVERAGE BANKFU This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY	R) as looking downstream\$\(\frac{1}{2} \) Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream\$\(\frac{1}{2} \) Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream Conservation Tiliage Urban or Industrial Open Pasture, Row Crop Mining or Construction aled pools, no flow (Intermittent) aler (Ephemeral)
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream R Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction ated pools, no flow (Intermittent) ater (Ephemeral)
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	R) as looking downstream\$\frac{1}{5}\$ R) as looking downstream\$\frac{1}{5}\$ R Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction aled pools, no flow (Intermittent) aler (Ephemeral)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Tyes 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 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: NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Wya hage Township/ally: Willows we
MISCELLANEOUS [
Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:
Photograph Information: XDM VD Shore The Third Shore Commence of the Commence
Elevated Turbidity? (Y/N): M. Cahopy (% open):
$\sim \omega$
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): (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)
Performed? (Y/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) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/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) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology:
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Progs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Observed? (Y/N) Voucher? (Y/N
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Progs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Observed? (Y/N) Voucher? (Y/N
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Progs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Observed? (Y/N) Voucher? (Y/N
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Progs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: Observed? (Y/N) Voucher? (Y/N
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location **SD No.***
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location **SD No.***
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location **SD No.***
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location **SD No.***
Performed? (Y/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 Headwaler Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology. DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location with the site of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description and a narrative
Performed? (Y/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 Headwaler Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology. DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location with the site of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description and a narrative
Performed? (Y/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) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location **SD No.***
Performed? (Y/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 Headwaler Habitat Assessment Manual) Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology. DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location with the site of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location with the site of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description of the stream's location and a narrative description and a narrative

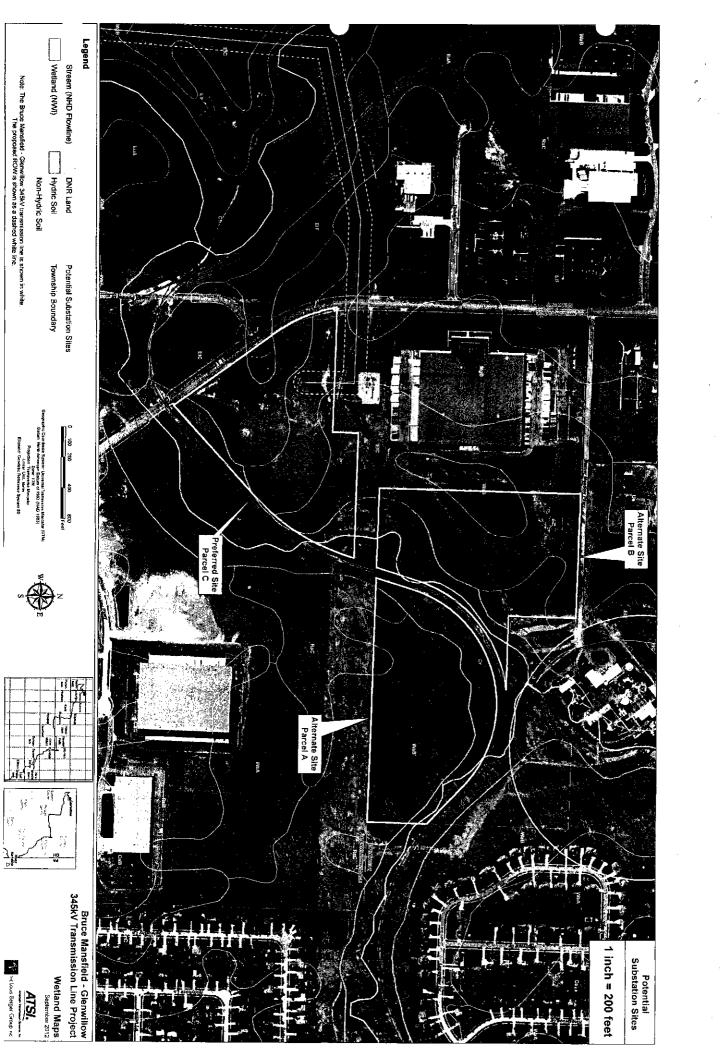
· .

ChieEPA Primary H	leadwater Habitat Evalua HHEI Score (s	tion Form um of metrics 1, 2, 3) :	
SITE NAME/LOCATION	UNI 70-TIMENS CI	<u> </u>	
SITE NUMBER	RIVER BASIN TINKER'S CO	CL DRAINAGE AREA (mir) 6,6003	
	AT. 41,367LONG. 81,4587 GIVER	CODERIVER MILE	
77.	COMMENTS COMMENTS		
NOTE: Complete All Items On This Form	- Refer to "Field Evaluation Manual for Ol	hio's PHWH Streams" for Instructions	
STREAM CHANNEL TO NONE / NATI	DRACCHANNEL TRECOVERED TRECOV	PERING TRECENT OR NO RECOVERY	
MODIFICATIONS:	AND COLORS		
1. SUBSTRATE (Estimate percent of ever	y type of substrate present. Check CNLY two pro	erforminant substrate TYPE hoves	
. ,	nt substrate types found (Max of 8). Final metric so	ore is sum of boxes A & B.	
TYPE PE	RCENT TYPE	PERCENT Metric Points	
☐ ☐ BOULDER (>256 mm) [18 pts]	LEAF PACKWOODY D	Substrate	
☐ ☐ BEDROCK [16 pt] ☐ ☐ COBBLE (65-256 mm) [12 pts]		Max = 40	
☐	MUCK [0 pts]		
☐	O ARTIFICIAL [3 pis]		
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock	^(A) ক	(B) A + B	
SCORE OF TWO MOST PREDOMINATE SUBST	RATE TYPES: TOTAL NUMBER	OF SUBSTRATE TYPES:	
Maximum Pool Depth (Measure the ma.	ximum pool depth within the 61 meter (200 ft) s	valuation reach at the time of Pool Depth	
evaluation. Avoid plunge pools from road	culverts or storm water pipes) (Check ONLY on	e box): <u>Max = 30</u>	
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	ك ما كان كان كان كان كان كان كان كان كان كا		
25 pts] > 10 - 22.5 cm [25 pts]	NO WATER OR MOIS	T CHANNEL [0 pts]	
COMMENTS	MAXIMUM POC	L DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull			
□ > 4.0 m cters (> 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] ■ Max=30			
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	_	(5)	
COMMENTS	AVERAGE BAN	KFULL WIDTH (meters)	
		· · · · · · · · · · · · · · · · · · ·	
RIPARIAN ZONE AND FLOODPL	This information must also be completed AIN QUALITY ANOTE: River Left (L) and Ri	ght (R) as looking downstream ☆	
RIPARIAN WIDTH	FLOODPLAIN QUALITY		
ŁR (Per Bank) ☑ 175 Wide >10m	L R (Most Predominant per Bank) Mature Forest, Wetland	L R Conservation Tillage	
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old Field	Urban or Industrial	
☐ ☐ Narrow <5m	Residential, Park, New Field	Open Pasture, Row	
☐ None	☐ ☐ Fenced Pasture	Crop Mining or Construction	
COMMENTS		····	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):			
	By chamber, to make (appendix)		
SINUOSITY (Number of bends pe	r 61 m (200 ft) of channel) (Check ONLY one bo	x):	
☐ None 🎾	1.0 2.0	3.0	
STREAM GRADIENT ESTIMATE Flat (0.5 #/100 #) Flat to Moderate	Moderate (2 N/100 ft) Moderate to S	Severe (10 tu/tu/ti)	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - TYes 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
Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Cyahoga Township/City: Willowswere
MISCELLANEOUS
Base Flow Conditions? (Y/N): N Date of last precipitation: 1 Quantity:
Photograph Information: 1500 up Shaw
Elevated Turbidity? (Y/N): Canopy (% open): 5/6
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 (mol) 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) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Comments Regarding Biology
Community Nogaring Disorgy.
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
John John John John John John John John
The stand we stand we stand
June 20, 2008 Revision
Shortepheneseal Stream connecting TSDN (upslope) with CFCC (daysle

APPENDIX J MAPS OF NWI, NHD, AND NRCS FEATURES WITHIN THE PREFERRED AND ALTERNATE SITES





APPENDIX K MAPS OF DELINEATED FEATURES WITHIN THE PREFERRED AND ALTERNATE SITES



