Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:



Stream & Location:	STREAM E		Ruh		<i>RM</i> :		: 61 28	. — —
			orers Full N	lame & Affili	iation: BRND	FALKINBUR	6-44	46
River Code:		ORET #:	Lat./ (NAD 83	Long.:40.	1383 18	<u>3.67/472</u>	24 Coffice	verified ocation
BEST TYPES	POOL RIFFLE	type present OTHER TYPES I HARDPAN [4] DETRITUS [3] I MUCK [2]	POOL RIFFLE		IE [T] IS [0] SIL	QUAI	12[ A]E[1] C[0]	Substrate
	YPES: 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	iore [2] sludge from ss [0] + 0	ubstrates; ignor n point-sources	SANDSTO  STANDSTO  COALEIN	NE [0] DI BINE [0] BINE [0] BINE [0] BINE [0]	□EXTENS □ MODER SSENORMA □ NONEI	ATE [-1] E[0]	Maximum 20
2] INSTREAM COVER quality; 3-Highest quality ir diameter log that is stable,	R Indicate presence quality; 2-Modera moderate or great well developed roc (1) GETATION (1) DW.WATER) [1]	e 0 to 3: 0-Absent; ate amounts, but no er amounts (e.g., v	ery large bould water, or deep	ality or in small a ers in deep or fa , well-defined, fu OXBOWS BAC	amounts of higher ist water, large inctional pools.  KWATERS [1]  ROPHYTES [1]	ginal AMC st Check ONE (( EXTENSIM) MODERATI MEARLYIA	=>75%-[11 = 25-75%-[ <25%-[13] 3SENT≥<5%	
Comments	41+1	+3					Cover Maximum 20	9 25
☐ HIGH (4) ☐ ☐ ☐ ☐ ☐ ☐ MODERATE [3] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	ELOPMENT  KCELLENT [A]  COOD [5]  LIR [5]  COOR [1]	CHANNELIZ NONE (6)	ATION	STABIL HIGH 13 MODER MODER	ATE [2]		Channel Məximum 20	7
4] BANK EROSION A River right looking downstrear EROSION  NOME/LIMITE 31  MODERATE [2]  HEAVING SEVERE [4]  Comments	RIPARIA  RIP	N WIDTH	FLC R FOREST: SHRUB OF RESIDENT FENCED F	OOD PLAIN ( SWAMP [3] ROLD FIELD [2 IAL PARK NEV		CONSERVATION URBAN OR IN MINING / CONstate predominant / 100m riparian.	DUSTRIAL STRUCTIO	[0]
<b>★</b> 0.72≤in(41)	CHANN	EL WIDTH (Or 2 & average) RIEFLE-WIDTH [2] RIFFLE-WIDTH [1]	C I TORREN I VERY FA D FAST (1) I MODERA		oply OW [1] ERSTITIAL [-1] ERMITTENT [-2 DIES [1]	Secondar (circle one and c	Contact y Contac	ct
Indicate for function of riffle-obligate set in the second of the secon	Pecies: RUN DEF □MAXIMUM ≥ MAXIMUM ≤	Check C PTH RIFF 50cm [2] STAB 50cm [1] CM MOD	ONE (Or 2 & av LE / RUN S LE (e.g., Cobb STABLE (e.g.	erage). UBSTRATE (le: Boulden):[2]	RIFFLE / R	lation ☐NO UN EMBEDDI NONE [2] EOW [1] MODERATE [0] EXTENSIVE [4]	Riffle / [	
6] GRADIENT( DRAINAGE AREA (センフ3	☐ MODE	LOW LOW [2-4] RATIE [6-10] VERY HIGH [10-6		>=	.0 %GLII S %RIFF	. —	Gradient Maximum 10	2 44
FPA 4520							007 [	J. 00

7/5	M
Cabble ourtined to the mode Stromped Back water Stromped Back water to the mode of the mod	
mold with the state of the stat	may -
POOL: [] >100H2 [] >3ff FLOOD CONTROL   DRAINAGE ATMOSPHERE   DATA PAUCITY LEGALY INEE.	Stream Drawing:
SPRAY   SUNG-SUNG-BEDLOAD-STABLE   SPRAY   SUNG-SUNG-BEDLOAD-STABLE   SPRAY   SUNG-SEDION-SEDIMENT   SPRAY	CANOPY   CONCEPT   CONCE
B] AESTHETICS D] MAINTENANCE Circle some & COMMENT WINDES / INDUSTRY    MULISANCE ALGAE   MAINTENANCE   MAINTENANC	C   C   C   C   C   C   C   C   C   C
omment RE: Reach consistency/ is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.	A) SAMPLED REACH Check ALL that apply Check ALL that apply Telegraphy Telegra

≤ 1.0 m (≤ 3' 3") [5 pts]

Max=30

Primary Headwater Habitat Evaluation Form FUPDOI Stream F HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION Y/I A/ RIVER BASIN DRAINAGE AREA (mi2) LAT. 4008'56.62 LONG. 43034'10,47 RIVER CODE\_ LENGTH OF STREAM REACH (ft) 20021/09 SCORER SMIT NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions ☐ NONE / NATURAL CHANNEL : ☑ RECOVERED : ☐ RECOVERING : ☐ RECENT OR NO RECOVERY : STREAM CHANNEL MODIFICATIONS: SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT PERCENT **TYPE Points** BLDR SLABS [16 pts] SILT [3 pt] LEAF PACK/WOODY DEBRIS [3 pts] BOULDER (>256 mm) [16 pts] Substrate FINE DETRITUS [3 pts] BEDROCK [16 pt] Max = 40 CLAY or HARDPAN [0 pt] COBBLE (65-256 mm) [12 pts] MUCK [0 pts] GRAVEL (2-64 mm) [9 pts] ARTIFICIAL [3 pts] SAND (<2 mm) [6 pts] Total of Percentages of (B) A + B Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: Pool Depth Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] 亙 > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts] > 10 - 22.5 cm [25 pts] MAXIMUM POOL DEPTH (centimeters): COMMENTS (Check ONLY one box): Bankfuli BANK FULL WIDTH (Measured as the average of 3-4 measurements) > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width

AVERAGE BANKFULL WIDTH (meters) COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Per Bank) (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Wide >10m Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Open Pasture, Row Narrow <5m Residential, Park, New Field Сгор Mining or Construction Fenced Pasture None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): 2.0 3.0 0.5 2.5 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft) Flat to Moderate

> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]

> 1.5 m - 3.0 m (> 9"7" - 4"8") [20 pts]

	<u>):</u>
QHEI PERFORMED? - Yes No QHEI Score(If Yes,	Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WHIND WINDER WORLD	
<del>and</del>	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSH  VA Military District LOT 5468  USGS Quadrangle Name:NRCS Soil Ma	
county: Champaian Township/City: U	nion Twp
MISCELLANEOUS	
Photograph Information: EVPOBI. 300. 0006 photo P	Quantity: 4
Photograph Information: EVPOBI. 300, 0006 photo F	5 19 = ZO
Elevated Turbidity? (Y/N): Canopy (% open)://)	
Nere samples collected for water chemistry? (Y/N): (Note lab sample no. or	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.	
s the sampling reach representative of the stream (Y/N) V If not, please explain:	
/	
	onal. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the sign of the state of the	, "
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREA	M REACH (This <u>must</u> be completed):
DRAWING AND NARRATIVE DESCRIPTION OF STREA	
Include important landmarks and other features of interest for site evaluation	
Include important landmarks and other features of interest for site evaluation	
Include important landmarks and other features of interest for site evaluation	
Include important landmarks and other features of interest for site evaluation See photos	
Include important landmarks and other features of interest for site evaluation See photos  (photo)  (photo)  (photo)	n and a narrative description of the stream's location
Include important landmarks and other features of interest for site evaluation	n and a narrative description of the stream's location
Include important landmarks and other features of interest for site evaluation See photos  (abble)  FLOW	n and a narrative description of the stream's location
Include important landmarks and other features of interest for site evaluation See photos  (abble)  FLOW	n and a narrative description of the stream's location

Stream [

### 3. Macroinvertebrate Scoring Sheet:

THE HEADWATER MACROINVERTEBRATE FIELD EVALUATION INDEX (HMFEI) SCORING SHEET

Indicate Abundance of Each Taxa Above each White Box. Record HMFEI Scoring Value Points Within each Box. For EPT taxa, also indicate the number of different taxa present

Key: V = Very Abundar	it $(>50)$ ; A = Abundant (	10 -50); <b>C</b> =	= Common ( 3 -9); R =	Rare (<3)
Sessile Animals (Porifera, Cnidaria, Bryozoa) (HMFEI pts = 1)	Crayfish (Decapoda) (HMFEI pts = 2)	R	Fishfly Larvae (Corydalidae) (HMFEl pts = 3)	
Aquatic Worms (Turbellaria, Oligochaeta, Hirudinea) (HMFEI pts = 1)	Dragonfly Nymphs (Anisoptera) (HMFEI pts = 2)		Water Penny Beetles (Psephenidae) (HMFEI pts = 3)	
Sow Bugs (Isopoda) (HMFEI pts = 1)	Riffle Beetles (Dryopidae, Elimidae, Ptilodactylidae) (HMFEI pts = 2)		Cranefly Larvae (Tipulidae) (HMFEI pts = 3)	
Scuds (Amphipoda) (HMFEI pts = 1)	Larvae of other Flies (Diptera) Name: (HMFEl pts = 1)	<u> </u>	EP <b>X</b> TAXA  Total No. EPT Taxa	
Water Mites (Hydracarina) - (HMFEI pts = I)	Midges (Chironomids) (HMFEI pts = 1)	Á	Mayfly Nymphs (Ephemeroptera)	<u>C</u>
Damselfly Nymphs (Zygoptera) (HMFEI pts = 1)	Snails (Gastropoda) (HMFEI pts = 1)	<u> </u>	Texa Present [HMFE1 pts = No: Taxa (x) 3]	Z 6
Alderfly Larvae (Sjalidae) (HMFEI pts = 1)	Clams (Bivalvia) (HMFEI pts = 1)		Stonefly Nymphs (Plecoptera)	
Other Beetles (Coleoptera) (HMFEI pts = 1)	Other Texa :		Taxa Present [HMFEI pts = No: Taxa (x) 3]	
Other Taxa:	Other Taxa:		Caddisfly Larvae (Trichoptera)	<del></del> .
Other Taxe:	Other Taxa:		Taxa Present	
Other Taxa:	Other Taxa		[HMFEI pis = No. Texa (x) 3]	3
Voucher Sample ID Seech 16 Notes on Macroinvertebrates: (Predomin	,	ne Spent (minute ganisms; Divers		
Final HM	FEI Calculated Score (	Sum of All	White Box Scores) =	: 14

IF Final HMFEI Score is  $\geq 20$  , Then CLASS III PHWH STREAM IF Final HMFEI Score is 7 to 19 , Then CLASS II PHWH STREAM Then Class PHWH STREAM

### EVPOOL Stream F sheet 16

### PHWH STREAM BIOLOGICAL CHARACTERISTICS FIELD SHEET:

1. Fish:	Voucher Speci Sample Method	mens Retained? (circle)Stream	Y / N Time Spent (mim Length Assessed (meters)	
Species		Number Caught	Notes	
	ì	$\wedge$		
	N			
	17	1		

2. Salamanders: Voucher Specimens Retained? (circle) Y/N Time Spent (minutes): 30
Sample Method VES Stream Length Assessed (meters) 61 200 ft)

Species (Genus)	# Larvae	#Juveniles/Adults	Total Number
Mountain Dusky (Desmognathus ochrophaeus)			Ø
Northern Dusky (Desmognathus fuscus)			Ø
Two-lined (Eurycea bislineata)			Ø
Long-tailed (Eurycea longicauda)			Ø
Cave (Eurycea lucifuga)			Ø
Red (Pseudotriton ruber)	,		Ø
Mud (Pseudotriton montanus)			Ø
Spring (Gyrinophilus porphyriticus)			Ø
Mole spp. (Ambystoma spp.)			
Four-toed (Hemidaciylium scutatum)			Ø
Other (name)			$\varphi$
Total			

Notes on Vertebrates: NO Vertebrates Were observed at 4ni3 sample reach

### Stream J

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

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SITE NAME/LOCATION F VP 30 /	- Thees 9 - 11.	ne1-1		
SITE NUMBER_	RIVER BASIN		DRAINAGE AREA (mi²)/	1,05
LENGTH OF STREAM REACH (ft)	_LATLONG.		ODERIVER MILE _	
DATE 11/19/08 SCORER 16. C				····
NOTE: Complete All Items On This For	m - Refer to "Field Evalu	ation Manual for Ohio	o's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NA MODIFICATIONS:	ATURAL CHANNEL D REC		RING TRECENT OR NO REC	OVER <b>Y</b>
SUBSTRATE (Estimate percent of ev (Max of 32). Add total number of significant.	ery type of substrate presen	it. Check ONLY two predo	ominant substrate TYPE boxes	HHE
•	PERCENT TYPE	ax or o). Final metric score	PERCENT	Metric
☐ ☐ BLDR SLABS [16 pts] ☐ ☐ BOULDER (>256 mm) [16 pts]		SILT <b>[3 pt]</b> EAF PACK/WOODY DEB	20 RIS (3 ots)	Points
BEDROCK [16 pt]		INE DETRITUS [3 pts]		Substrate Max = 40
COBBLE (65-256 mm) [12 pts]		CLAY or HARDPAN [0 pt	·	I III A
☐ ☐ GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]		MUCK [0 pts] ARTIFICIAL [3 pts]		11/z
Total of Percentages of	(A)	T PARAGRAMANA PARAMANANA	(B)	A+B
Bldr Slabs, Boulder, Cobble, Bedrock_	9		3	^+
SCORE OF TWO MOST PREDOMINATE SUB-			SUBSTRATE TYPES:	
<ol> <li>Maximum Pool Depth (Measure the revaluation. Avoid plunge pools from row)</li> </ol>	naximum pool depth within	the 61 meter (200 ft) evalues) (Check ONLY one b		Pool Depth Max = 30
> 30 centimeters [20 pts]	wii walio 😃 :	> 5 cm - 10 cm [15 pts]		
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]		< 5 cm [5 pts] NO WATER OR MOIST (	CHANNEL [0 pts]	
COMMENTS			DEPTH (centimeters):	
				Bankfull
3. BANK FULL WIDTH (Measured as th		> 1.0 m 1.5 m (> 3' 3" - 4		Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4'8") [20 pts]		≤ 1.0 m (≤ 3' 3") [5 pts]	<b>-1</b>	Max=30
• , ,,, , .,		AN COR DANIES	Z	120
COMMENTS		AVERAGE BANK	FULL WIDTH (meters)	
			Company of the compan	
	This information mus	st also be completed		
RIPARIAN ZONE AND FLOOD		E: River Left (L) and Righ	t (R) as looking downstream☆	
RIPARIAN WIDTH	DPLAIN QUALITY ☆NOT FLOODPLAIN QUALITY L R (Most Predomi	E: River Left (L) and Rightinant per Bank)	L R	
	DPLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi  ☐ ☐ Mature Forest,	E: River Left (L) and Rightinant per Bank) Wetland	L R Conservation Tiliage	
RIPARIAN WIDTH L R (Per Bank)	DPLAIN QUALITY ☆NOT FLOODPLAIN QUALITY L R (Most Predomi ☐ ☐ Mature Forest,	E: River Left (L) and Rightinant per Bank) Wetland	L R Conservation Tillage Urban or Industrial	
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m	DPLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi  ☐ ☐ Mature Forest,  Immature Fore	E: River Left (L) and Righ inant per Bank) Wetland [ sst, Shrub or Old	L R Conservation Tillage Urban or Industrial Open Pasture, Row	
RIPARIAN WIDTH   L R	PLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi	E: River Left (L) and Rightinant per Bank) Wetland (st, Shrub or Old (ark, New Field	Conservation Tillage Urban or Industrial	
RIPARIAN WIDTH  L R (Per Bank)  ☐ Wide >10m  ☐ Moderate 5-10m  Narrow <5m	PLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi  ☐ ☐ Mature Forest, Immature Fore Field  ☐ ☐ Residential, Pa	E: River Left (L) and Rightinant per Bank) Wetland (st, Shrub or Old (ark, New Field	Conservation Tillage Urban or Industrial Open Pasture, Row Crop	
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Ev	PLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi	E: River Left (L) and Right inant per Bank) Wetland [ st, Shrub or Old [ ark, New Field [ e [ box):	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	_
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  COMMENTS	PLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi	E: River Left (L) and Right inant per Bank) Wetland [ st, Shrub or Old [ ark, New Field [ box): Moist Channel, is	Conservation Tillage Urban or Industrial Open Pasture, Row Crop	-
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Ev Stream Flowing Subsurface flow with isolated po	PLAIN QUALITY ☆NOT  FLOODPLAIN QUALITY  L R (Most Predomi	E: River Left (L) and Right inant per Bank) Wetland Inst, Shrub or Old Inst, New Field Inst.  Discount in the control of the c	Conservation Tiliage Urban or Industrial Open Pasture, Row Crop Mining or Construction  clated pools, no flow (Intermittent water (Ephemeral)	-
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Ev Stream Flowing Subsurface flow with isolated po COMMENTS  SINUOSITY (Number of bends None	PLAIN QUALITY \$\triangle NOT \\ FLOODPLAIN QUALITY \triangle NOT \\ FLOODPLAIN QUALITY \triangle NOT \\ Color   R	E: River Left (L) and Right inant per Bank) Wetland [ st, Shrub or Old  ark, New Field  box):  Moist Channel, is Dry channel, no wetler (Check ONLY one box):  (Check ONLY one box):	Conservation Tiliage Urban or Industrial Open Pasture, Row Crop Mining or Construction  clated pools, no flow (Intermittent water (Ephemeral)	_
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  COMMENTS  FLOW REGIME (At Time of Events of Subsurface flow with isolated procomments)  SINUOSITY (Number of bends None  0.5	PLAIN QUALITY \$\trianslambda NOT \\ \trianslambda FLOODPLAIN QUALITY \\ \trianslambda Not Predomi \\ \trianslambda Mature Forest, \\ \trianslambda Fenced Pastur \\ \trianslambda Pacced Pastur \\ \trianslambda All (Check ONLY one \\ \trianslambda Onle (Interstitial) \\ \trianslambda Pacced (Check ONLY one \\ \trianslambda Pacced (Check ONLY	E: River Left (L) and Right inant per Bank) Wetland Inst., Shrub or Old Inst., Shrub or Old Inst., New Field Inst., New Field Inst., New Field Inst.,	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction  clated pools, no flow (Intermittent water (Ephemeral)	_
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None COMMENTS  FLOW REGIME (At Time of Ev Stream Flowing Subsurface flow with isolated po COMMENTS  SINUOSITY (Number of bends None	PLAIN QUALITY \$\triangle NOT \\ FLOODPLAIN QUALITY \triangle NOT \\ FLOODPLAIN QUALITY \triangle NOT \\ Color   R	E: River Left (L) and Right inant per Bank) Wetland [ st, Shrub or Old  ark, New Field  box):  Moist Channel, is Dry channel, no wetler (Check ONLY one box):  (Check ONLY one box):	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction  clated pools, no flow (Intermittent water (Ephemeral)	_ ) _

PHWH Form Page - 1

ADDITIONAL STREAM INFORMATION (This Information Must Also be	Completed):
QHEI PERFORMED? - 🗍 Yes 🂢 No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	· ·
WWH Name:	
CWH Name:	
☐ EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE	WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:NF	RCS Soil Map Page: NRCS Soil Map Stream Order
County: Champaly Township	/ City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 95	_
Were samples collected for water chemistry? (Y/N): (Note lab samples collected for water chemistry?	
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, plea	se explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
• •	lections optional. NOTE: all voucher samples must be labeled with the site sets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic M	ved? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	,
No Wall / HMFEI not	- Dertorned
DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for site	
<b>A</b> .	
FLOW > Servellens	in culvert
FLOW - Den Signatures	
Navan	by Service of the Ser
1 / A-3	

WWH

STREAM J+2

OninEPA
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Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: [72]



Stream & Location:	UT :	W DUGAN	RUN		RM:		10/11/11	
		Sa	orers Full N	lame & Affiliation:_	B.FAL	KINBU	RG - 144	<b>L</b> L
River Code:	<del></del>	_STORET#:	Lat./ 	Long:40.129	97183.	65464	Office verified location	]
1] SUBSTRATE Check	ONLY Two st	every type present		Check Ol	NE (Or 2 & a	verage)		
DECT TYPES	OOL RIFFLE	OTUED TYPES	POOL RIFFLE	ORIGIN		QUAL		
BIDR/SLABSITOT	45 45 5	U HARDPAN (4) DETRITUS (3) D MUCK (2) D SILL (2) D ARTHEIGIAL (0) (Score natural s	VI.	TILS[4]	SILT	HEACH MODERA MOD	Substra	
Comments		orless [0]		DSHAEELE 1		□ NONE [1]		
8+7+2+	1+0	+0 = 19		□ GOAL FINES [2]				
2] INSTREAM COVE	Indicate pre	sence 0 to 3: 0-Absent;	1-Very small am	ounts or if more common	of marginal	AMOU	JNT	
quality; 3-Highest quality in diameter log that is stable,  ———————————————————————————————————	quality; 2-M moderate or well develope 1112 GETATION [1] WWATER)	oderate amounts, but no greater amounts (e.g., v d rootwad in deep / fast	of highest qua ery large boulde water, or deep,	lity or in small amounts o ers in deep or fast water. I	in highest Clarge Cools.	heck ONE (O/ EXTENSIVE MODERATE SPARSES NEARLY/ABS	r 2 & average) 27576 [10] F.B. 257576 [71] F.B. 2576 [3] B.B. 3ENT < 5% [1]	
Comments 1 + 2	+ 1 +	1 +1 +7	= 14			ħ	Cover Aaximum 20	33
3] CHANNEL MORPH	OLOGY Cha	eck ONE in each catego	ry (Or 2 & avera	nge)	· <u>·</u>	<del></del>		,
SINUOSITY DEVI	ELOPMEN GEILENTIG JOD [3] IR GI	T CHANNELIZ	ATION J	STABILITY  HIGH (3)  MODERATE (2)  HEOW (1)			Channel faximum 20	50
4] BANK EROSION A		AN ZONE Check ON		ory for EACH BANK (Or 2		average)		
EROSION    NONE/Unites   State	R WIDE	250m[4]	FOREST SI FOREST SI SHRUB OR RESIDENTI GENCED PA	WAME DIE DE ELDE GUDGIEL DERDE ALE PARKENEW EIELDE		edominant lan	JSTRIAL [0] RUCTION [0]	; V
Comments 2+	3 +	(2/2)=D	=6	The State of Description in New		•	aximum 10	56
5] POOL/GLIDE AND MAXIMUM DEPTH		RUN QUALITY NNEL WIDTH	CUR	RENT VELOCITY	F	Recreation I	Potential	
<b>3</b> 07-31-14	POOLWID	NE (Or 2 & average) HC≳RIFFLE WIDTH [2] HE RIFFLE WIDTH [1] H≤RIFFLE WIDTH [0]	□ TORRENT □ VERY FAS □ EAST-R)	eck ALL that apply  AEE' PSLOW INTERSTITA  TO INTERMISE  BITE DEDDIES 1119	NI [2]	Primary C Secondary	Contact	
Comments 4 +	2 +	- <i>1.</i> = 7		or reach - pools and riffle:			Current eximum	63
Indicate for function			be large end NE (Or 2 & aver		populatio	n ∐NORII	FFLE [metric=0]	
RIFFLE DEPTH  BESTAREAS ACCOM [2]  BESTAREAS ACCOM [1]  BESTAREAS ACCOM [1]  BESTAREAS ACCOM [2]  Comments	RUN I	M > 50cm (2) ■ STABI M < 50cm (1) □ MOD.	TABLE (e.g., l	Boulder) [2]	L NON	MBEDDED TZI TZI TZI TZI TZI TZI TZI TZI TZI TZI	Riffle /	68
6] GRADIENT (6) DRAINAGE AREA (0.65	□MC	RY-LOW-LOW-[2-4] DERATE [6:10] SH-VERY-HIGH [10:6]	(7)	· >===	GLIDE:(	≕≕	radient	Ta
EPA 4520			·				06/16/06	

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

A] SAMPLED REACH

### **ChieFA**

### Primary Headwater Habitat Evaluation Form

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

10	_				10/16	_
и	•		7			
н	1	′′	_			
п	1	£.	7	•		
81	7	4	•			
п					•	

SITE NAME/LOCATION STREAM K	C/L CRANE PATH - UT	Dugan Rom
UT Duan Run . SITE NUMBER	. RIVER BASIN	DRAINAGE AREA (mi²) D.24
LENGTH OF STREAM REACH (ft)	LAT. 40.1279 LONG. 83.67 48	RIVER CODE RIVER MILE
DATE 6/28/201) SCORER B.FALKIN		
NOTE: Complete All Items On This For	m - Refer to "Field Evaluation Manua	al for Ohio's PHWH Streams" for Instructions
STREAMICHANNELS AND LINOUE INC.	TURALCHANNEL E RECOVERED &	RECOVERING ED REGENT OR NO RECOVERY
MODIFICATIONS! SAFE AT LEVEL		
THE LAND AND ADDRESS OF THE PARTY OF THE PAR		THE THE RESERVE WHEN THE PROPERTY DON'T AND THE PROPERTY OF TH
SUBSTRATE (Estimate percent of every of 32). Add total number of significations.	ery type of substrate present. Check ONL' cant substrate types found (Max of 8). Final r	Y two predominant substrate TYPE boxes netric score is sum of boxes A & B.
TYPE F	PERCENT TYPE	PERCENT Metric
		Points
O D REDROCK HE DIS		S [3 pts] Substrate
		PANELUED LIEUTE PANELUE 100
Total of Percentages of	Management and the second seco	
Bidr Slabs, Boulder, Cobble, Bedrock	01.	MBER OF SUBSTRATE TYPES:
SCORE OF TWO MOST PREDOMINATE SUBS		
Maximum Pool Depth (Measure the m  evaluation, Avoid plunge pools from road	aximum pool depth within the 61 meter (2 d culverts or storm water pipes) (Check O	VLY one box): May = 30
		TIS DIST
O 2265 30 cm 190 ps 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	S on io pient	MOIST CHANNEL TO BEST TO THE
COMMENTS Dry-vegeto	ated Channel MAXIMUI	M POOL DEPTH (centimeters):
3. BANK FULL WIDTH (Measured as the		(333) 2387 (15pts) Width
(240) (30 (30 (30 (30 (30 (30 (30 (30 (30 (30		与ptell: Max=30
	AVEDAG	E BANKFULL WIDTH (meters)
COMMENTS	AVERAGI	E DANKI OLE WIDTH (Meters)
	This information <u>must</u> also be comp	
RIPARIAN ZONE AND FLOODPI RIPARIAN WIDTH	LAIN QUALITY ☆NOTE: River Left (L) a FLOODPLAIN QUALITY	and Right (R) as looking downstream 🌣 🐪
L R (Per Bank)	L R (Most Predominant per Bank)	L R
☐ ☐ Wide >10m	Mature Forest, Wetland Immature Forest, Shrub or Old	Conservation Tillage
☐ ☐ Moderate 5-10m	Field	Urban or Industrial
Narrow <5m	Residential, Park, New Field	Open-Rasture (Row)
None COMMENTS	☐ ☐ Fenced Pasture	Mining or Construction
	(Carlo College	
FLOW REGIME (At Time of Evalu	☐ Moist Cha	annel, isolated pools, no flow (Intermittent)
Subsurface flow with Isolated pools	(Interstitial) 💆 Dry chann	nel, no water (Ephemeral)
COMMENTS		
SINUOSITY (Number of bends pe	r 61 m (200 ft) of channel) (Check ONLY or 1.0	ne box):
0.5	1.5 🗍 2.5	☐ >3
STREAM GRADIENT ESTIMATE	<b>.</b>	<b>a</b>
Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft) ☐ Moderat	

•:

QHEI PEF	FORMED? - 🗍 Yes 🕏 No C	QHEI Score(If	Yes, Altach Com	oleted QHEI Form)	
DOWNST	REAM DESIGNATED USE(S)			_	1001
WWH Name:	ongan Run		Dista	nce from Evaluated St	ream. 1.069 m
J CWH Name: J EWH Name:	- Maria and Maria and Maria				
	•				
	ATTACH COPIES OF MAPS, INC	<del></del>		1.	
JSGS Quadrangle N	ame: Kings Cree	K NRCS S	oil Map Page:_ <i></i>	NRCS Soll Map	Stream Order 2
Cham	paign	Townshin / City	union /	urbana	
ounty.	1 3	rownship? ony.	/		
MISCELLA		,	•		
ase Flow Conditions	? (Y/N): Date of last p	recipitation: N/   WK	Qua	ntity:	
hotograph Informati	on: <u>Yes</u>	•			•
	/N): Canopy (%	100 /			
evated Turbidity? (\	/N): Canopy (%	open):/v - /			
ere samples collect	ed for water chemistry? (Y/N):	(Note lab sample no	, or id. and attach	results) Lab Number:_	
eld Measures: T	emp (°C) Dissolved Oxy	gen (mg/l) pH (	S.U.) C	onductivity (µmhos/cm	)
	•				
tne sampling reach	representative of the stream (Y/I	II not, please exp	idirti	<del> </del>	
	(If Yes, Record all observable ID number. Include appr	ations. Voucher collections opriate field data sheets from	the Primary Head	vater Habitat Assessme	be labeled with the s nt Manual)
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Obs	(If Yes, Record all observable ID number. Include appr	opriate field data sheets from Salamanders Observed? (Y /N) Aquatic Macroinve	the Primary Heads //N) Voucherlebrates Observe	vater Habitat Assessme er? (Y/N) <u>V</u> d? (Y/N) <u>V</u> Vouche	nt Manual) er? (Y/N) <u>V</u>
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Obs	(If Yes, Record all observed in Dougher? (Y/N) Voucher? (Y/N)	opriate field data sheets from Salamanders Observed? (Y /N) Aquatic Macroinve	the Primary Heads //N) Voucherlebrates Observe	vater Habitat Assessme er? (Y/N) <u>V</u> d? (Y/N) <u>V</u> Vouche	nt Manual) er? (Y/N) <u>V</u>
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Obs	(If Yes, Record all observed in Dougher? (Y/N) Voucher? (Y/N)	opriate field data sheets from Salamanders Observed? (Y /N) Aquatic Macroinve	the Primary Heads //N) Voucherlebrates Observe	vater Habitat Assessme er? (Y/N) <u>V</u> d? (Y/N) <u>V</u> Vouche	nt Manual) er? (Y/N) <u>V</u>
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Obs	(If Yes, Record all observed in Dougher? (Y/N) Voucher? (Y/N)	opriate field data sheets from Salamanders Observed? (Y /N) Aquatic Macroinve	the Primary Heads //N) Voucherlebrates Observe	vater Habitat Assessme er? (Y/N) <u>V</u> d? (Y/N) <u>V</u> Vouche	nt Manual) er? (Y/N) <u>V</u>
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Obser mments Regarding	(If Yes, Record all observed in Dougher? (Y/N) Voucher? (Y/N)	opriate field data sheets from Salamanders Observed? (YN)ハ Aquatic Macroinve	the Primary Heads (N) Vouchertebrates Observe	vater Habitat Assessme er? (Y/N) d? (Y/N) Vouche	nt Manual) er? (Y/N) V
rformed? (Y/N): h Observed? (Y/N)_ gs or Tadpoles Observents Regarding	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) YOU	opriate field data sheets from Salamanders Observed? (Y (N) Aquatic Macroinve	the Primary Heads (N) Vouchertebrates Observe	valer Habitat Assessment Programme (Y/N) Vouched (Y/N) Vou	er? (Y/N) V
rformed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) YOU	opriate field data sheets from Salamanders Observed? (Y (N) Aquatic Macroinve	The Primary Heads (N) Voucherlebrates Observe  EAM REACH (**  Tion and a narrath	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) YOU	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) YOU	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
in Observed? (Y/N):  in Observed? (Y/N) gs or Tadpoles Observents Regarding  DRAWII  Include importate	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	valer Habitat Assessment Programme (Y/N) Vouched (Y/N) Vou	nt Manual) er? (Y/N)  ppleted): tream's location
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
proformed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y (N) Aquatic Macroinve	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
proformed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
priormed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y N)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location
promed? (Y/N):	(If Yes, Record all observed of the ID number. Include approved of the ID number. Include approved of the ID number? (Y/N) Youcher? (Y/N) You	opriate field data sheets from Salamanders Observed? (Y (N) \( \text{N} \) Aquatic Macroinve  SCRIPTION OF STRE s of interest for site evalua  \( \text{CORN} \)  Yew for \( \text{Vew} \)	Voucherlebrates Observe	rater Habitat Assessment of the security of th	nt Manual) er? (Y/N)  ppleted): tream's location

October 24, 2002 Revision

Stream L

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

11/0
$\mathcal{A}^{\mathcal{G}}$

SITE NAME/LOCATION EVENDOL ST	1Prt 110 - 14480	/I	Render	
SITE NUMBER	RIVER BASIN		PRAINAGE AREA (mi²)/,	.95
LENGTH OF STREAM REACH (ft) 200	LAT. LONG.	RIVER CODE	RIVER MILE	
DATE 11 19 18 SCORER SMH 1				
NOTE: Complete All Items On This For	m - Refer to "Field Evaluation	Manual for Ohio's Ph	IWH Streams" for Instru	ctions
STREAM CHANNEL NONE / NA MODIFICATIONS:	TURAL CHANNEL TRECOVER	RED TRECOVERING	☐ RECENT OR NO RECO	VERY
SUBSTRATE (Estimate percent of every	ery type of substrate present. Che	eck ONLY two predominar	t substrate TYPE boxes	HHEI
(Max of 32). Add total number of signific	PERCENT TYPE		PERCENT	Metric
BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts]		3 pt] PACK/WOODY DEBRIS [3	ntel	Points
BEDROCK [16 pt]	30, 65065 5648	DETRITUS [3 pts]		Substrate Max = 40
COBBLE (65-256 mm) [12 pts] _	<b>A</b> - W - W - W - W - W - W - W - W - W -	or HARDPAN [0 pt]		Max - 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] _ ☑ ☐ SAND (<2 mm) [6 pts] _	11.2 — WWW 13	[0 pts]  CIAL [3 pts]		2
Total of Percentages of	209- W	Jan Jan T. W. T. S. San Jan Jan Jan Jan Jan Jan Jan Jan Jan J	(B) [ ]	P5-25-0
Bldr Slabs, Boulder, Cobble, Bedrock				A+B
SCORE OF TWO MOST PREDOMINATE SUBS	TRATE TYPES: TO	OTAL NUMBER OF SUBS	TRATE TYPES:	
<ol> <li>Maximum Pool Depth (Measure the measure t</li></ol>	naximum pool depth within the 61	meter (200 ft) evaluation	reach at the time of	Pool Depti Max = 30
evaluation. Avoid plurige pools from roa  > 30 centimeters [20 pts]	>5 cı	m - 10 cm [15 pts]		Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	□ < 5 ci	m <b>[5 pts]</b> VATER OR MOIST CHANI	NEL 10 of st	0
N 171 mal	deoiths estimated			
		MAXIMUM POOL DEPTI	(centimeters):	
3. BANK FULL WIDTH (Measured as the	e average of 3-4 measurements)	(Check <i>ONLY</i> on m = 1.5 m (> 3' 3" - 4' 8") [1		Bankfull Width
> 4.0 meters (> 13') [30 pts] > 3.0 m = 4.0 m (> 9' 7" - 13') [25 pts]		m (≤ 3' 3") [5 pts]		Max=30
> 1.5 m = 3.0 m (> 9 7" 4' 8") [20 pts]			3,5	25
COMMENTS		AVERAGE BANKFULL V	VIDTH (meters)	
	This information must also	o be completed		
RIPARIAN ZONE AND FLOOD	PLAIN QUALITY ☆NOTE: Riv FLOODPLAIN QUALITY	er Left (L) and Right (R) a	s looking downstream ঐ	
RIPARIAN WIDTH  L, R (Per Bank)	L R (Most Predominant p			
₩ide >10m	Mature Forest, Wetla	1 014	Conservation Tillage	
☐ ☐ Moderate 5-10m	Field Field	unp ot Old 🔲 🖸	Urban or Industrial	
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, Ne	ew Field	Open Pasture, Row Crop	
□ □ None	☐ ☐ Fenced Pasture		Mining or Construction	
COMMENTS				
FLOW REGIME (At Time of Eva  Stream Flowing	aluation) (Check ONLY one box):	- Moist Channel isolated	pools, no flow (Intermittent)	
Subsurface flow with isolated poor	ols (Interstitial)	Dry channel, no water (		
COMMENTS				
	per 61 m (200 ft) of channel) (Che		□ 3.0	
U None □ 0.5	1.0	2.0 2.5	☐ >3 ☐ >3	
STREAM GRADIENT ESTIMATE	. /			
Flat (0.5 ft/100 ft)  Flat to Moderate	Moderate (2 ft/100 ft)	☐ Moderate to Severe	Severe (10 ft/10)	
		0.1		

PHWH Form Page - 1

Class II intermittent

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)  Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
☐ EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Champald N Township / City:
BRICOTI I ANTOLIO
Base Flow Conditions? (Y/N): Date of last precipitation: 11 / B 09 Quantity: 4/
Photograph Information: 11 t
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
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: -STROM and it time at evaluation
-571cani ara yi irra za cvilitarirezi
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
row crops
Lited channet
FLOW - regetated butter
row crops  regetated channel  regetated channel  Namow buffer  row 0,0005

PHWH Form Page - 2

st photo

STREAML

### **OhioEPA**

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

_		6-16
QHEI	Score:	51.5

Difeam & Location.	Little Darby Creek -	-DRY CH	FANNEL	_ RM:	Date: 61 301 11	
			Name & Affiliation:			
River Code:	STORET#:_		t./ Long.: 40. 098	<u> 183.</u>	5915 Office verified location	
1] SUBSTRATE Chec	k ONLYTwo substrate TYPE BOX ate % or note every type present		Check (	ONE (Or 2 & a	average)	•
. BEST TYPES	POOL RIFFLE OTHER TY	PES POOL RIFF	LE ORIGIN		QUALITY	
BLDR/SLABS(10)		N.141			☐HEAVY LZ]	
□ □ COBBLE (8)			UVETLANDS [0]	SILT	Z NORMAL IO	
GRAVEDITI			☐ ☐ HARDPAN [0] ☐ SANDSTONE [0]	anne.	- FREE (1) EXTENSIVE (2)	
BEDROCK [5]	(Score na	itural substrates: ior	or URIP/RAP [0]	A CONE	☐ MODERATE [1] Maximum	
NUMBER OF BEST	TYPES:   ## or more [2] slude  ## or more [2] slude	ge from point-sourc	es) □ LACUSTURINE [0 □ SHALE [1]		□ EXTENSIVE [2] □ MODERATE [1] □ NONE [1] □ NONE [1]	•
Comments 7 L			□ ÇÖAL FINES [-2]		A CONTRACTOR OF THE PROPERTY O	
07 W0777544 001/5	R Indicate presence 0 to 3: 0-Al	oont 1 Very small	amounte or if more commo	on of marginal	AROUNT	
-	quality; 2-Moderate amounts,	but not or nignest	juality or in small amounts	ornignest	AMOUNT Check ONE (Or 2 & average)	
diameter log that is stable	n moderate or greater amounts ( , well developed rootwad in deep	/ fast water, or de	ep, well-defined, functional	pools.	EXTENSIVE \$75% [11]	
UNDERCUT BANK		> 70cm [2] VADS [1] >	_ OXBOWS, BACKWATE _ AQUATIC MACROPHY	RSM Z	LMODERATE 25-75% [7] SPARSE 5-25% [3]	
SHALLOWS (IN ST		ERSIII	LOGS OR WOODY DE		NEARLY ABSENT <5% [1]	
ROOTMATS 11					Cover	
Comments	+1-1 +1+	7 ·			Maximum 20 2128	8
31 CHANNEL MORPE	HOLOGY Check ONE in each	ategory (Or 2 & a	verage)		· · · · ·	
SINUOSITY DEV	ELOPMENT CHANN	ELIZATION	STABILITY			
	XCELLENT [7]   NONE [6]		□ HIGH [3] 記述 ② MODERATE [2]	:		
	AIR 3		Cowin			
	OOR (1) RECENT	OR:NO RECOVER	<b>X</b> [i]		Channel JU u	1-
Comments ろ	+5 +4 +	2			20	12
4] BANK EROSION	AND RIPARIAN ZONE Che	ock ONE in each ca	languager EACH PANK (C	and nor bank 9	? average)	
	HAT I'M AN THE THE OW				x average)	
River right looking downstre	III R RIPARIAN WIDTH	, P Fi	OOD PLAIN QUALI	TY LR		
, R EROSION	RIPARIAN WIDTH	FI R B D FORES	OOD PLAIN QUALI	TY BE L DEC	onservation tillage hi	
EROSION  MODERATE [2]	RIPARIAN WIDTH    WIDE > 50m [4]     WIDE > 50m [4]     WIDE > 50m [4]     WIDE > 50m [2]	FI P P FORES P P SHRUB D RESIDE	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] STIAL PARK NEW FIELD			
EROSION  MODERATE [2]	RIPARIAN WIDTH   WIDE > 50m; [4]:   22 27 MODERALE 10-50m; [3]:	FI DE FORES:  DE FORES:  DE FORES:  RESIDE  TO CHENCE!	LOOD PLAIN QUALI J.SWAMP. [3] OR: OLD: FIELD [2] NTIAL: PARK, NEW FIELD J.PASTURE [1]		ONSERVATION TIELAGE [4] REAN OR INDUSTRIAL [0] INING/CONSTRUCTION [0]	
EROSION  MODERATE [2]	RIPARIAN WIDTH    WIDE > 50m [4]     WIDE > 50m [4]     WIDE > 50m [4]     WIDE > 50m [2]	FI DE FORES:  DE FORES:  DE FORES:  RESIDE  TO CHENCE!	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] STIAL PARK NEW FIELD		ONSERVATION TILL AGE [1]. REAN OR INDUSTRIAL [0]. INING CONSTRUCTION [0] oredominant land use(s) or riparian. Riparian Maximum	ō.て
EROSION DENOME ALTITUTE [3] DENOME ATE [2] DENOME ATE [2] Comments	RIPARIAN WIDTH   WIDE > 50m (4)   22  MODERATE 10-50m (3)   D NARROW 5-10m (2)   D VERY NARROW < 5m;   D NONE (0)	PI R FI PI	LOOD PLAIN QUALI J.SWAMP. [3] OR: OLD: FIELD [2] NTIAL: PARK, NEW FIELD J.PASTURE [1]		ONSERVATION TIELAGE [1]. REAN OR INDUSTRIAL [0]. INING/CONSTRUCTION(0) predominant land use(s) m riparian. Riparlan	ō.T
EROSION  NONE/LITTLE SI  NONE/LITTLE SI  NODERATE [2]  HEAVY/LISEVERE [4]  Comments  5] POOL/GLIDE AN	RIPARIAN WIDTH WIDE SOM (4)  MODERATE 10-50m (3)  NARROW S-10m (2)  VERY NARROW <5m; NONE (0)  RIPARIAN WIDTH	FI R FI R R R R R R R R R R R R R R R R	LOOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIIAL PARK, NEW FIELD PASTURE [4] ASTURE ROWCROP [0]	TY	ONSERVATION TILL AGE [1]. REAN OR INDUSTRIAL [0]. INING CONSTRUCTION [0] oredominant land use(s) or riparian. Riparian Maximum	ō.て
EROSION  MAXIMUM DEPTH Check ONE (ONLY)	RIPARIAN WIDTH WIDE > 50m; [4]  MODERALE 10-50m; [3] NARROW 5-10m; [2] NARROW 5-10m; [2] NONE [0]  RIPARIAN WIDTH CHANNEL WIDTH Check ONE (Or 2 & avera	FI RESIDE	LOOD PLAIN QUALI  SWAMP [3]  OR OLD FIELD [2]  VITAL PARK, NEW FIELD  PASTURE [d]  ASTURE ROWGROP [0]  JRRENT VELOCITY  Check ALL that apply	TY  Recommended to the control of th	ONSERVATION TIELAGE [1] REAN OR INDUSTRUAL [0] INING / CONSTRUCTION [0] Oredominant land use(s) or riparian.  Riparian Maximum 10  Recreation Potential  Primary Contact	D.T
EROSION  MAXIMUM DEPTH Check ONE (ONLY)	RIPARIAN WIDTH   WIDE > 50m [4]     WIDE > 50m [4]	FI B FORES  P Z SHRUB  P Z SHRUB P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB  P Z SHRUB	LOOD PLAIN QUALI  SWAMP [3]  OR OLD FIELD [2]  VITAL PARK, NEW FIELD  IPASTURE [1]  ASTURE ROWCROP [0]  JRRENT VELOCITY  Check ALL that apply  NTIAL [1]	TY	CNSERVATION TIELAGE TIERAN OR INDUSTRIAL [0] INING / CONSTRUCTION [0] Oredominant land use(s) or riparian. Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact	ō.T
EROSION  Z NONE / LITTLE   31    MODERATE   21    HEAVY / SEVERE   41  Comments  5] POOL / GLIDE AN  MAXIMUM DEPTH  Check ONE (ONLY))    2/65/m   21    0.44-0/7m   21	RIPARIAN WIDTH WIDE > 50m; [4]  MODERALE 10-50m; [3] NARROW 5-10m; [2] NARROW 5-10m; [2] NONE [0]  RIPARIAN WIDTH CHANNEL WIDTH Check ONE (Or 2 & avera	FI PROSEST OF THE PRO	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] NIAL PARK, NEW FIELD IPASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NITAL [1] SLOW [1] AST[1] NITERSTIT	TY    Compared to the compared	CNSERVATION TIEL AGE TIERBAN OR INDUSTRUAL 101 NING CONSTRUCTION 101 predominant land use(s) m riparian. Riparian Maximum 10 Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)	ō.T
EROSION  Z NONE / LITTLE   31    MODERATE   22    HEAVY / SEVERE   42  Comments  5] POOL / GLIDE AN  MAXIMUM DEPTH  Check ONE (ONLY)    210   61    0.76   510   (41)    0.76   510   (41)    0.76   50   (40)    0.76   50   (40)    0.76   50   (41)    0.76   50   (41)    0.76   50   (41)    0.76   50   (41)    0.76   50   (41)    0.76   50   (41)	RIPARIAN WIDTH WIDE 250m [4] WIDE 250m [4] RIPARIAN WIDTH WIDE 250m [4] RIPARIAN WIDTH RIPARIAN WIDTH RIPARIAN WIDTH CHANNEL WIDTH Check ONE (Or 2 & avera POOL WIDTH RIPELE WID	FI  B FORES  D Z SHRUB  D RESIDE  TO C SHRUB  D RESIDE  TO C SHRUB  TO C SHRUB	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] NIAL PARK, NEW FIELD IPASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NITAL [1] SEOW [1] AST [1] INTERMIT [AST [1] EDDIES [1]	TY  Compared to the compared t	CNSERVATION TIEL AGE TIERBAN OR INDUSTRUAL [0] INING CONSTRUCTION [0] Orecominant land use(s) In riparian. Riparlan Maximum 10  Recreation Potential Primary Contact Secondary Contact [circle one and comment on back]	なて
EROSION  MAXIMUM DEPTH Check ONE (ONLY)  O 752 0 4 4 11  Comments  Comments  D 753 POOL / GLIDE AN  MAXIMUM DEPTH Check ONE (ONLY)  D 764 0 766 2  D 0.25 2 10 141  D 0.25 2 10 141  Comments	RIPARIAN WIDTH WIDE > 50m [4]  MODERALE 10-50m [3]  NARROW 5-10m [2]  NARROW 5-10m [2]  NONE [0]  RIPARIAN WIDTH CHANNEL WIDTH Check ONE (Or 2 & avera POOL WIDTH = RIFELE WID POOL WIDTH = RIFELE WID	FI  B FORES  D Z SHRUB  D RESIDE  TO C SHRUB  D RESIDE  TO C SHRUB  TO C SHRUB	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] NIAL PARK, NEW FIELD IPASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NITAL [1] SLOW [1] AST[1] NITERSTIT	TY  Compared to the compared t	CONSERVATION TIEL AGE TIERAN OR INDUSTRIAL [0] INING CONSTRUCTION [0] Oredominant land use(s) In riparian. Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool / Current Maximum	7.5
EROSION  MAXIMUM DEPTH Check ONE (ONLY)  DIAGON (ONLY)  MAXIMUM DEPTH Check ONE (ONLY)  DIAGON (ONLY)  COMMENTS  COMMENTS  TO A COMMENTS  Comments	RIPARIAN WIDTH   WIDE > 50m   4      WIDE > 50m   4      MODERA   E 10-50m   12     MARROW 5-10m   12     WERY NARROW < 5m     NONE   10     NONE   10     ARROW 5-10m   12     ARROW 5-10m   12     NONE   10     ARROW 5-10m   12     NONE   10     NONE   10     ARROW 5-10m   12     NONE   10     ARROW 5-10m   12     NONE   10     POOL WIDTH > RIFELE WID     POOL WIDTH > RIFELE WID     POOL WIDTH > RIFFLE WID     POOL WID	P FI	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VITAL PARK, NEW FIELD PASTURE [d] ASTURE (ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NTALE [1] SEOW [1] AST [1] INTERMIT AST [1] INTERMIT ATTERITY DEDDIES [1] ale for reach - pools and ril	TY	CONSERVATION TIEL AGE TIERBAN OR INDUSTRUAL 101 INING CONSTRUCTION 1	7.5
EROSION  NONE / LITTLE   3  NONE	RIPARIAN WIDTH   WIDE > 50m; [4]   WIDE > 50m; [4]   MODERALE 10-50m; [3]   NARROW 5-10m; [2]   NARROW 5-10m; [2]   NARROW 5-10m; [2]   NONE [0]   NONE [0]   A C STIPPLE / RUN QUALITY   CHANNEL WIDTH   Check ONE (Or 2 & averal   POOL WIDTH STRIFFLE WID   CONTROL WIDTH STRIFFLE WID   CONTRO	FI  B 2 FORES  B 2 FORES  B 2 SHRUB  C	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIAL PARK, NEW FIELD PASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NTIAL [1] SLOW [1] AST [1] MISERSTI [2] MISERSTI [3] MISERSTI [4] DEDDIES [1] enough to support average).	TY	REAN OR INDUSTRUAL [0] INING CONSTRUCTION [0] INING CONTROL  Recreation Potential  Primary Contact  Secondary Contact  [circle one and comment on back]  Pool ( Current  Maximum  12	7.5
EROSION  NONE / LITTLE   3  NONE	RIPARIAN WIDTH WIDE > 50m; [4]  MODERALE 10-50m; [3]  MODERALE 10-50m; [3]  NARROW 5-10m; [2]  VERY NARROW < 5m; NONE [0]  POOL WIDTH STREELE WID  POOL WIDTH STREELE WID  POOL WIDTH STREELE WID  POOL WIDTH STREELE WID  TO THE STREET	FI  B 2 FORES  B 2 FORES  B 2 SHRUB  C	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIAL PARK, NEW FIELD PASTURE [1] ASTURE ROWCROP [0]  JRRENT VELOCITY Check ALL that apply NTIAL FIT SEOW [1] ASTURE [1] SHOW [1] ASTURE [1] SEOW [1] ASTURE [1] SEO	TY	REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] INING CONSTRUCTION [0] Orecominant land use(s) In riparian.  Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact [circle one and comment on back]  Pool / Current Maximum 12  ON INO RIFFLE [metric=0]  EMBEDDEDNESS	7.5
EROSION  NONE / LITTLE   3  NONE	RIPARIAN WIDTH WIDE > 50m [4]  MODERALE 10-50m [3] NARROW 5-10m [2] NARROW 5-10m [2] NARROW 5-10m [2] NONE [0] NONE [0] RIFFLE / RUN QUALIT CHANNEL WIDTH Check ONE (Or 2 & avera POOL WIDTH > RIFFLE WID RIFFLE	FI  RESIDE  RE	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIAL PARK, NEW FIELD PASTURE [d] ASTURE [ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NTIAL [6]  SLOW [6] ASTURE [1]  MIERSTI [1]  MIERSTI [2]  NIERSTI [3]  MIERSTI [4]  DEDOIES [6] enough to support average). SUBSTRATE RIFF [5]  SUBSTRATE RIFF	TY	REAN OR INDUSTIFUAL [0]  NING/CONSTRUCTION [0]  predominant land use(s) m riparian. Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool/ Current Maximum 12  On INO RIFFLE [metric=0]  EMBEDDEDNESS NE [2]	7.5
EROSION  NONE / LITTLE   31    MODERATE   21   MODERATE   22   MODERATE   22   MODERATE   23   MODERATE   24   MODERATE   25	RIPARIAN WIDTH   WIDE   50m [4]     WIDE   50m [4]     MODERATE 10:50m [3]     NARROW   5-10m [2]     NARROW   5-10m [2]     NONE   10     NON	FI  RESIDE  RE	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VITAL PARK, NEW FIELD PASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NITAL [1] SLOW [1] ASTURE [1] SLOW [1] ASTURE [1] DEDDIES [1] AND COMPANY [1]  enough to support average).  SUBSTRATE RIFF EDDIES [1]	TY	REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] RECOMBINED FROM [0] Orecominant land use(s) In riparian.  Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool / Current Maximum 12  On PNO RIFFLE [metric=0]  EMBEDDEDNESS NE [2]  In riff   Riffle /	7.5
EROSION  NONE / LITTLE   3     MODERATE   2    MODERATE   2    HEAVY / SEVERE   3     FOUL / GLIDE AN  MAXIMUM DEPTH  Check ONE (ONLY)   Min   6    0.76-1 in   4    0.76-1 in   4    0.76-1 in   6    0.76-1 in	RIPARIAN WIDTH   WIDE   50m [4]     WIDE   50m [4]     MODERATE 10:50m [3]     NARROW   5-10m [2]     NARROW   5-10m [2]     NONE   10     NON	FI  RESIDE  RE	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIAL PARK, NEW FIELD PASTURE [d] ASTURE [ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NTIAL [6]  SLOW [6] ASTURE [1]  MIERSTI [1]  MIERSTI [2]  NIERSTI [3]  MIERSTI [4]  DEDOIES [6] enough to support average). SUBSTRATE RIFF [5]  SUBSTRATE RIFF	TY	REAN OR INDUSTIFUAL [0]  NING/CONSTRUCTION [0]  predominant land use(s) m riparian. Riparian Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool/ Current Maximum 12  On INO RIFFLE [metric=0]  EMBEDDEDNESS NE [2]	7.5
EROSION  Z NONE / LITTE   31    MODERATE   22   MODERATE   23   MODERATE   23	RIPARIAN WIDTH WIDE > 50m; [4]  MODERALE 10-50m; [3]  NARROW 5-10m; [2]  NARROW 5-10m; [2]  NARROW 5-10m; [2]  NONE [0]  POPULATION OF A STATE	FI  B 2 FORES  B 2 FORES  B 2 SHRUB  C	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] OR OLD FIELD [	TY	REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] RECOMBINED RUCTION [0] Oredominant land use(s) In riparian.  Riparlan Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool/ Current Maximum 12  ON EMBEDDEDNESS NE [2] RIFIE DERATE [0] RIFIE Maximum R	7.5
EROSION  NONE / LITTLE   3  NONE	RIPARIAN WIDTH WIDE > 50m [4]  MODERA IE 10-50m [3]  NARROW 5-10m [2]  NONE [0]  POOLEND HE RIFFLE WID  POOLEND HE RIFFLE WID  POOLEND HE RIFFLE WID  Tonal riffles; Best areas is species:  RUN DEPTH MAXIMUM > 50cm [2]  MAXIMUM > 50cm [2]  MODERATE [6-10]	FI  B 2 FORES  B 2 SHRUB  C SH	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] OR OLD FIELD [3] OR OLD FIELD [4] OR OLD FIELD [	TY	REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] RECOMBINED RUCTION [0] Predominant land use(s) Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool/ Current Maximum 12  ON EMBEDDEDNESS NE [2] Maximum B  RIffle / Run B  O Gradient  O Gradient	
EROSION  NONE / LITTLE   31  NONE / LITTLE   31  NODERATE   21  NODERATE   21  NODERATE   22  NODERATE   22  NODERATE   22  NODERATE   22  NODERATE   23  NODERATE   24  NODERATE   25  NO	RIPARIAN WIDTH WIDE > 50m [4]  MODERA IE 10-50m [3]  NARROW 5-10m [2]  NONE [0]  POOLEND HE RIFFLE WID  POOLEND HE RIFFLE WID  POOLEND HE RIFFLE WID  Tonal riffles; Best areas is species:  RUN DEPTH MAXIMUM > 50cm [2]  MAXIMUM > 50cm [2]  MODERATE [6-10]	FI  B 2 FORES  B 2 SHRUB  C SH	OOD PLAIN QUALI SWAMP [3] OR OLD FIELD [2] VIAL PARK, NEW FIELD DPASTURE [1] ASTURE ROWGROP [0]  JRRENT VELOCITY Check ALL that apply NITALE [1] SLOW [1] ASTURE [1] MITERMIT RAJE [0] EDDIES [1] HE FOR reach - pools and ril enough to support average).  SUBSTRATE RIFF DIE BOUIGE [2] GLARGE GRAVE [1] Fine Graver, Sand [0]  %POOL:  %POOL:  O  RUN:  O	TY	REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] REAN OR INDUSTRIAL [0] RECOMBINED RUCTION [0] Predominant land use(s) Maximum 10  Recreation Potential Primary Contact Secondary Contact (circle one and comment on back)  Pool/ Current Maximum 12  ON EMBEDDEDNESS NE [2] Maximum B  RIffle / Run B  O Gradient  O Gradient	7.5

oby Creek	47)	M#8 "7.06	(1)	Streen L		
TREAM 1	spoom	y have	ac Cas		00 M	
> had	tis your of yours matter	Smel, gravel,			ternote mod	
	Jun Jang	oon post	Read Road	5700	m	
	pp Cots - onten	Tractor Fractor	mondy poods	55m - dd)	:Buiwe:10	Sirean l
Legacy Tree:  Sparkfull width  Bankfull max depth  Bankfull max depth  Sparkfull max depth  The control of the	CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / OUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME PARK / GOLF / LAWN / HOME		SPRAY / SUAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / OUE SIDED MOVING-BEDLOAD-STABLE SELOCATED / SLUMPS ISLANDS / SCOURED INPOUNDED / DRAINAGE	DISCOLORATION  DISCOL	GES Education Community (Community Community C	meters  CANOPY  □ 85% 65%  □ 10% 55%  □ 20% 55%  □ 20% 55%  □ 20% 55%
F] MEASUREMENTS  Xwidth 75  Tradeb 75  Tradeb 75	EJ ISSUES  HARDENED / URBAN / DIRT&GRIME AND A COOLLAWINED / LANDELL	Circle some & COMMENT	D] MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD	B] AESTHETICS	CLARITY  CLARITY  1stsemple passe 2nd  1stsemple passe 2nd	0.05 KE   0.0
					bnC-sseq elgnes-1s1	DISTANCE
es directions, etc.	Sampling observations, Concerns, Acce	الا Observed - Inferred, Other	reach typical of steam?, Recreation	Comment RE: Reach consistency/ is	ED REACH CT STAGE	A] SAMPLE Check A METHOD

# EVPOOI Sheet 26 Stream 0

<b>OrioEPA</b>

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

C QH	El Score: [4	6.5
RM:		
/8		verified location
SILT	QUALITY   HEAVY [-2]   MODERATE [-1]   NORMAL [0]   FREE [1]	Substrate  Maximum 20
pools.	Check ONE (Or 2 & ave EXTENSIVE >75% [1] MODERATE 25-75% SPARSE 5-<25% [3] NEARLY ABSENT <5	1] [7] 5% [1]
	Cover Maximun 20	7    X /
	Channe Maximun 20	2 1/1/5
r 2 per hank		
ט □ □ ∪ א □ □ [1] כ Indicate	CONSERVATION TILLA IRBAN OR INDUSTRIA IINING / CONSTRUCTI predominant land use(s Om riparian. Riparian Maximun	ON [0]
	10 10 10 10 10 10 10 10 10 10 10 10 10 1	<i>i</i>
TIAL [-1]	Recreation Poten Primary Contact Secondary Cont telescended comment on	ct act
TENT [-2] i]	Pool	

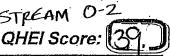
Stream & Location: E	East Fork	Buck	Creek		RM;	Date	:5121168
<u>,, , , , , , , , , , , , , , , , , , ,</u>		Sco	rers Full Name &	Affiliation:	K.G	ar-H	ull
River Code:	STORE		Lat./ Long.: (NAD 83 - decimal °).		<u>/8</u> .		Office verified location
1] SUBSTRATE Check Control of the co	ONLYTwo substrate TY e % or note every type :	'PE BOXES; present		Check ON	E (Or 2 &	average)	
		(n-c	OUL RIFFLE	ORIGIN		QUAL	
BLDR /SLABS [10]		ARDPAN [4]  _ ETRITUS [3]  _		ESTONE [1] .S [1]		☐ HEAVY I	-
☐☐ BOULDER [9]	<u>3∕0</u> □ □ MI	UCK [2]	WET	TLANDS [0]	SILT	NORMA	. Control of the
□ 图 GRAVEL [7]				DPAN [0]		FREE [1]	
☐☐ BEDROCK ISI		RTIFICIAL [0] _ Score natural sub	strates ignore RIP/	RAP [0] 🙎	FDDEON	⊠ MODER	ATE I-11
NUMBER OF BEST TY	PES: 4 or more [	2] sludge from p	ooint-sources) 🔲 LAC	USTURINE [0] ជិ LE [-1]	٠.	S NORMA	L [0] 20
Comments 1,1	はして [0] (より) [1] [1] [1] [1] [1] [1] [1] [1] [1] [1]	]		LE [-1] L FINES [-2]		∐ NONE [1	'i
•			······································				
2] INSTREAM COVER	duality, X-Modetate at	nounts nu noi i	of nignest quality of in :	sman amounts of	manesi		<b>DUNT</b> Or 2 & average)
quality; 3-Highest quality in a diameter log that is stable, w	moderate or greater an vell developed rootwad	nounts (e.g., ver in deep / fast w	y large boulders in dee ater, or deep, well-defi	ep or fast water, la ned, functional po			
UNDERCUT BANKS	[1]	POOLS > 70cm	ı [2]OXBOWS	S, BACKWATER	S [1] 🗆	<b>-</b> .	25-75% [7]
/ OVERHANGING VEG		ROOTWADS [1] BOULDERS [1]		MACROPHYTE  WOODY DEBR		∬SPARSE 5- 1 NEARLY A	<25% [3] 3SENT <5% [1]
ROOTMATS [1]		Boolot, (o f.,				_	Cover
Comments							Maximum 20
3] CHANNEL MORPHO	OLOGY Check ONE in	n each category	(Or 2 & average)				
		HANNELIZA		ABILITY			
		ONE [6]		IGH [3]			
☐ MODERATE [3] ☐ GO ☐ FAI		COVERED [4] COVERING [3]		ODERATE [2] OW [1]			
		CENT OR NO		-			Channel //
Commen <u>ts</u>	4	3.3	5	L			Maximum [[,]
4] BANK EROSION AN	VD RIPARIAN ZOI	VE Check ONE	in each category for E	ACH BANK (Or 2	per bank	& average)	
River right looking downstream	L R RIPARIAN V		R FLOOD PL	AIN QUALIT	ᆂ		
L R EROSION 。E E NONE / LITTLE [3]	☐ ☐ WIDE > 50m [4] ☐ ☐ MODERATE 10		☐ FOREST, SWAMP [ ☐ SHRUB OR OLD FI				ON TILLAGE [1] DUSTRIAL [0]
☐ ☐ MODERATE [2]	図DNARROW 5-10	n [2] 🔲 🗎	RESIDENTIAL, PAR	K, NEW FIELD [1			STRUCTION [0]
= =			☐ FENCED PASTURE ☑ OPEN PASTURE, F			predominant	
Comments 3	□ □ NONE [0]		OPEN PASTORE, P	OWCROP [0]	past 10	0m riparian.	Riparian S
Comments	<u> </u>		0.				10
5] POOL / GLIDE AND			CURRENT	VELOCITY		Recreatio	n Potential
MAXIMUM DEPTH Check ONE (ONLY!)	CHANNEL 1 Check ONE (Or 2			that apply		11	Contact
☐ > 1m [6]	M POOL WIDTH > RIFF	LE WIDTH [2]	TORRENTIAL [-1]	<b></b>		Seconda	ry Contact
☐ 0.7-<1m [4]     [ 図 0.4-<0.7m [2]     [	∐POOL WIDTH = RIFF ☐ POOL WIDTH < RIFF	ELE WIDTH [1]	☐ VERY FAST [1] ☐ FAST [1]	☐ INTERSTITU		(circle one and o	comment on back)
☐ 0.2<0.4m [1]			MODERATE [1]	☐ EDDIES [1]	• -		Pool/
☐ < 0.2m [0]	7		Indicate for reaci	h - pools and riffle	?S.		Current 6
Comments 7	<i>ت</i>			<i></i>			12
Indicate for function of riffle-obligate s		a <b>reas must</b> I Check Ol	be large enougn NE (Or 2 & average).	то ѕиррогт а	populai	IION □NO	RIFFLE [metric=0]
RIFFLE DEPTH	RUN DEPTH		E / RUN SUBST	RATE RIFFL	E/RUN	N EMBEDD	EDNESS
☐ BEST AREAS > 10cm [2]			E (e.g., Cobble, Boul			ONE [2]	
☑ BEST AREAS 5-10cm [1] ☐ BEST AREAS < 5cm	MAXIMUM < 50CII		STABLE (e.g., Large ( BLE (e.g., Fine Grave		a 図Mic	OW [1] ODERATE [0]	Riffle /
[metric=0]	1		1		U ″⊟ E	CTENSIVE [-1	Run 3
6] GRADIENT (8.82	A [] \( \text{IPS} \) ( \( \text{C} \)	/ 1 034/ 70 47	1	N (1/2) -	/ 0: 155	(10)	8
DRAINAGE AREA	ft/mi) ☐ VERY LOW  / MODERATI		%PO(	<del></del>	%GLIDE		Gradient (
(4,4	mi²) HIGH - VEF		%RUI	V: (∠∂)%	RIFFLE	:(50)	10
EPA 4520 ENGTH D/W CONTEUR	ads 1	07		= 8.8	<u> </u>		06/16/06

Strm len eleviding = 1089 - 1080 = 9ft ) 9/1.02mi = 8,82 tt/1

	Cop Copy of Co				
have 20	7/1/2	vo .	Pun		
	To to				
				~ mo/+	Stream Drawing:
F] MEASUREMENTS  x depth x depth max. depth yankfull width bankfull x depth bankfull max. depth loodprone x² width floodprone x² width entrench. ratio	WWTP / CSO / NPDES / INDUSTRY WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE RALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT	Circle some & COMMENT	PJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED ISLANDS / SCOURED ISLANDS / SCOURED	☐ INVASIVE MACROPHYTES ☐ EXCESS TURBIDITY ☐ DISCOLORATION ☐ FOAM / SCUM ☐ OIL SHEEN ☐ TRÅSH / LITTER ☐ UULSHCE ODOR ☐ SLUDGE DEPOSITS ☐ SLUDGE DEPOSITS ☐ CSOS/SSOS/OUTFALLS	410%+ CLOSED   10%+ CLOSED
National Control of the Control of t					
					DISTANCE DIRY
					METHOD STAGE    BOAT   1st-sample pass-2nd       BOAT   1st-sample pass-2nd       C. LINE   D.P.       OTHER   DRY

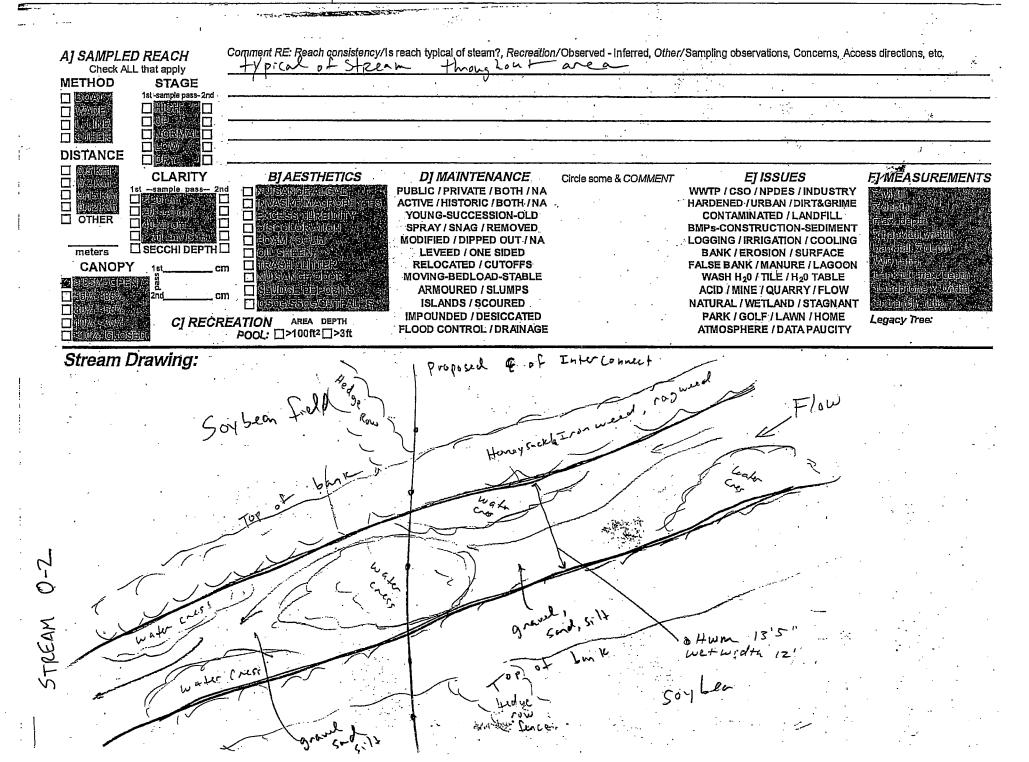
EPA 4520

# Mod WWH, but designated CWH Qualitative Habitat Evaluation Index and Use Assessment Field Short



06/16/06

and Use Assessment Field Sheet	
Stream & Location: Kasa Form Buck CREEK - STR-02 RM:	Date:/0] 14   ] 1
Scorers Full Name & Affiliation: B. FALV	UNBURG - HULL
River Code: STORET#: Lat./Long.: 40.054 1483.	632253 Office verified ☐ location ☐
1] SUBSTRATE Check ONLY Two substrate TYPE BOXES: estimate % or note every type present Check ONE (Or 2 & a	
BEST TYPES POOL RIFFLE OTHER TYPES POOL RIFFLE ORIGIN	QUALITY
O DEGREE SILT	X MODELVA E Et Substrate
	DISTRICT 13
Core patural substrates: ignore CISTER AREA	Maximum
Core natural substrates; ignore   Core	MAXIMUM 20 NONE IN
Comments	
14 +0 + 1 + (-1) + (-1) = 13	
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	AMOUNT  Check ONE (Or 2 & average)
diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.	EXTENSIVE 27576 (10)
1 OVERHANGINE MEGENANGATIN ROCHWADS AP 1 ACUATIC MAGROEBITES AND MACHINE MAGRO	MODERALE 2575% [7] STARSE 5 @25% [2]
SINGLEOVE (IR SLOVAVATER) [FI] BOUIGEERS [III] LEGES QRAYOOD (REEDERS III D	MEARLY ABSENT & VOID
Comments   +   + 3 = 5	Cover Maximum
water cress, potamogeton crispus	20 , 8
3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average) SINUOSITY DEVELOPMENT CHANNELIZATION STABILITY	
	ig.
DIVONER BEGIND ON THE RECEVER OF	Channel (
	Maximum   /a
Comments $2 + 1 + 2 = 6$	Maximum 6
2 + 1 + 1 + 2 = 6  4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank &	20 124
2 + 1 + 2 = 6  4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream   R RIPARIAN WIDTH   R FLOOD PLAIN QUALITY   R	average) Say beans
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REROSION DISCONDED TO THE REPORT OF THE PROPERTY OF THE RIPARIAN WIDTH REPORT OF THE RIPAR	average)  Say beaus  NSERVANDE HILLAGE AND  EVALUATION TO STREET OF
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY RIPARIAN WIDTH PROSION CONTROL OF THE PROPERTY O	average)  Say beaus  105ERVATION THACE TO BEAUTION THE CONSTRUCTION THE CO
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream  RIPARIAN WIDTH  REROSION  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARI	average) Say beaus  NSERVATION TO A STANDARD
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH REROSION RIPARIAN WIDTH RIPARIAN WID	average)  Say beaus  DESERVATION THASE OF THE STRUCK OF TH
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH REROSION RIPARIAN RIPARI	average)  Say blans  NSERVANDE LEGEN  AVERAGE STRUGGE ON THE STRUG
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REPOSION RIPERS OF CHOICE OF	average) Say beaus  DESERVATION TO A STATE OF THE ACT O
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REROSION DESCRIPTION DESCRIP	average)  Say beaus  105ERVATION TAGE  TAY (Veral Reus) BRACIE IN ACTION TO THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY Contact  Secondary Contact
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH REROSION RIPARIAN WIDTH Check ONE (ONLY) RESIDENT VELOCITY CHECK ONLY (ONLY) RESIDENT VELOCITY CHECK ONLY (ONLY (ONL	average)  Say beaus  DESERVATION TRACE  TAY NO REPORT TRACE  TO THE PROPERTY OF THE PROPERTY O
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REPORTED TO THE RIPERIAN WIDTH RIPERIAN WIDTH RIPERIAN WIDTH RIPERIAN WIDTH RIPERIAN WIDTH RIPERIAN WIDTH CHECK ONE (ONLY) Check ONE (Or 2 & average)  5] POOL / GLIDE AND RIFFLE / RUN QUALITY  MAXIMUM DEPTH CHANNEL WIDTH CHANNEL WIDTH Check ONE (ONLY) Check ONE (Or 2 & average)  Comments REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (ONLY) Check ONE (Or 2 & average)  Comments REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (ONLY) Check ONE (Or 2 & average)  COMMENTS REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (ONLY) Check ONE (OR 2 & average)  COMMENTS REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  COMMENTS REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  COMMENTS REPORT OF CHANNEL WIDTH CHANNEL WIDTH CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (ONLY) CHECK ONE (OR 2 & average)  CHECK ONE (OR	average)  Say blans  NSERVANDE LEGEN  PARISH THE COMMENT OF THE CO
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY  EROSION    RIPARIAN WIDTH FLOOD PLAIN QUALITY   RIPARIAN WIDTH   RIPERS   RIPE	average)  Say beaus  DESERVATION TO SERVATION  Explored to the servation of the servation o
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream  RIPARIAN WIDTH  EROSION	average)  Say beaus  DESERVATION TO SERVATION  Explored to the servation of the servation o
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY RECOGNIC COMMENTS  3 + 1 + 1 = 5 Soy been on both sides  5] POOL / GLIDE AND RIFFLE / RUN QUALITY  Check ONE (ONLY!) Check ONE (Or 2 & average)  Comments  2   1   2   3   4   5   4   5   5    Comments  3   1   4   5   5   5    Comments   2   6   6   6   6    Comments   2   7   7   7    Check ONE (ONLY!) Check ONE (Or 2 & average)  Comments   2   7   7   7    Comments   2   7   7   7    Comments   2   7   7    Comments   7   7    Comments   7   7    Comments   7   7    Comments   7   7   7    Comments   7   7    Comment	average)  Say beaus  DESERVATION IN ACCOUNTS  EXAMPLE ACCOUNTS  EXAMPLE ACCOUNTS  EXAMPLE ACCOUNTS  RECOMMENTATION AND ACCOUNTS  Recreation Potential  Primary Contact  Secondary Contact  circle one and comment on back)  Pool (  Current Maximum  12  NO RIFFLE [metric=0]
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY RECOSION RIVER STATE OF CHECK ONE IN CASE OF CHECK ONE IN CASE OF CHECK ONE (OR 2 & average)  Comments  3 + 1+	average)  Say beaus  DESERVATION IN AGE  TAY NO RING US HE MARKET IN AGE  TO SERVATION IN AGE
A   A   A   A   A   A   A   A   A   A	average)  Say black  DEFACTOR INCUSTRIVE CONTROL STRIVE CONTROL STRIVE CONTROL STRIVE CONTROL STRIVE CONTROL STRIVE CONTROL STRIVE CONTROL SECONDARY CONTACT SECONDARY CONTACT CURRENT Maximum  10  NO RIFFLE [metric=0]  EMBEDDEDNESS  RIFFLE [Metric=0]  EMBEDDEDNESS
A   A   A   A   A   A   A   A   A   A	average)  Say beaus  Assertation Potential  Primary Contact  Secondary Contact  Current  Maximum  10  And Current  Maximum  10  And Current  Maximum  10  And Current  Maximum  12  And Current  Maximum  Max
4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & River right looking downstream RIPARIAN WIDTH FLOOD PLAIN QUALITY REROSION RIPARIAN WIDTH CHANNEL WIDTH RIPARIAN SECURITY RIPARIAN RIPA	average)  Say beaus  DEFACTOR INTERPLACED  AND ARTHUR USHRIVE TO INTERPLACE TO INTERPL
A   A   A   A   A   A   A   A   A   A	average)  Say black  Servation Potential  Primary Contact  Secondary Contact  Circle one and comment on back)  Pool  Current  Maximum  12  Pool  Current  Maximum  12  Refifle /  Run  Riffle /  Run



Modified Class I  ChicEPA Primary Headwater Habitat Evaluation Form  Stram P. (2) HHEI Score (sum of metrics 1, 2, 3): 19
SITE NAME/LOCATION F VACCION IN THE STATE OF
LENGTH OF STREAM REACH (ff) LAT. LONG. RIVER CODE RIVER MILE  DATE 5/2 CORRE TO COMMENTS MOST IS TOROW OKACL  NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions  STREAM CHANNEL ONNE NATURAL CHANNEL RECOVERED RECOVERING RECOVERY  MODIFICATIONS:
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE PERCENT PERCENT PERCENT PERCENT PERCENT PERCENT SILT [3 pt] SUBSTRATE (Points Substrate PERCENT SILT [3 pt] SILT
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):    > 30 centimeters [20 pts]
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Immature Forest, Shrub or Old  Field  Narrow <5m  Residential, Park, New Field  Open Pasture, Row Crop  None  COMMENTS  Charle ON Field Imming or Construction
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):   None

ADDITIONAL STREAM INFORMATION (This Information Must Also be	e Completed):	
QHEI PERFORMED? - TYes No QHEI Score	(If Yes, Attach Completed QHEI Form)	
	Distance from Evaluated Stream	
☐ CWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIR  V.A. M. 1/12 V DISTRICT LOT 2/18 V  County: Name: Township  MISCELLANEOUS	0 IRCS Soil Map Page: NRCS Soil Map Stream 0	ATION Order
Base Flow Conditions? (Y/N): Note of last precipitation: We have provided in the provided in t	photo # 24	
Were samples collected for water chemistry? (Y/N): (Note lab sa	ample 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, ple	ease explain: This is the head	waters
reach of this stream representa	the of 4113 reach	
Additional comments/description of pollution impacts:		
• • • • • • • • • • • • • • • • • • • •	Macroinvertebrates Observed? (Y/N)/_Voucher? (Y/	ual) . /
DRAWNIC AND MADDATIVE DESCRIPTION O	SE SEDERAN DE A CILIZADA DE CONTRA DECONTRA DE CONTRA DE	1\-
DRAWING AND NARRATIVE DESCRIPTION O  Include important landmarks and other features of interest for si		
Cons	tillage co	
& colvert WIDE	53 VII Our	pool
FLOW →	S W C W	+
		0/<
Cons	tillage	ols IMEZ

Stream Q

### HHEI 1 Turbine 70

Modified Class II

Primary Headwater Habitat Evaluation Form

EVPØØ / HHEI Score (sum of metrics of

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

 	***	
3	7	ATTENNA TO STATE OF

	SITE NAME/LOCATION WAS L- I STEAM Q	SPANGER .
	SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²)	
	LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE	
	DATE 8/11/05 SCORER KR SWH COMMENTS	
	NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
	STREAM CHANNEL DINONE / NATURAL CHANNEL RECOVERED DIRECTOR NO RECO	/ERY
	MODIFICATIONS:	CART. Guidelia
	<ol> <li>SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes         (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A &amp; B.</li> </ol>	HHEI
	TYPE PERCENT TYPE PERCENT	Metric Points
	BLDR SLABS [16 pts]	ronics
	BEDROCK [16 pt]	Substrate Max = 40
	☐ COBBLE (65-256 mm) [12 pts] ☐ CLAY or HARDPAN [0 pt] ☐ CLAY or HARDPAN [0 pt] ☐ MUCK [0 pts]	
l	☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts]	
	Total of Percentages of (A)	
	Bidr Slabs, Boulder, Cobble, Bedrock	A+B
	SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
	<ol> <li>Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</li> </ol>	Pool Depth Max = 30
	> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	IVIAX - 30
	□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ NO WATER OR MOIST CHANNEL [0 pts]	25
	a special section of the section of	
	COMMENTS MAXIMUM POOL DEPTH (centimeters):	
	3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull Width
	□ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] □ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	Max=30
	17511	
·	COMMENTS AVERAGE BANKFULL WIDTH (meters)	N. Company
	This information must also be completed	· · · · · · · · · · · · · · · · · · ·
•	RIPARIAN ZONE AND FLOODPLAIN QUALITY \$\text{NOTE}: River Left (L) and Right (R) as looking downstream\$	
	RIPARIAN WIDTH FLOODPLAIN QUALITY  L.R. (Per Bank) L.R. (Most Predominant per Bank) L.R.	
	☐ ☐ Wide >10m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage	
	☐ ☐ Moderate 5-10m Immature Forest, Shrub or Old ☐ ☐ Urban or Industrial	
	Narrow <5m	
	☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction	
	COMMENTS	
	FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing   Moist Channel, isolated pools, no flow (Intermittent)	
	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     □ 1.0     □ 2.0     □ 3.0       □ 0.5     □ 1.5     □ 2.5     □ >3	
	STREAM GRADIENT ESTIMATE	-
	☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe 410 ft/100 ft	R)

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: <u>Fast For Buck ('MPK</u> Distance from Evaluated Stream <u>012m1</u>
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: Champaign Township / City: 1/1101 4wp
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of last precipitation: 8/10/64 Quantity: UNKNOWN
Photograph Information: VeS
Elevated Turbidity? (Y/N): Canopy (% open): 8-0
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: Ha ditch / hedge mw partially
BIOTIC EVALUATION J
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) Vo
Comments Regarding Biology:
YIONE OBSERVE OL
DRAWING AND NADRATIVE DESCRIPTION OF CERTAIN PERCENTION
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other reatures of interest for site evaluation and a narrative description of the stream's location
include important landinarys and other reactives of interest for site evaluation and a narrative description of the squaint's location
FLOW Smooth gross www.
the channel

### Turbine 37 Stream R

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1.2.3):

Class -	Ţ,
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Primary Headwater Habitat Evaluation Form  HHE! Z HHEI Score (sum of metrics 1, 2, 3):	43
SITE NAME/LOCATION	
EVPOUI SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²)	<del></del>
LENGTH OF STREAM REACH (ft) 200 LAT. LONG. RIVER CODE RIVER MILE DATE 8 11 04 SCORER KC SMH COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERED RECOVERING RECOVERING RECENT OR NO RECOVERED RECOVERING RECOVERING RECENT OR NO RECOVERED RECOVERING RECOV	OVERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT  BLDR SLABS [16 pts] D SILT [3 pt]	Metric Points
BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] BEDROCK [16 pt] DIFINE DETRITUS [3 pts]	Substrate
COBBLE (65-256 mm) [12 pts]	Max = 40
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	/84
Total of Percentages of (A) (B) (B) (B) (B) (B) (B) (B) (B) (B) (B	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	
<ol> <li>Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</li> </ol>	Pool Depth Max = 30
> 30 centimeters [20 pts]   > 5 cm - 10 cm [15 pts]   > 5 cm [5 pts]   >	
> 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check <i>ONLY</i> one box):    > 4.0 meters (> 13') [30 pts]   > 1.0 m (> 3' 3" - 4'.8") [15 pts]   > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]     ≤ 1.0 m (≤ 3' 3") [5 pts]	Bankfull Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
COMMENTSAVERAGE BANKFULL WIDTH (meters)	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Open Pasture, Row Crop	
☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction	
	_
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Moist Channel, isolated pools, no flow (Intermitten)	)
FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent Dry channel, no water (Ephemeral)	_ ) _
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing	

DOWNSTREAM DE	SIGNATED USE(S),	Dietar	oce from Evaluated Stream	Zmi
A CMH Name:	1 1 1 1 1 1	Distan	ce from Evaluated Stream	
MAPPING: ATTACH	COPIES OF MAPS, INCLUDING THE	ENTIRE WATERSHED AREA. O	CLEARLY MARK THE SITE LOCAT	пои
USGS Quadrangle Name:		NRCS Soil Map Page:	NRCS Soil Map Stream On	der
County: (MAMDA		wnship / City: <u>UNION</u>	TWP	
MISCELLANEOUS	0	, ,		3
Base Flow Conditions? (Y/N):_	Date of last precipitation:	6/10/09 Que	entity: UNKNOWY.	/
Photograph Information:	V85	, ,		-
Elevated Turbidity? (Y/N):	Canopy (% open):	35		
• • •	ter chemistry? (Y/N): (Note		n results) Lab Number:	
•	Dissolved Oxygen (mg/l)			
	ntative of the stream (Y/N)			
Is the sampling reach represer	itative of the stream (Y/N) /	lot, please explain:		
	5011	orelis emde	of book (a	,512
Additional comments/description	on of pollution impacts: <u>SEVE</u>	TOUS EFFICE	OC DUTIK (	<u> </u>
dicole + losh	y Hows			
BIOTIC EVALUATI	<u>on</u>			
Performed? (Y/N):	(If Yes, Record all observations. Vou			
	ID number. Include appropriate field	-		al)
Fish Observed? (Y/N) From or Tadpoles Observed?	Voucher? (Y/N) Salamander (Y/N) Voucher? (Y/N) Ad	s Observed? (Y/N) Vouc juatic Macroinvertebrates Obse	cher? (Y/N) rved? (Y/N) Voucher? (Y/N	)
Comments Regarding Biology:				·——
	none ob se	nx d	n	
				-1) -
			i i i nie mijet na comniata	
	ND NARRATIVE DESCRIPTION			e location
	ND NARRATIVE DESCRIPTION  marks and other features of interes			s location
	· · · · · · · · · · · · · · · · · · ·			s location
	· · · · · · · · · · · · · · · · · · ·			s location
	· · · · · · · · · · · · · · · · · · ·		ative description of the stream's	s location
	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	location
Include important land	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	s location
Include important land	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	s location
Include important land	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	s location
Include important land	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	s location
Include important land	· · · · · · · · · · · · · · · · · · ·	t for site evaluation and a narr	ative description of the stream's	is location

# Turbine 18 Stream S Modified Class I Primary Headwater Habitat Evaluation Form HHE 1 3 HHEI Score (sum of metrics 1, 2, 3): 27

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1	4	Ħ
9	1	Ġ.

SITE NAME/LOCATION	
SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²)	L/mi2
LENGTH OF STREAM REACH (ft) 200 LAT. LONG, RIVER CODE RIVER MILE	
DATE 8/12/09 SCORER KC COMMENTS HAVICUIUI DI FOLD	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL DINONE/NATURAL CHANNEL DIRECOVERED DIRECOVERING DIRECENTION NO RE	YOVE V
MODIFICATIONS:	OVER 1
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric
TYPE PERCENT TYPE PERCENT  DD BLDR SLABS [16 pis]	Points
BOULDER (>256 mm) [16 pts] DEAF PACKWOODY DEBRIS [3 pts]	Substrate
☐ BEDROCK [16 pt] ☐ FINE DETRITUS [3 pts]	Max = 40
☐ COBBLE (65-256 mm) [12 pts]       ☐ CLAY or HARDPAN [0 pt]         ☐ GRAVEL (2-64 mm) [9 pts]       ☐ MUCK [0 pts]	
☐ SAND (<2 mm) [6 pts] ☐ ARTIFICIAL [3 pts]	十
Total of Percentages of (A) (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	ATB
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Max = 30
	11/5
> 22.5 < 30 cm [30 pts]	
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
S4.0 meters (≥ 13) [30 pts]       S1.0 m < 1.5 m (≥ 3' 3" - 4'8") [15 pts]	Width Max=30
3.0 m (- 4.0 m (- 9.7° - 4.8°) [20 pts]	,
COMMENTS AVERAGE BANKFULL WIDTH (meters)	
This information <u>must</u> also be completed	
RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY  L R (Per Bank) L R (Most Predominant per Bank) L R	
☐ ☐ Wide >10m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage	
☐	·
Narrow <5m Residential Park New Field XIX Open Pasture, Row	
None	1
COMMENTS	<u>.</u>
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermitter	t)
☐ 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 1.0 1.0 Check O'VLY one box):	
☐¹ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3	
STREAM GRADIENT ESTIMATE	
☐ Flat (0.5 ñ/100 ñ) ☐ Flat to Moderate ☐ Moderate (2 ñ/100 ñ) ☐ Moderate to Severe ☐ Severe (10 ñ	· · · · · · · · · · · · · · · · · · ·

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Tracle (rek 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:NRCS Soil Map Page:NRCS Soil Map Stream Order County:NRCS Soil Map Page:NRCS Soil Map Stream Order
MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: 9/10/09 Quantity: UNK NOWN
Photograph Information: VP
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: AGNCUIAUAI dIMA
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) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:
Name Olocopie
Mine Observed
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW regetation  Vegetation  V

# Turbines 42 7 45

Modified Class II

CHEM

### Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION DRAINAGE AREA (mi²) \_\_\_\_ RIVER BASIN \_\_\_\_ LAT. LENGTH OF STREAM REACH (ft) 250 LONG. \_\_\_\_\_ RIVER CODE \_\_\_\_\_ RIVER MILE SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions DINONE/NATURAL CHANNEL DIRECOVERED TRECOVERING DRECENT OR NO RECO STREAM CHANNEL MODIFICATIONS: SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric TYPE SILT [3 pt] Points BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] Substrate FINE DETRITUS [3 pts] BEDROCK [16 pt] Max = 40 COBBLE (65-256 mm) [12 pts] CLAY of HARDPAN: [0 pt] MUCK [0 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] (B) Total of Percentages of A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 5 cm = 10 cm [15 pts] -> 30 centimeters [20 pts] < 5 cm [5 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]  $\Box$ NO WATER OR MOIST CHANNEL [0 pts] MAXIMUM POOL DEPTH (centimeters): COMMENTS Bankfull BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13) [30 pts] > 3.0 m = 4.0 m (> 9'.7" = 13) [25 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width -> 3.0 m - 4.0 m (> 9 7"- 13) [25 pts] > 1.5 m - 3.0 m (> 9 7"- 4 8") [20 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] Max=30 AVERAGE BANKFULL WIDTH (meters) COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) 00 Mature Forest, Wetland Conservation Tillage Wide >10m Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Field Open Pasture, Row Residential, Park, New Field Narrow <5m Crop Fenced Pasture Mining or Construction None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral) Subsurface flow with isolated pools (Interstitial) COMMENTS\_ SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): 2.0 3.0 None 1.0 2.5 1.5 0.5 STREAM GRADIENT ESTIMATE ☐ Moderate to Severe Severe (10 ft/100 ft) Flat-(0.5 ft/100 ft) Flat to Moderate 

ADDITIONAL STREAM INFORMATION (This information Must Also be Completed):
QHEI PERFÓRMED? - 🗍 Yes 💢 No 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: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Champaian Township/City: Urbana Two
MISCELLANEOUS , ,
Base Flow Conditions? (Y/N): N Date of last precipitation: 8/10/09 Quantity: UNK110WN
Photograph Information: Ve5
Elevated Turbidity? (Y/N): Canopy (% open): 100
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts: Ha differ
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) Vo
Comments Regarding Biology:
10/10/10/10/10/10
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
$H^{-1}$
OMBOTE. 4
Corn
FLOW BOOK OF THE PROPERTY OF T
E WWW OB BOUND

Turbine 43 Stream W Modified Class II Primary Headwater Habitat Evaluation Form

HHE 1 7 HHEI Score (sum of metrics 1) HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION EVY001 \_\_\_\_\_SITE NUMBER\_\_\_\_\_\_ RIVER BASIN \_\_\_\_\_\_ DRAINAGE AREA (mi²) \_\_\_ LENGTH OF STREAM REACH (ft) 200 LAT. LONG. RIVER CODE RIVER MILE DATE 6/12/09 SCORER SMI- COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL The Company Levy Radio Addition BUCK THE THE PROPERTY OF THE MODIFICATIONS: i la firet war SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **JYPE Points** SILT [3 pt] BLDR SLABS [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] BOULDER (>256 mm) [16 pts] Substrate BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 40 ПП CLAY or HARDPAN : [0 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 风口 ARTIFICIAL [3 pts] SAND (<2 mm) [6 pts] L. Carlotter Total of Percentages of (B)  $\Delta + B$ Bldr Slabs, Boulder, Cobble, Bedrock TOTAL NUMBER OF SUBSTRATE TYPES: SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth 2. evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 5 cm - 10 cm [15 pts] > 30 centimeters [20 pts] < 5 cm [5 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts] . NO WATER OR MOIST CHANNEL [0 pts] MAXIMUM POOL DEPTH (centimeters): COMMENTS Bankfull BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width ≤ 1.0 m (≤ 3' 3") [5 pts] Max=30 > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] AVERAGE BANKFULL WIDTH (meters) COMMENTS This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ⇒NOTE: River Left (L) and Right (R) as looking downstream ⇒ FLOODPLAIN QUALITY RIPARIAN WIDTH (Most Predominant per Bank) (Per Bank) L R Conservation Tillage Mature Forest, Wetland Wide >10m Immature Forest, Shrub or Old Urban or Industrial Moderate 5-10m Open Pasture, Row Residential, Park, New Field Narrow <5m Crop Mining or Construction Fenced Pasture None COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing

2.0 1.0 1.5 2.5

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

STREAM GRADIENT ESTIMATE ☐ Moderate (2 ft/100 ft) ☐/Flat to Moderate Flat (0.5 ft/100 ft)

COMMENTS

Subsurface flow with isolated pools (Interstitial)

Moderate to Severe

Dry channel, no water (Ephemeral)

Severe (10 ft/100 ft)

3.0

>3

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFÖRMED? - Yes No QHEI Score(If Yes, Attac	ch Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: 10490 KIND  CWH Name:	
D CWH Name:	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Pa	age: NRCS Soil Map Stream Order
County: Champaign Township / City: UK	hand TWP
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation: 9 //0/09	Quantity: UNKNOWN
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (% open): 100	
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. at	nd attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	
Is the sampling reach representative of the stream (Y/N) / If not, please explain:	
71	
Additional comments/description of pollution impacts: Ha difch	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. ID number. Include appropriate field data sheets from the Principle.	
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)
Comments Regarding Biology:	
Interest Small fish in large	Den 1
$-\mu$ , $\nu$	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation an $\bigwedge_{\mathbb{N}} \cap \mathcal{V} \mathcal{N}$	d a narrative description of the stream's location
existing ving	vacation
Med Control	WWW W
FLOW WWW P	
VWV WWW VO	S V V V V V V
, 80 g	•
Cara	

### Tuibines 29'3 Stream X

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 57



Stream & Location: E√Pø⊄	King's Crek	RM:	
River Code:	Scorers   STORET #:	Full Name & Affiliation: <u>KC</u> Lat./Long.:	-Hull 3 H55xC( 2/t 5
1] SUBSTRATE Check ONLY Two		(NAD 83 - decimal °) *	Totalon -
BEST TYPES POOL RIFI  BLDR /SLABS [10]  BOULDER [9]  COBBLE [8]  SAND [6]  BEDROCK [5]	te every type present	Ulmestone [1]  TILLS [1]  WETLANDS [0]  HARDPAN [0]  SANDSTONE [0]  RIP/RAP [0]	OF 2 & average)  QUALITY    HEAVY [-2]   MODERATE [-1]   Substrate   NORMAL [0]   FREE [1]   MODERATE [-1]     MODERATE [-1]   MAXIMUM     NONE [1]   20
quality; 3-Highest quality in moderate diameter log that is stable, well devel UNDERCUT BANKS [1] OVERHANGING VEGETATION	2-Moderate amounts, but not of high or greater amounts (e.g., very large oped rootwad in deep / fast water, o POOLS > 70cm [2] V[1] ROOTWADS [1] R) [1] BOULDERS [1]	nest quality of in small amounts of high e boulders in deep or fast water, large or deep, well-defined, functional pools.  OXBOWS, BACKWATERS [1]  AQUATIC MACROPHYTES [1]	Check ONE (Or 2 & average)  Check ONE (Or 2 & average)  EXTENSIVE > 75% [11]  MODERATE 25-75% [7]  SPARSE 5-<25% [3]
3] CHANNEL MORPHOLOGY SINUOSITY DEVELOPM  HIGH [4]	ENT CHANNELIZATION	N STABILITY ☐ HIGH [3] ☐ MODERATE [2] ☐ LOW [1]	Channel Maximum 20
EROSION	IPARIAN WIDTH  IDE > 50m [4]	FLOOD PLAIN QUALITY REST, SWAMP [3] RUB OR OLD FIELD [2] SIDENTIAL, PARK, NEW FIELD [1] NCED PASTURE [1]	R CONSERVATION TILLAGE.[1] URBAN OR INDUSTRIAL [0]
Check ONE (ONLY!) Che	CHANNEL WIDTH  ck ONE (Or 2 & average)  WIDTH > RIFFLE WIDTH [2]	CURRENT VELOCITY  Check ALL that apply  DRENTIAL [-1] SLOW [1]  ERY FAST [1] INTERSTITIAL [- AST [1] INTERMITTENT  ODERATE [1] DEDIES [1]  Indicate for reach - pools and riffles.	- (
of riffle-obligate species: RIFFLE DEPTH RI □BEST AREAS > 10cm [2] □ MAX	Check ONE (O UN DEPTH RIFFLE / F IMUM > 50cm [2] SFABLE (e.g IMUM < 50cm [1] MOD. STABL	RUN SUBSTRATE RIFFLE / j., Cobble, Boulder) [2] LE (e.g., Large Gravel) [1] le.g., Fine Gravel, Sand) [0]	Oulation  NO RIFFLE [metric=0]  RUN EMBEDDEDNESS  NONE [2]  LOW [1]  MODERATE [0]  Run  Maximum  Maximum  8
	VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]	%POOL: (40) %GI %RUN: (15)%RIF	Gradient  FLE: 30  Maximum 10

EPA 4520

06/16/06

AJ SAMPLED REACH Check ALL that apply METHOD STAGE BOAT 1st sample pass 2nd WADE HIGH   LLINE UP   OTHER SNORMAL				
1.2 km	MODIFIED / DIPPED OUT / NA EEN LEVEED / ONE SIDED  / LITTER RELOCATED / CUTOFFS NCE ODOR MOVING-BEDLOAD-STABLE E DEPOSITS ARMOURED / SLUMPS SOS/OUTFALLS ISLANDS / SCOURED IMPOUNDED / DESICCATED	A	EJ ISSUES WWTP / CSO / NPDES / INDUSTRY HARDENED / URBAN / DIRTAGRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	FJ MEASUREMENTS  \$\overline{x}\$ width \$\overline{x}\$ depth \$\overline{x}\$ bankfull width bankfull \$\overline{x}\$ depth  WID ratio bankfull max. depth floodprone \$x^2\$ width entrench, ratio  Legacy Tree:
Stream Drawing:				
Flow ->				
		open pas	4ure	
100				
- (C1 010)	0			
Riffle grave	Riffle		Diffle	p: 541,
pool of of	Riffle	Riffle	Riffle	Rittle
	KIHIP	",	p001	Rittle
	RIHITE Pasi	",	po à 1	Rittle

•.

### **ChioEPA**

### Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

NHEI Score: 475	HEI	Score:	475
	\UEI	Saarar	1175

Stream & Location:	Burk ( ree	-1/25t, 5, 2	2. 79RM:_	Date: <u>OFI QYI</u> 0	7
		Scorers Name &		Carr-Anill	
River Code:	STORET #:	Lat./Long.:		·	_
1] SUBSTRATE TYPE Poor (check ONLY Two substrate T	OL RIFFLE TYPE YPE BOXES; estimate % or note:  [	every type present)	ORIGIN Check ONE (Or 2 ESTONE (I)	QUALITY 8 average)  DHEAVY-2	
O BOULDER 191 / COBBLE 181 / A	DESANDIGIED DE BEDROCK [5]	OWEI OHAR	S [1] SIL FLANDS [0] SIL IDPAN [0] CDDS	MORMAL [0]	strate
NUMBER OF BETTER (2	(Score natural substr	ates; Ignore sluge   RIP/ om point-sources)   LAC   SHA	RAP [0]		dmum 20
- Steem was	s dev 13	. □ <u>.co</u>	(C FINES (-2)	.*	
TI METDEAM COVED	ndicate presence 0 to 3: D-Absent	: 1-Very small amounts or	if more common of man	inal AMOUNT	
quality; 3-Highest quality in midlameter log that is stable, we undercut BANKS [4]	uallty; 2-Moderate amounts, but r odelate or greater amounts (e.g., all developed rootwad in deep / fas POOES :: R TATION [1] ROOTWAD	it water, or deep, well-defin	ned, tunctional pools.	Check ONE (Or 2 & average)  EXTENSIVE 75% [1]  MODERATE 25-75% [7]  SPARSE 5-25% [3]	
/ SHALLOWS (IN SLOW	WATER) [1] O BOULDERS		WOODY DEBRIS [1]	□ NEARLY ABSENT <5% [1]	Ī
Comments	Z			> Maximum (	5
	WELS ACY				
SINUOSITY DEVEL	OGY Check ONE In each categ OPMENT CHANNELI ELLENT (7) NONE [6]	ZATION ST	ABILITY GHIDE	•	
☐ MODERATE BY ☐ GOOD FAIR ☐ POO Comments ∠	RITE RECENTORN		ODERATE [2] DW (1)	Channel	3
-Stream	Wax dru	, 		20	
RIPARIAN WIDTH		IN QUALITY, P	ACH BANK (Or 2 per ba	L R EROSION	rafill
☐ MODERATE 10-50m [3] ☐ NARROW 5-10m [2] ☐ VERY NARROW 5-5m [	D D FOREST, SWAMP (3) D D SHRUB OR OLD FIELD D D RESIDENTIAL PARK, I D D FENCED PASTURE (1)	VEW FIELD (1) ED CO	NSERVATION TILEAR RBAN OR INDUSTRIAL EN PASTURE ROWC NING / CONSTRUCTION	FOR TO HEAVY SEVER	
Omments	Indicate pi	edominant land use(s) past	1100m riparian.	Z Riparian Maximum 10	3
5] POOL / GLIDE AND R	RIFFLE / RUN QUALITY CHANNEL WIDTH	CURRENT	VELOCITY	Recreation Potential	
Check ONE (ONLYI)  ☐ 1m [6] ☐ 0.7.1m [4]	Check ONE (Or 2 & everage) POOE WIDTH REFFLE WIDTH IT POOL WIDTH REFFLE WIDTH IT POOL WIDTH REFFLE WIDTH IT	Check ALL   Check ALL   Check ALL   Check ALL   Check ALL		Property ownership Private Public Pool Depth	
□ 0.2-0.4m [1] □ < 0.2m [0] ≥	in was dry	ESLOW[1]	VERY FAST [1] - pools and riffles.	Pool / Current Maximum 12	3
Indicate for function of riffle-obligate spe		it be large enough t ONE (Or 2 & average). FLE / RUN SUBSTR			c=0]
BESTAREAS 10cm [2] BESTAREAS 10cm [1] BESTAREAS 5 to military [metric=0]	JMAXIMUM > 50cm [2] ☐ STA MAXIMUM < 50cm [1] ☑ MOD	BLE (e.g., Cobble; Bould STABLE (e.g., Large G TABLE (e.g.; Fine Grave) /	raver) [1] [ Li .Sandi Tili / [2]	NONE [2]	3
	ml)   VERY LOW LOW [2-4]		L:(30) %GLI	DE: ZO Gradient	
	MODERATE [6-10]	ที่ %RUN	l: Zw %RIFFL		
EPA 4520	٠٠٠ ١٠٠٠	don de	The Carl	06/28/05	3

Note stream was dry during Keldwolk.

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	· · · ·	20129	WSV115W	And the second s	A before any on the state of th	· · · · · · · · · · · · · · · · · · ·
1000		19thred worn	an load	9H'21		
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	NAMO SOLINATA MANA SOLINATA MA	}	124.54	12MM MAS y)	0901	Stream Drawing:
	F] ISSUES  WWTP / CSO / NPPES / INDUSTRY  HARDENED / URBAN / DIRTAGRIME  CONTAMINATED / LANDFILL  BANY - EROSION / SURFACE  FALSE BANK / MANURE / LAGOON  WASH H <sub>2</sub> O / TILE / H <sub>2</sub> O / TABLE  ACID / MINE / OUARRY / LAGOON  NATURAL / WETLAND / STAGUANT  NATURAL / WETLAND / STAGUANT  PARK / GOLF / LAWN / HOME  PARK / GOLF / LAWN / HOME	Circle some & COMMENT	E] MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE / HISTORIC / BOTH / NA SPRAY / SUAGE / BUED ACTIVE / HISTORIC / BOTH / NA ILEVEED / ONE SIDED ACTIVE / HISTORIC / BOTH / NA ILEVEED / ONE SIDED ACTIVE / HISTORIC / BOTH / NA ISLANDS / SCHORED ACTIVE / HISTORIC / BOTH / NA ISLANDS / SUAGE ACTIVE / HISTORIC / BOTH / NA ISLANDS / SUAGE ACTIVE / HISTORIC / BRAINAGE	CSOSSOSONIAVELS CSOSSOSONIAVELS CSOSSOSONIAVELS CSOSSOSONIA CHARLICA COSOSSOSONIA COSOSSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSOSONIA COSOSSONIA COSOSSOSONIA COSOS	adina Gayaya Dayayaran Dayayaray Bonoruo\Atsiv⊡	CANOPY   C
	, Concerns, Accoss directions, olc.	suchenesdo golitanes Medic	Frequency, Fiezzads, Polential, C		Conmant RE: Rocration C	Check ALL that apply

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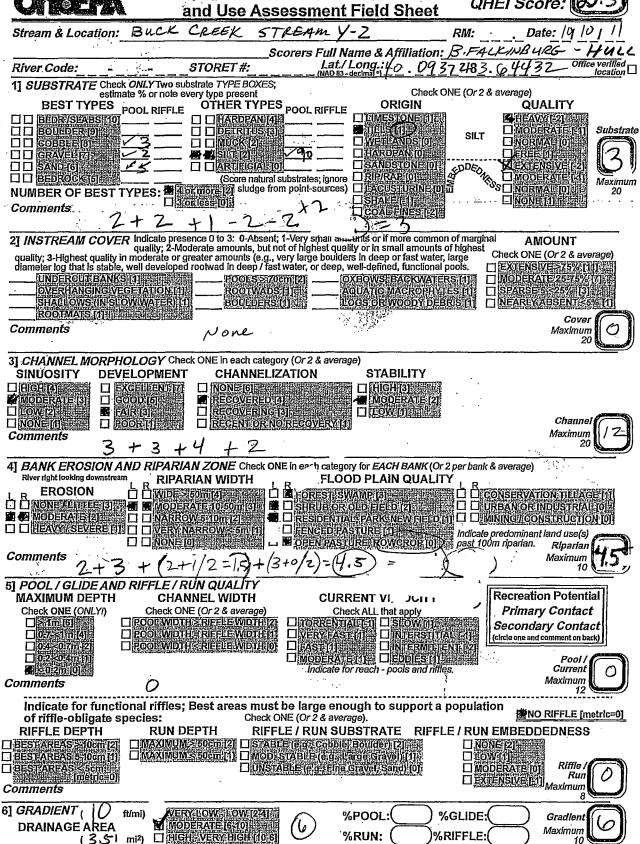
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STREAM Y-Z

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Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

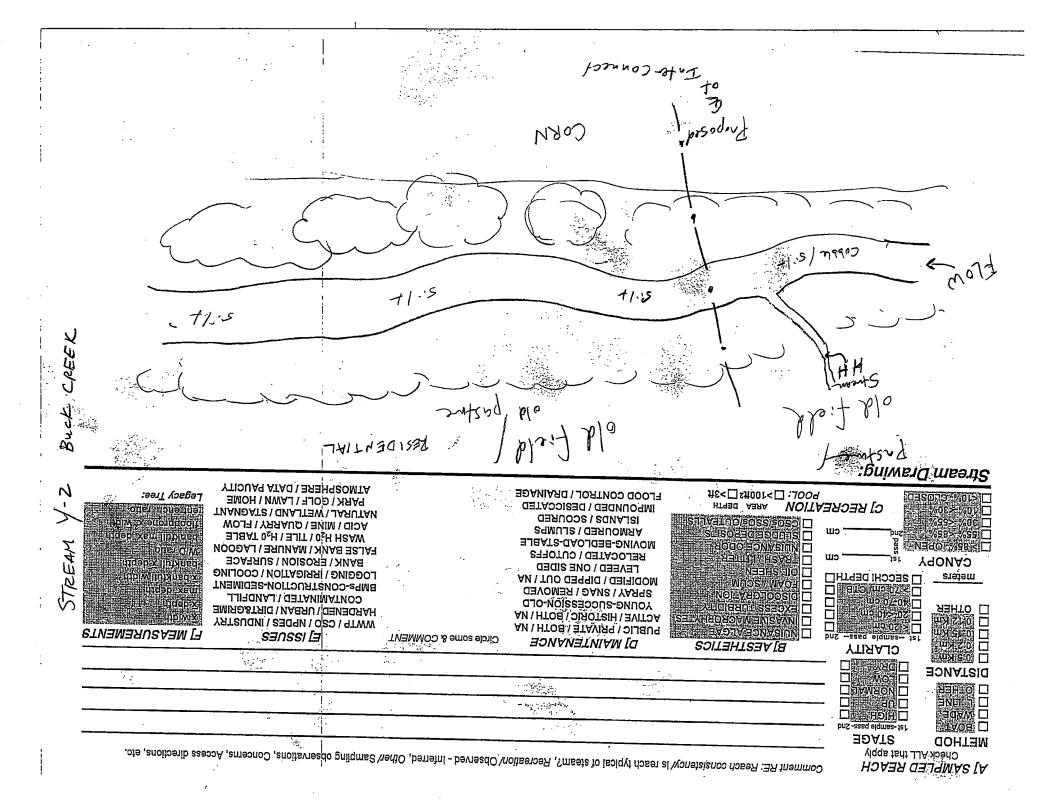
QHEI Score: 05.



%RUN:

(3 l mi<sup>2</sup>)

10



photos 10?

# designated owt

STREAM Y-3

**Onio EPA** 

Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 22

Stream & Location:	BUCK	CREEK			RM: D	Pate:/0/10  11	
_	· · · · · · · · · · · · · · · · · · ·	S	corers Full I	Name & Affiliation:	3. FALK IN	BURG	
River Code: -	- <i>S</i> 7	ORET#:	Lat.	/Long.:	/8	Office verified location	]
1] SUBSTRATE Check C	NLY Two substr	ate TYPE BOXES			NE (Or 2 & average)		
	e % or note even OOL RIFFLE	OTHER TYPE	S DOOL DIEEL	ORIGIN		UALITY	
D D BUDRISUABSIMO		□ HARDPANI4	嗯	L LIMESTONE [1]		VX[12] = 00	
□□ BOUEDER 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<del></del> ,— 📙	☐ DETRITUS 13	喔	WETEANDS TO		DERATE [1] Substrat	te N
		HSICT 2	857	☐ HARDPAN TOTAL	□FRE		
EE SAND 61	0	☐ ARTIEIGIAE [	TT-1			ENSIVETŽI DERATE (1)	"
NUMBER OF BEST TY	PFS·□	Score natural fore [2] sludge fro	l substrates; ignor om point-sources	) DIACUSTURINE TO E	Not	Maximum MAL IO 20	n.
Comments		55 [0]			□ Nor		<del></del>
8+2 +0	+1-	2-2	= 7	LICUALETINES (IZ)			
21 INSTREAM COVER	Indicate presenc	e 0 to 3: 0-Absen	t; 1-Very small an	nounts or if more common	of marginal A	MOUNT	
quality; 3-Highest quality in n	noderate or grea	ter amounts (e.g.,	very large bould	ality or in small amounts of ers in deep or fast water, i	arge Check ON	IE (Or 2 & average)	
diameter log that is stable, w	ell developed ro	otwad in deep / fas —— POOES ≳7		, well-defined, functional po OXBOWS:BACKWATER	ools. DEXTEN	SIVE>75% [10] ATE 25-75% [7]	
OVERHANGING VEGI		ROOTWAD	Strips	AQUATIC MACROPHYTE		E6 25% [3]	1,
SHALLOWS (IN SLOV ROOTMATS [1]		BOULDERS		LOGS OR WOODY DEBR	Transa - carreave	YABSENT[<5%[1]	, , , , , , , , , , , , , , , , , , ,
Comments	ROUTE REPORTED				Absert	Cover O	
	· / .					20	)
3] CHANNEL MORPHO	LOGY Check C	NE in each categ	ory (Or 2 & aver	age)	<del></del>		
	LOPMENT	CHANNEL	ZATION	STABILITY		•	
	ELLENTIVI DD 151	NONE [6]		☐ HIGHI3]			
TOW [2]		RECOVERING					٠.
Comments	RIDE E	RECENTION	O'RECOVERY [	0		Channel 7	144
2+1	+(3+1)	(2 = )2	+2			20	}
4] BANK EROSION AN							
River right looking downstream  EROSION	RIPARI <i>A</i> R RIPARIA R RIPARIA	N WIDTH	R	OD PLAIN QUALITY	L.R		
<u> </u>	MODERAT	E 10:50m (310) [		COLD FIELD IZIX	CONSERVAL URBAN OF	INDUSTRIALION	
MODERATE 12		5/10m121	]   RESIDENT	ALEPARKENEW FIELD IT		DISTRUCTION (D)	,
☐ ☐ HEAVY//SEVERE [7]	□ NONE (0)	ROW ₹5mm [	J∐GPEN PAS	ASTURE [1]	Indicate predomina past 100m riparian	1.0	
Comments			- Mannetha	Participal (1925)	g padi room npanan	Riparian ( / ) Maximum ( / )	18
	1 +	(	<u>.</u>			10	
5] POOL / GLIDE AND F MAXIMUM DEPTH		<i>I QUALITY</i> EL WIDTH	CHE	RENT VELOCITY	Recreat	ion Potential	
Check ONE (ONLYI)		Or 2 & average)	Cl	neck ALL that apply	- 11	ry Contact	
		RIFELE WIDTH 12 RIFFLE WIDTH 11	TORRENT	ialej Uslownie	Second	lary Contact	
□04×07m21 □	POOLWIDTH<	RIEFLE WIDTH 10	DEAST	TIME OINTERSTITA OINTERNIETE	(circle one ar	nd comment on back)	
□02<04mH		and the same and the first that And	□MODERA	EDDES (1)		Pool /	
Comments	De	J	indicate .	for reach - pools and riffles		Current Maximum	
		L				12	
Indicate for function of riffle-obligate spe			t be large en ONE ( <i>Or 2 &amp; ave</i>		opulation UN	O RIFFLE [metric=0]	
RIFFLE DEPTH	RUN DEP	TH RIFE	LE / RUN SI	JBSTRATE RIFFLE	E / RUN EMBED	DEDNESS	
	_MAXIMUM≯® _MAXIMUM>®	Ocm (2) STAE	LE (e.g. Cobbl	e/Boulder)[2]::: Large Gravel)[1]::	UNONE (2)		
<b>個</b> BEST AREASI Som				Gravel; Sand) [0]	☐ LOW [1] ☐ ☐ MODERATE [	Riffle/	
Comments	~ ~ n.v	1		m and the state of	EXTENSIVE		
.10 . 1	Dry					8	
, ,,		OW. LOW [24] ATE (6-10)		%POOL:(DRY) %	GLIDE:(DRY)	Gradient	772
DRAINAGE AREA		VERY HIGH (10-6		%RUN: ( Dጮy)%R	IFFLE: DRY)	Maximum 10	20.85
EPA 4520			<del></del>			06/16/06	

<i>P</i> LLEBA	Qualitative Habi	tat Evaluation Ind	ex QHEI Sc	22
AIRCIM		sment Field Shee	; L	
	CREEK - STR.			ate:/2]/4_]//
EVER POWER  River Code:	Score STORET#:	rs Full Name & Affiliatio	on: <u>B. FACKINB</u> 10	Office verified —
11 SUBSTRATE Check ONLYTwo	<del></del>	Lat./Long.: (NAD 83 - declimal °)	10	location □
estimate % or note	every type present		ck ONE ( <i>Or 2 &amp; average</i> ) Qu	JALITY
□□ BIOR SPARS TO				WELS
			SILI DIOR	ERATE III Substrate
GRAVELIZARE / 25		ZO DHARDEANGOL		
□□ BEDROCKETES	(Score natural substr	ates Ignore URPRARIOTS		ERAIL III Maximum
NUMBER OF BEST TYPES:	rockession		DEON DEON DE NOR	MAGUI 20 EDIS
7+4+2+1+(-1)	40 = 13	O COALERNES		
2] INSTREAM COVER Indicate programme qualific 2-N	esence 0 to 3: 0-Absent; 1-Ve	ry small amounts or if more com righest quality or in small amou	nte of nimpeet :	MOUNT
quality; 3-Highest quality in moderate or diameter log that is stable, well develop	greater amounts (e.g., very la ed rootwad in deep / fast wate	arge boulders in deep or fast wa er, or deep, well-defined, functio	ater, large Check ON mal pools.	E (Or 2 & average)
UNDERGUEBANKS HE SEE	POOLS > 70cm	AOXBOWS-BACKW	VIERSIO I MODER	ATTE 257/57/67/16 55 - 257/6 EN 25
SHALLOWS (INSEOW WATER)				PABSENTE 57/3[1]
Comments		•		Cover Maximum 2
1.71				20
3] CHANNEL MORPHOLOGY CONTROL SINUOSITY DEVELOPMEN				
	I U NONEIGE .			
MODERATE BY GOODISE 2				Channel
Comments EQUALITY	REGENTIORNORE	•	• • • •	Channel Maximum 5
chandisel drainey	e ditch	2+1+1+1		20
4] BANK EROSION AND RIPAR River right looking downstream RIPA	VIAN ZONE Check ONE in a ARIAN WIDTH	each category for <i>EACH BANK</i> FLOOD PLAIN QUA		1
LR EROSION		ores eswampibiles de	ь d Liconserva	TIONALE AGE 101
□ □ MODERATE DE SE □ □ NARI		ESIDENTIAL PARK NEW HIS	DO DO DINING C	industrialioje Destructioniui
		engedieasture (1912 2013) Ben Pasture Rowgroet	Indicate predomina	nt land use(s) Riparian
Comments		di milina and dispersional desire de la mai de la mai de la manera de la manera de la mana de la mana de la ma La manara de la manara de la mai de la mai de la mai de la manara de la manara de la manara de la manara de la	and American	Maximum /
1 + 0 + 0 5] POOL / GLIDE AND RIFFLE /	RUN QUALITY			
MAXIMUM DEPTH CHA	ANNEL WIDTH	CURRENT VELOCIT	• 11	ion Potential
	ONE (Or 2 & average)	Check ALL that apply regression ☐ Stoward	Second	lary Contact
		Verygasteda Cinters Fasigede Comperm	[In ENT 2]	nd comment on back)
Comments 2 + 2		Moderate has Dieddies		Pool / Current
	— □[ + / +			
Indicate for functional riffles	+   †	Mobilization   Indicate for reach - pools and large enough to suppor	riffes.	Current Maximum 12
of rifflė-obligate species:	+   † ; Best areas must be I Check ONE (	Mobilization II poblics Indicate for reach - pools and arge enough to suppor Or 2 & average).	riffes.	Current Maximum 12  IO RIFFLE [metric=0]
of riffle-obligate species: RIFFLE DEPTH RUN □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	; Best areas must be I Check ONE (I DEPTH RIFFLE /	Moderant III □ Educate for reach - pools and arge enough to suppor Or 2 & average).  RUN SUBSTRATE RIF	t a population  FLE / RUN EMBED	Current Maximum 12  IO RIFFLE [metric=0]
of riffle-obligate species: RIFFLE DEPTH RUN □ SESTAREASS STORMED □ MAXIMU □ BESTEAREASS SEEN	Figure 1 State   Check ONE (Check	Mobel And the Mobel Service Indicate for reach - pools and arge enough to suppor Or 2 & average).  RUN SUBSTRATE RII	t a population  FILE / RUN EMBED  ONE  ONE  ONE  ONE  ONE  ONE  ONE  O	Current Maximum 12  IO RIFFLE [metric=0] DEDNESS  Riffle /
of riffle-obligate species: RIFFLE DEPTH RUN  BESTAREASS TOTAL MAXIMU  MAXIMU	Figure 1 State   Check ONE (Check	Mobel Angles ☐ Eobies Indicate for reach - pools and arge enough to suppor Or 2 & average).  RUN SUBSTRATE RII  19 (Gobble Boulder) (2).	t a population  FILE / RUN EMBED	Current Maximum 12  IO RIFFLE [metric=0] DEDNESS  Riffle /
of riffle-obligate species: RIFFLE DEPTH RUN  BESTAREASS TORM 2  BESTAREASS Som  Comments  G] GRADIENT ( 40 ( ft/mi)   Times	Fig. 30cm 2 Check ONE (Check ONE	Mobel Angles ☐ Eobies Indicate for reach - pools and arge enough to suppor Or 2 & average).  RUN SUBSTRATE RII  19 (Gobble Boulder) (2).	t a population  FILE / RUN EMBED  ONE  ONE  ONE  ONE  ONE  ONE  ONE  O	Current Maximum 12  IO RIFFLE [metric=0] DEDNESS  Riffle / Run Maximum

above 40 ft/mi = 4 points

EPA 4520

06/16/06

### Primary Headwater Habitat Evaluation Form CTREAM AA HHEI Score (sum of metrics 1, 2, 3): 54

OITE NAME	5   CEAN AN	
SHE NAME	SITE NUMBER AA RIVER BASIN BUCK Creek DRAINAGE AREA (mi²) 0.2	6
LENGTH OF	STREAM REACH (ft) 200 LAT. 40.1319 LONG.83.6301 RIVER CODE RIVER MILE	
DATE 6	19/2011 SCORER B. FALKINBULG-COMMENTS BUCK Creek	
,	omplete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct	tions
STREAM	CHANNEL (III NONE / NATURAL CHANNEL) PRECOVERED PRECOVERING RECENTION NO RECOVER ATIONS: Channel Tell - cleaned ant 12 - 6 months again	RY
1. SU	BSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	or objection in the second of	HHEI Vetric
	BLDR SLABS 116 bist 1, 200 / 25	oints
	BOULDER (>256 mm) [16 pts] 2	ubstrate
	BEDROCK [16 pt] FINE DETRITUS [3:pts]  COBBLE (66-256 mm) [12 pts] 15 DW CLAY or HARDPAN [0 pt]	Max = 40
	GRAVEL (2:64 mm), 19 pts]	9
	SAND (<2 mm) [6 pts] /e	/.
DIA	Total of Percentages of Slabs, Boulder, Cobble, Bedrock 17%. (A) 3	A+B
	TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Max	kimum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	ool Depth
eva	luation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	lax = 30
	Centimeters 120 pts; 5 cm 10 cm (15 pts)	🛚 سے ا
	22.5 cm [25 pts]	/ )
co	MMENTSMAXIMUM POOL DEPTH (centimeters):	
3. BAI	NK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfuli
<b>4</b> ≥ 4 c	· 大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大大	Width ⁄iax=30_
d 🦓	m 30 m (2 9 7 4 8) [20 pts]	70
	MMENTS AVERAGE BANKFULL WIDTH (meters)	50
	ALEMAN SEL WISH (Section)	
	This information <u>must</u> also be completed	•
•	RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY	. •
۲۰.	RIPARIAN WIDTH FLOODPLAIN QUALITY  R. (Per Bank) LR (Most Predominant per Bank) LR	. 74
	☐ Wide >10m ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage	
	FIEID	
	☐ Narrow <5m ☐ ☐ Residential, Park, New Field ☐ ☐ Open Pasture(Row) Crop	
	FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
<b>49</b>	Stream Flowing	
٠	Subsurface flow with isolated pools (Interstitial)  COMMENTS  Dry channel, no water (Ephemeral)	
	SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
. 📮	None	
J	0.5	
STR	EAM GRADIENT ESTIMATE  10/100 ft)	
ب الظلار (U,5)	Stoom Land to moderate the moderate to the mod	

WH Name: Buck Creek Distar WH Name: Distar MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA.  Guadrangle Name: North Lewis bury NRCS Soil Map Page:  Y: Champaign Township / City: Markan  MISCELLANEOUS Flow Conditions? (Y/N): Date of last precipitation: 7  Search Quadrangle Name: 7  MISCELLANEOUS Flow Conditions? (Y/N): Markan  Canopy (% open): 7  Canopy (% open): 7  Canopy (% open): 7  Information: 9  PH (S.U.) 9  PH (S.U.) 9  PH (S.U.) 10	CLEARLY MARK THE SITE LOCATION  Y NRCS Soil Map Stream Order  Twp. / Wba.  In the results) Lab Number:  Conductivity (µmhos/cm)  ans in this area are  was Chanelized w/in  all voucher samples must be labeled with the adwater Habilat Assessment Manual)  cher? (Y/N)
WH Name: Buck Creek Distar  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA.  Requadrangle Name: North Lewis bury NRCS Soil Map Page: York May 1, 3 March Township / City: March NRCS Soil Map Page: York May 1, 3 March NRCS Soil Map Page: York May 1, 3 March NRCS Soil Map Page: York May 1, 3 March NRCS Soil Map Page: York May 1, 3 March NRCS Soil Map Page: York May 1, 3 March NRCS Soil Map Page: York NRCS S	all voucher samples must be labeled with the advater Habitat Assessment Manual)  cher? (Y/N)
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA.  Quadrangle Name: No phy Lewis bury NRCS Soil Map Page: NRCS Soil Map Page: Y: Champa; March Township / City: Nar/S n Township	CLEARLY MARK THE SITE LOCATION  Y NRCS Soil Map Stream Order  Twp. / Wba.  In the results) Lab Number:  Conductivity (µmhos/cm)  ans in this area are  was Chanelized w/in  all voucher samples must be labeled with the adwater Habilat Assessment Manual)  cher? (Y/N)
Record all observations. Voucher collections optional. NOTE:  BIOTIC EVALUATION  Township / City:  MISCELLANEOUS  Flow Conditions? (Y/N):  Date of last precipitation:  Canopy (% open):  Canopy (% open):  Canopy (% open):  (Note lab sample no. or id. and attacknessures:  Temp (°C)  Dissolved Oxygen (mg/l)  PH (S.U.)  Sampling reach representative of the stream (Y/N)  If not, please explain:  Street  Dissolved Oxygen (mg/l)  PH (S.U.)  PH (S.U.)  Dissolved Oxygen (mg/l)  PH (S.U.)  PH (S.U.)  PH (S.U.)  Dissolved Oxygen (mg/l)  PH (S.U.)	All voucher samples must be labeled with the adwater Habitat Assessment Manual)
MISCELLANEOUS  Flow Conditions? (Y/N): Date of last precipitation: ?	antity:
MISCELLANEOUS  Flow Conditions? (Y/N): Date of last precipitation: ?	antity:
MISCELLANEOUS  Flow Conditions? (Y/N): Date of last precipitation: ?	antity:
canopy (% open):	ans in this are and whin the advater Habilat Assessment Manual)
canopy (% open):	ans in this are and channelized with the advater Habilat Assessment Manual)
Samples collected for water chemistry? (Y/N):	ans in this area and was channelized with the adwater Habitat Assessment Manual)
Samples collected for water chemistry? (Y/N):	ans in this area and was channelized with the adwater Habitat Assessment Manual)
sampling reach representative of the stream (Y/N) 1 If not, please explain: 5+ceps+ty channel: ced, however, this Segment is a stream of the s	all voucher samples must be labeled with the adwater Habilat Assessment Manual)
sampling reach representative of the stream (Y/N) 1 If not, please explain: 5+ceps+ty channel: ced, however, this Segment is a stream of the s	all voucher samples must be labeled with the adwater Habilat Assessment Manual)
BIOTIC EVALUATION  med? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: ID number. Include appropriate field data sheets from the Primary Heat been proposed (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observeds Regarding Biology: Cray frish & Sort & DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHINGLING Important landmarks and other features of interest for site evaluation and a narr	all voucher samples must be labeled with the adwater Habitat Assessment Manual)
BIOTIC EVALUATION  med? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: ID number. Include appropriate field data sheets from the Primary Heat been proposed (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observeds Regarding Biology: Cray frish & Sort & DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHINGLING Important landmarks and other features of interest for site evaluation and a narr	all voucher samples must be labeled with the adwater Habitat Assessment Manual)
BIOTIC EVALUATION  med? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: ID number. Include appropriate field data sheets from the Primary Heat been proposed (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observeds Regarding Biology: Cray frish & Sort & DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHINGLING Important landmarks and other features of interest for site evaluation and a narr	all voucher samples must be labeled with the adwater Habitat Assessment Manual)
If Yes, Record all observations. Voucher collections optional. NOTE: ID number. Include appropriate field data sheets from the Primary Heat bserved? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed Regarding Biology: Capfrish of Survey.  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHINGLING Important landmarks and other features of interest for site evaluation and a narr	adwater Habitat Assessment Manual)
If Yes, Record all observations. Voucher collections optional. NOTE: ID number. Include appropriate field data sheets from the Primary Heat bserved? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed Regarding Biology: Capfrish of Survey.  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHINGLING Important landmarks and other features of interest for site evaluation and a narr	adwater Habitat Assessment Manual)
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or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Obse ents Regarding Biology: Cayfish absorbed.  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHING LINE IMPORTANT LANGUAGE IMPORTAN	cher? (Y/N)
or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Obse ents Regarding Biology: Cayfish absorbed.  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACHING LINE IMPORTANT LANGUAGE IMPORTAN	nied2 (V/N) Voucher2 (V/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH	· · · · · · · · · · · · · · · · · · ·
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH	
include important landmarks and other features of interest for site evaluation and a narr	
include important landmarks and other features of interest for site evaluation and a narr	(This must be completed):
	ative description of the stream's location
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**Commission of Ohio Docketing Information System on** 

3/19/2013 4:38:20 PM

in

Case No(s). 13-0360-EL-BGA

Summary: Application Appendix C - Surface Water Report (235-278) electronically filed by Mr. Michael J. Settineri on behalf of Buckeye Wind LLC