RESPONSES TO OPSB STAFF DATA REQUESTS/REQUESTS FOR INFORMATION

Hog Creek Wind Farm LLC,

Case Nos. 16-1422-EL-BGA and 16-1423-EL-BGA

Responses E-mailed to Staff on September 23, 2016

1. Please provide the jurisdictional determination from the Army Corps of Engineers on streams and wetlands which would be impacted.

<u>Response</u>: A formal jurisdictional determination was not requested from the U.S. Army Corps of Engineers (USACE) for this Project, but in previous conversations, the USACE indicated that the ditches/streams in the Project area would be considered jurisdictional. In an email dated January 21, 2011, the USACE confirmed that the ditch crossings required for the Project could be covered under Nationwide Permit 12, but a pre-construction notification would not be required. See attached correspondence (Attachment 1).

Additionally, Tetra Tech has reviewed the 6 ditches and 1 wetland that would be impacted by the current Project layout, and recommends that these features may also be considered jurisdictional based on the previous guidance provided by USACE.

2. Please provide shapefiles of the delineations any jurisdictional streams and/or wetlands which will be impacted.

Response: Seven (7) waterways will be impacted by the current Project layout. A zip file labeled "Wetlands_092316" was provided to Staff on September 23, 2016. Two of these waterway impacts are access roads crossing ditches with culverts, and the rest will be temporary crane walks, or impacts that will be avoided with small adjustments (to be provided to you next week).

The zip file provided to Staff included two shapefiles. The one called "Impacted wetlands" includes the full surveyed area for each wetland that would be impacted. The file called "wetlands impacts area" shows the actual area of estimated impacts to each waterway (the 100-foot culverts).

3. Please provide resource quality evaluations (ORAM, QHEI, and HHEI) on any jurisdictional streams and/or wetlands which will be impacted.

Response: See attached evaluation sheets (Attachment 2).

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RESPONSES TO OPSB STAFF DATA REQUESTS/REQUESTS FOR INFORMATION

Hog Creek Wind Farm LLC,

Case Nos. 16-1422-EL-BGA and 16-1423-EL-BGA

Updated Response to Staff Data Request No. 12:

12. Please update the status of Cultural Resources efforts (field work, studies, coordination, etc.) regarding the Amended projects.

<u>Response</u>: The Applicant's consultant, Tetra Tech, has contacted the Ohio Historic Preservation Office to provide an update on the Amended projects, confirm survey methods, and confirm the Applicant's intent to honor the existing Memorandum of Agreement (MOU). On September 8, 2016, the Applicant contacted Linda Iams, director of the Hardin County Historical Museum to confirm the intent to honor the MOU.

Tetra Tech has completed a pedestrian survey for archaeological resources and shovel testing is currently underway on approximately 25 acres where surface visibility was below 50 percent. The results of the shovel testing will be provided in approximately two weeks, and a report will be provided as soon as it is complete.

<u>Updated Response</u>: Attached is a letter from Hardin County Historical Museum dated September 30, 2016 stating there are no additional history and architectural investigations are need (Attachment 3).

2

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Attachment 1

Irwin, Adam

From: Wetzel, Paul F LRB [Paul.F.Wetzel@usace.army.mil]

Sent: Friday, January 21, 2011 11:31 AM

To: Mike Sponsler Cc: Almady, Joseph

Subject: RE: JW - Hardin North (BHE 1865.004) (HOG Crossings)

Attachments: OH NWP12.doc; Application Sample Drawings.pdf; Application Drawing Requrements.doc;

Application Drawing Requrements.doc; Copy of eng4345a.pdf; Preliminary JD form.doc

Mike,

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Certain types of excavation activities are defined as discharges of dredged or fill material when they occur in waters of the United States. For instance, land clearing using mechanized equipment, ditching, channelization and other types of excavation when performed in such waters, including wetlands, would likely be regulated under Section 404 of the Clean Water Act.

I am responding to the items in your email below with the following comments: #1curI con

#2 - For linear projects, the single and complete project (i.e., single and complete crossing) will apply to each crossing of a separate water of the United States (i.e., single waterbody) at that location. Therefore a single and complete project is each ditch crossing authorized under NWP 12.
#3 - Temporary crossings that involve the placement of fill in a regulated ditch would be authorized under NWP 12.

#4 - Directional bore under ditches with upland staging is not a regulated activity since there is no discharge of fill in the waterway. In addition to this, the placement of mats in the waterway to facilitate crossing would not require a permit either, since this is a structure not a fill. Spanning a ditch with a structure top of bank to top of bank in order to facilitate a vehicle crossing would not involve a fill and is not regulated either.
#5 - There is no need to conduct another site visit since the additional ditch crossings are pretty much identical to the ones I already observed.

Preconstruction notification requirements are as follows (taken from the current NWP 12):

"Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)"

"Nationwide Permit 12 Specific Regional Condots:

1

- a. Pre-Construction Notification: The permittee must notify the District Engineer in accordance with the "Pre-Construction Notification" Nationwide Permit General Condition for the following activities:
- * All work in waters of the U.S., including special aquatic sites, associated with utility line substations;
- * All stream work (perennial, intermittent, and ephemeral) associated with foundations for overhead utility line towers, poles, and anchors;
- * Impacts greater than 1/10 acre in waters of the US, including wetlands, associated with access roads;
- * All work associated with temporary construction, access, and dewatering activities in Section 10 waters, perennial streams, and wetlands. The PCN must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.
- * All impacts to forested wetlands; and
- * All impacts to shrub/scrub wetlands."

Also, impacts to endangered species or the presence of a historic property would trigger a PCN requirement. However, it is my understanding that there are no ESA or historic property resources within the project area for each crossing.

It doesn't appear that any of the ditch crossings would trigger a PCN requirement.

I have attached a copy of NWP 12 as well as an "application package" for your information and future use. If you have any questions, please feel free to contact me.

Paul Wetzel
Biologist
U.S. Army Corps of Engineers, Buffalo District
Oak Harbor Field Office
240 Lake Street, Unit D
Oak Harbor, Ohio 43449
(419) 898-3491
Fax (419) 898-4292

----Original Message----

From: Mike Sponsler [mailto:msponsler@bheenvironmental.com]

Sent: Wednesday, January 19, 2011 11:54 AM

To: Wetzel, Paul F LRB Cc: 'Almady, Joseph'

Subject: RE: JW - Hardin North (BHE 1865.004) (HOG Crossings)

Hi Paul,

I am following up to confirm our phone call this morning regarding the Hog Creek Wind farm project.

My understanding is as follows:

- 1. Hog Creek II will be under the same interpretation as Hog Creek I because site conditions are the same or similar.
- 2. Each crossing is a separate authorization.
- 3. Temporary crossing for the crane do not require a PCN provided the temporary fill is removed quickly after the crane crosses.
- 4. Cables placed under streams that do no involve any fill in the stream do not require authorization.
- 5. You do not need to make an additional site visit.

Please confirm that my understanding is correct.

----Original Message----From: Mike Sponsler Sent: Monday, January 03, 2011 10:50 AM To: 'Wetzel, Paul F LRB' Cc: 'Almady, Joseph' Subject: RE: JW - Hardin North (BHE 1865.004) (HOG Crossings) Hi Paul, You saw all of the Hog Creek I area. Hog Creek II is very similar. The only ditch crossings in Hog Creek II will be cables...no access roads will cross ditches in Hog Creek II. So I am not sure a site visit is necessary; however if you wish to make another visit to answer our questions, I can be available. The questions are below: Thanks Mike 1. Can you confirm that Hog Creek II will be under the same interpretation as Hog Creek I i.e. NWP 12, with no PCN? 2. Is each permanent ditch crossing considered a separate authorization? 3. It is assumed the temporary crane crossings of these ditches are under NW12 conditions. Can you confirm? ----Original Message----From: Wetzel, Paul F LRB [mailto:Paul.F.Wetzel@usace.army.mil] Sent: Thursday, December 30, 2010 11:52 AM To: Mike Sponsler Subject: RE: JW - Hardin North (BHE 1865.004) (HOG Crossings) Mike, When I reviewed the initial phase we viewed all the crossings and discussed NWP 12 requirements. Did I see these yet or are they additional stream crossings? Would you be available some time during the week of Jan. 17? am open the 18-20 if you wish to have a preappl. meeting on site. Thanks! Happy New Year! Paul Wetzel Biologist U.S. Army Corps of Engineers, Buffalo District Oak Harbor Field Office 240 Lake Street, Unit D Oak Harbor, Ohio 43449 (419) 898-3491 Fax (419) 898-4292 ----Original Message----From: Mike Sponsler [mailto:msponsler@bheenvironmental.com] Sent: Tuesday, December 21, 2010 3:26 PM To: Wetzel, Paul F LRB Subject: JW - Hardin North (BHE 1865.004) (HOG Crossings) Hi Paul, After a site visit a year and half ago, you sent out an email to Dane

Vandewater of our company, BHE Environmental, (see below). I am now taking

the lead on this issue and have some follow up based on recent discussion with our client. Below is some background to jog your memory about the project.

- 1. Our client, juwi Wind, LLC (formerly JW Great Lakes Wind) is adding a second phase to the Hog Creek Wind Farm (formerly Hardin County North Wind Farm). Hog Creek I is still not under construction. At the time you indicated no PCN is required (see below). The current project schedule has the construction of both phases at the same time in early 2012. The second phase, Hog Creek Wind Farm II, has similar wetland features compared to the first as it located on ditched farmland see (photos and maps). They have a possibility of only one additional ditch crossing proposed in this new area. juwi will address Hog Creek II in a second authorization. Can you confirm that Hog Creek II will be under the same interpretation as Hog Creek I, i.e. NWP 12, with no PCN?
- 2. Also in the email that Dane sent after the site visit, he asked confirmation on the following assumption: "It was assumed that the NWP 12 would be the NWP to authorize each individual road crossing. I am requesting confirmation of this determination by the USACE for these proposed crossings." It appears as though it was agreed each individual road crossing will be authorized separately under the NWP 12. Am I interpreting this correctly?
- 3. Finally, an item has come up which was not discussed on the field visit you made with Dane as we just became aware of it last week. During construction our client is planning to cross the ditches at several locations with a large crane which will involve temporary crossings, i.e. the fill will be removed after the crane passes over the ditch. It appears these activities would be authorized under NW12 based on the following permit condition language,

"This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate." AND

- "12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
- 13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate."

My questions are summarized below:

- 1. Can you confirm that Hog Creek II will be under the same interpretation as Hog Creek I i.e. NWP 12, with no PCN?
- 2. Is each permanent ditch crossing considered a separate authorization?
- 3. It is assumed the temporary crane crossings of these ditches are under NW12 conditions. Can you confirm?

I'll be glad to discuss with you, but I thought some background info to refresh your memory may be helpful before I call. Thanks Mike Sponsler Technical Director 5300 East Main St., Ste 101 Columbus, Ohio 43213

Office: 614.856.4680 ext. 4681

Direct Line: 856-4681 Fax: 614.856.4685 Cellular: 614.743.9977

Email: msponsler@bheenvironmental.com Web Address: www.bheenvironmental.com

----Original Message----

From: Wetzel, Paul F LRB [mailto:Paul.F.Wetzel@usace.army.mil]

Sent: Wednesday, July 15, 2009 2:55 PM

To: Dane Vandewater Cc: Mike Sponsler

Subject: RE: JW - Hardin North (BHE 1865.004)

Hi Dane,

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Certain types of excavation activities are defined as discharges of dredged or fill material when they occur in waters of the United States. For instance, land clearing using mechanized equipment, ditching, channelization and other types of excavation when performed in such waters, including wetlands, would likely be regulated under Section 404 of the Clean Water Act.

The ditches/tributaries that will be impacted are considered relatively permanent waterways subject to regulation under Section 404 CWA. Directional boring will not require a permit since there is no discharge of fill into a water of the US involved in this process. Culverting the RPW will require a permit, but this would be authorized under nationwide permit (NWP) 12 and there is no preconstruction notification (PCN) required, i.e. you do not need to submit an application to the Corps prior to commencing with work. I have attached a copy of NWP 12 for your information.

I am assuming that that the wetlands associated with the ditches are ORAM category 1 wetlands and the streams are not considered to be water bodies meeting the criteria set forth in Part 1A-2 (a thru c) of the NWP 401 water quality certification (Superior High Quality Waters, etc). This must be confirmed by the Ohio EPA prior to commencing with work. Work in category 3 wetlands or high quality resource waters as described in the 401 WQC would require an individual 401 WQC from OEPA. I copied Ben Smith from OEPA on this email for your convenience.

If you would like a formal verification letter sent to you must submit an

application. Otherwise, no further coordination with the Corps is required. If you have any questions, please feel free to contact me.

Thanks!

Paul,

Paul Wetzel
Biologist
U.S. Army Corps of Engineers, Buffalo District Oak Harbor Field Office 240
Lake Street, Unit D Oak Harbor, Ohio 43449
(419) 898-3491
Fax (419) 898-4292
----Original Message---From: Dane Vandewater [mailto:dvandewater@bheenvironmental.com]
Sent: Tuesday, July 14, 2009 9:24 AM
To: Wetzel, Paul F LRB
Cc: Mike Sponsler
Subject: JW - Hardin North (BHE 1865.004)

Thank you for your time at the Hardin County site visit last week.

I wanted to confirm our discussion at the Hardin County North project site for JW. During the site visit and our review of several of the ditch/stream/linear wetland areas it was determined that these areas would be considered regulated by the USACE. Due to the status of these areas as "jurisdictional" to the USACE, any impacts to these areas would be authorized by the use of the Nationwide Permits (NWP). It was indicated by JW that the impacts would likely be isolated to three to four road crossings. Cabling will be directionally drilled beneath the channels or brought up and over the ditches on transmission poles located outside the ditches, and therefore are non-jurisdictional. It was assumed that the NWP 12 would be the NWP to authorize each individual road crossing. I am requesting confirmation of this determination by the USACE for these proposed crossings.

Upon receipt of a typical plan and profile view of the road crossings, BHE will provide these to the USACE on JW's behalf along with a brief project discussion to request an NWP verification for the road crossings. We hope to have this information within the next few weeks. If the USACE determines, upon receipt of the NWP, that an NWP 12 will authorize the activities without a PCN due to the lack of temporary fill, JW will be authorized to proceed without notification to the USACE. Please confirm that our understanding is correct. If it is not, please advise what steps should be taken so that we can include the appropriate information in the initial submission to the USACE.

Thanks again for your time to visit the site. Your attention to this project is greatly appreciated.

-Dane

BHE Environmental, Inc. Dane G. Vandewater Wetland Scientist & Project Manager 11733 Chesterdale Road Cincinnati, OH 45246

Office: 513.326.1500 Direct: 513.326.1163 Fax: 513.326.1550 Mobile: 513.324.1927

Email: dvandewater@bheenvironmental.com

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Website: www.bheenvironmental.com <blocked::http://www.bheenvironmental.com/>

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Attachment 2

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

7 / L

	Title Score (salitor fledics 1, 2, 3).	
SITE NAME LOCATION SI A COMO	22816 M-07	
SITE NUMBER	DRAINAGE AREA (mi')	
LENGTH OF STREAM REACH (ft)	LAT. 70-10110 LONG. 63-7176 RIVER CODE RIVER MILE	
	COMMENTS	
NOTE: Complete All Items On This For	rm - Refer to "Field Evaluation Manual for Ohlo's PHWH Streams" for Instru	ctions
STREAM CHANNEL ONNE / NA	ATURAL CHANNEL PRECOVERED RECOVERING RECENT OR NO RECOVERING	VERY
MODIFICATIONS:		
1. SUBSTRATE (Estimate percent of ev	rery type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 40). Add total number of signific	cant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE BLDR SLABS [16 pts]	PERCENT TYPE PERCENT 100	Metric Points
BOULDER (>256 mm) [16 pts]	SILT [3 pt] [00 LEAF PACKWOODY DEBRIS [3 pts]	
☐ ☐ BEDROCK [16 pt]	☐ ☐ FINE DETRITUS [3 pts]	Substrate
	CLAY or HARDPAN [0 pt]	Max = 40
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]	4
☐ ☐ SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]	
Total of Percentages of	(A) 72	A + B
Bidr Slabs, Boulder, Cobbie, Bedrock _ SCORE OF TWO MOST PREDOMINATE SUBS		
SCORE OF 1440 MOST PREDOMINATE SUBS	STRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the m	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from roa > 30 centimeters [20 pts]	ad culverts or storm water pipes) (Check ONLY one box): 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	5 cm [5 pts]	15
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	,,
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 1/5	
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts]	e average of 3-4 measurements) (Check ONLY one box):	Bankfull Width
3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐ ≤ 1.0 m (≤ 3' 3") [5 pts]	Max=30
> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	30	3-1
COMMENTS	AVERAGE BANKFULL WIDTH (meters)	30
		-
	This information must also be completed	
RIPARIAN ZONE AND FLOODI	PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH L R (Per Bank)		
□ □ Wide >10m	L R (Most Predominant per Bank) L R Mature Forest, Wetland Conservation Tiliage	
☐ ☐ Moderate 5-10m	Immature Forest, Shrub or Old	
	ried —/-/ Open Bacture Bou	
☑ Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	
□ □ None	☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction	
COMMENTS		
FLOW REGIME (At Time of Eva	duation) (Check ONLY one box)	
Stream Flowing	Moist Channel, isolated pools, no flow (intermittent)	
Subsurface flow with isolated poor	ols (Interstitial) Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends p	per 61 m (200 ft) of channel) (Check ONLY one box): 1.0	
	1.0 U 2.0 U 3.0 1.5 D 2.5 D >3	
/ CTDEAM CDARLETT FORMAN	A STATE OF THE STA	
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 t/100 h) ☐ Moderate to Severe ☐ Severe (10 t/100 f)	
	The residual of the residual o	- 4

QHEI P	REAM INFORMATION (This Information Must Also be Completed):
	ERFORMED? - Tyes 19 No QHEI Score(If Yes, Attach Completed QHEI Form)
	STREAM DESIGNATED USE(S)
	Distance from Evaluated Stream
	Distance from Evaluated Stream Distance from Evaluated Stream
	The state of the s
	NG: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	e Name: NRCS Soil Map Page NRCS Soil Map Stream Order
ounty: Haro	Township/City_ Washington/Dola
	LLANEOUS
ase Flow Conditi	ions7 (Y/N): 1 Date of last precipitation 6/20/2016 Quantity 7.5"
	nation East and West photos
	77 (Y/N): N Canopy (% open): 100%
	lected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:
ield Measures	Temp (*C) NA Dissolved Oxygen (mg/l) NA pH (SU) NA Conductivity (µmhos/cm)
s the sampling re	ach representative of the stream (Y/N) If not_please explain
dditional comme	nts/description of pollution impacts
PIOTIC	EVALUATION
BIOTIC	EVALUATION
Performed? (Y/N)	
	ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
ish Ohserved? (Y/N) Voucher? (Y/N) N Salamanders Observed? (Y/N) Voucher? (Y/N) N
rogs or Tadpoles	Y/N) Voucher? (Y/N) Salaminders Observed? (Y/N) Voucher? (Y/N) Vou
comments Regar	AWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
comments Regar	AWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
comments Regar	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location
comments Regar	·
omments Regar	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location
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Comments Regar	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location COPS Lorenza grass
DR/	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location COPS Lorenza grass
DR/	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location
DR/	portant landmarks and other features of interest for site evaluation and a narrative description of the stream's location COPS Lorenza grass

ChieFPA Primary Headwater Habitat Evaluation Form

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

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1	12	_)	
	1-	7	

SITE NAME/LOCATION LOO CASA	2 EL 41	0 0701		3 ., 2, 3) .	
SITE NAME/LOCATIONSITE NUMBER_	RIVER BAS	SIN	DRAINA	GE ARFA (mi²)	
LENGTH OF STREAM REACH (ft) 100 DATE 16 6 SCORER OF	LAT. LON	G. RI	VER CODE	RIVER MILE	
NOTE: Complete All Items On This Fo					
STREAM CHANNEL ON NONE / N	ATURAL CHANNEL				
1. SUBSTRATE (Estimate percent of every Max of 40). Additional number of significant processing the substrate of the substrat	icant substrate types found (PERCENT TYPE		c score is sum of box Y DEBRIS [3 pts] pts] [0 pt]		HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock _ SCORE OF TWO MOST PREDOMINATE SUB-		TOTAL NUMBI	ER OF SUBSTRATE	(B)	A + B
2. Maximum Pool Depth (Measure the revaluation. Avoid plungle pools from real > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	ad culverts or storm water pi	oes) (Check ONL) > 5 cm - 10 cm [15 < 5 cm [5 pts]	one box):	Joon G	Pool Depti Max = 30
COMMENTS 510,34	20	MAXIMUM P	OOL DEPTH (centing	neters):	
BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	e average of 3-4 measurem		ck ONLY one box): '3" - 4'8") [15 pts] pts]	(43 Y 12 p 42 p	Bankfull Width Max=30
COMMENTS		AVERAGE B	ANKFULL WIDTH (r	neters)	20
RIPARIAN ZONE AND FLOOD RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m	FLOODPLAIN QUALITY L R (Most Predom Mature Fores)	TE: River Left (L) and / ninant per Bank)	Right (R) as looking	downstream☆ servation Tillage n or Industrial	
Narrow <5m None COMMENTS R Sag		ark, New Field	Crop	n Pasture, Row	
Stream Flowing Subsurface flow with isolated por		Moist Chan	nel, isolated pools, no l, no water (Ephemer		
SINUOSITY (Number of bends of None 0.5	per 61 m (200 ft) of channel) 1.0 1.5	(Check <i>ONLY</i> one ☐ 2.0 ☐ 2,5	box):		
STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate	☐ Moderate (2 ft/100 ft)	☐ Moderate	to Severe	Severe (10 ft/100	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Tyes No QHEI Score(If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	-00 cock
WWH Name: Hog Cseek	Distance from Evaluated Stream
WWH Name: Hog Cseek CWH Name: EWH Name: 300 100 100 100 100 100 100 100 100 100	Distance from Evaluated Stream
DEAL Name - 3/04-12 9/940	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map	Page: NRCS Soil Map Stream Order
County: Hardin Township / City: O	ola
MISCELLANEOUS	
Base Flow Conditions? (Y/N): \ Date of last precipitation: \	Quantity: 40.01 rache
Pli's share 330 316	
Photograph Information: Ali's phone 270 219	
Elevated Turbidity? (Y/N): Canopy (% open): O	
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: Artifical Y	Ditch delaported
	STI CIT , OCINICAL CO
w bank of stream	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	al. NOTE: all youcher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Pr	imary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebra	Voucher? (Y/N)
Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebra	tes Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	•
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	PEACH (This must be completed):
Include important landmarks and other features of interest for site evaluation a	
Ag.	a harrange description of the stream's location
0	
steep grassy bonks	XX
· Selinonia i	Lanv.
FLOW	
. 2011	X
	[NO17-14]
Road	Culvet > 2 ×
ما خاند ما نام	
Road Artifical ag ditch	18
	X

ChieFPA Primary Headwater Habitat Evaluation Form

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

н			
н	20	"	
ш		4	
ш)		

SITE NAME/LOCATION	H09 C	rek	<u> </u>	2-4310	-076	16	ADA SHIDE AN
						RAINAGE AREA (mi²) _	
LENGTH OF STREAM	REACH (ft)	LAT	LONG.	RI	VER CODE	RIVER MILE	
DATE 7/6/16	SCORERA	JR c	OMMENTS	A ad!	5280	oints AJR.	07616
NOTE: Complete A	Il Items On This	Form - Refer	to "Field Evaluat	ion Manual fo	r Ohio's PH	WH Streams" for Inst	tructions
STREAM CHANNEL	TNONE	/NATURAL CH	IANNEL TRECO	VEDEN SLDE	COVERING (RECENT OR NO REC	20VEDV
MODIFICATIONS:		710 11010 12 011	"WILL ENRESO	VERTED PORTE	COVERNING	_ RECENT OR NO REC	COVERT
			Leader Control of Particles				Blander of
1. SUBSTRATE (Estimate percent	of every type of	substrate present.	Check ONLY two	predominant	substrate TYPE boxes	1
(Max of 40). Ad	d total number of s	gnificant substra PERCENT	ate types found (Max TYPE	of 8). Final metri	c score is sum		HHEI Metric
BLDR SLAE	3S [16 pts]	7.1	C SIL	T [3 pt]		PERCENT	Points
	(>256 mm) [16 pts]			AF PACKWOOD	Y DEBRIS [3]	ots]	
□□ BEDROCK □□□ COBBLE (6)				E DETRITUS [3		.	Substrate Max = 40
10 M SERVICE CALLS	5-256 mm) [12 pts] -64 mm) [9 pts]		0.00000	AY or HARDPAN CK [0 pts]	[0 pt]		
SAND (<2 n				TIFICIAL [3 pts]			14
Total of P	ercentages of		(A)	The American Colorests		(P)	
Bldr Slabs, Boul	lder, Cobble, Bedro		3	7		(B)	A + B
SCORE OF TWO MOST	PREDOMINATES	UBSTRATE TY	PES:	TOTAL NUMBE	ER OF SUBST	RATE TYPES:	
. Maximum Pool	Depth (Measure t	he maximum po	ool depth within the	61 meter (200 f	t) evaluation r	each at the time of	Pool Depth
evaluation. Avoi	d plunge pools from	n road culverts o	or storm water pipes)	(Check ONLY	one box):		Max = 30
> 30 centimeters > 22.5 - 30 cm [5 cm - 10 cm [15 5 cm [5 pts]	pts]		
> 10 - 22.5 cm [WATER OR M	DIST CHANNE	EL [0 pts]	20
COMMENTS	841011		200	MAXIMUM P	OOL DEPTH	(centimeters):	
BANK FULL WI							
> 4.0 meters (> 13	3') [30 pts]	\ A	f 3-4 measurements	6) (Ched 1.0 m - 1.5 m (> 3	k ONLY one	box):	Bankfull Width
'□ >3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		□ ₹	1.0 m (≤ 3' 3") [5	pts] (100000000000000000000000000000000000000	Max=30
	> 4' 8" - 9' 7") [20 pt	-	_	- 291) And	dreid, o	30	30
COMMENTS				AVERAGE B	ANKFULL WI	DTH (meters)	30
RIPARIA	N ZONE AND FLO		information must a			ooking downstream ☆	
	IAN WIDTH		PLAIN QUALITY	viver Left (L) and	r Rigiit (R) as i	ooking downstreams?	
L R (Per E		L R	(Most Predominar		L R		
☐ ☐ Wide:			Mature Forest, We Immature Forest,		00	Conservation Tillage	
☐ ☐ Moder	rate 5-10m	1 00	Field	omas or ora		Urban or Industrial	
☐ ☐ Narro	w <5m		Residential, Park,	New Field	ZZ.	Open Pasture, Row	
🛛 🗖 None			Fenced Pasture			Crop Mining or Construction.	
COMME	NTS STEE	2 banks	5				_
FLOW R	EGIME (At Time of	Evaluation) (C	heck ONLY one box):			
Stream Flo	owing	1 1-	01	Moist Chann		ools, no flow (Intermittent	· mark
COMMEN	e flow with isolated	pools (Interstitie	Via the a	Ory channel	no water (Ep	phemeral)	
	VIS FLECTION				-		_
1-	D. AVR	de la las	Sur land		0		
1-	D. AVR	ds per 61 m (20	0 ft) of channel) (C		box):	J 3.0	
SINUOSI	D. AVR		0 ft) of channel) (C	heck <i>ONLY</i> one 2.0 2.5	box):	3.0 3.0	
SINUOSI None 0.5 STREAM GRADI	TY (Number of ben	1.0	0 ft) of channel) (C	2.0	box):		

WWH Name: CWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE USGS Quadrangle Name: NRCS Soil Map County: Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: Photograph Information: Canopy (% open): Elevated Turbidity? (Y/N): Were samples collected for water chemistry? (Y/N): Is the sampling reach representative of the stream (Y/N) If not, please explain:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream DAREA CLEARLY MARK THE SITE LOCATION Page: NRCS Soil Map Stream Order Quantity: And attach results) Lab Number:
WWH Name: CWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE USGS Quadrangle Name: NRCS Soil Map County: MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: Photograph Information: Canopy (% open): Were samples collected for water chemistry? (Y/N): Is the sampling reach representative of the stream (Y/N) If not, please explain:	Distance from Evaluated Stream Distance from Evaluated Stream
WWH Name: CWH Name: EWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE USGS Quadrangle Name: NRCS Soil Map County: Township / City: MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation: D223 027 Elevated Turbidity? (Y/N): Canopy (% open): Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. Field Measures: Temp (°C) Dissolved Oxygen (mg/l) If not, please explain:	Distance from Evaluated Stream Distance from Evaluated Stream DAREA. CLEARLY MARK THE SITE LOCATION Page: NRCS Soil Map Stream Order Quantity: And attach results) Lab Number:
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE USGS Quadrangle Name:	Distance from Evaluated Stream
Ware samples collected for water chemistry? (Y/N): (Note lab sample no. or id. Field Measures: Temp (°C) Dissolved Oxygen (mg/l) ph (s.U.) If not, please explain: Incorporation in photograph representative of the stream (Y/N) If not, please explain:	Page: NRCS Soil Map Stream Order Quantity:
Ware samples collected for water chemistry? (Y/N): (Note lab sample no. or id. Field Measures: Temp (°C) Dissolved Oxygen (mg/l) ph (s.U.) If not, please explain: Incorporation in photograph representative of the stream (Y/N) If not, please explain:	Page: NRCS Soil Map Stream Order Quantity:
MISCELLANEOUS Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity:(
Base Flow Conditions? (Y/N): Date of last precipitation:	and attach results) Lab Number:
Photograph Information: D223 X02Z Elevated Turbidity? (Y/N): M Canopy (% open): 100 Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. 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:	and attach results) Lab Number:
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. 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:	and attach results) Lab Number:
Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. 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:	
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:	
Is the sampling reach representative of the stream (Y/N) If not, please explain:	Conductivity (µmhos/em)
	, ,
Additional comments/description of pollution impacts:	
Performed? (Y/N): (If Yes, Record all observations. Voucher collections option ID number. Include appropriate field data sheets from the P Fish Observed? (Y/N) Voucher? (Y/N) Salamapders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebra Comments Regarding Biology:	Primary Headwater Habitat Assessment Manual)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation a	
	. / 1
**	ed Greep be
FLOW	P0[23249
Road	SI-ASR-3616
	1 21 AIR-3616
	1 151-17
(Eulvert)	
Eulvert	

PHWH Form Page - 2

Chiefpa Primary Headwater Habitat Evaluation Form

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

8	1 1	
8	11	
ä	7	∕∥
8	14	
ğ.,,,		

SITE NAME/LOCATION		
SITE NUMBER	RIVER BASIN	DRAINAGE AREA (mi²)
DATE 6/22/16 SCORER WKF	LAT. LONG. RIVE	ER CODE RIVER MILE
NOTE: Complete All Items On This For	m - Refer to "Field Evaluation Manual for (Ohio's PHWH Streams" for Instructions
STREAM CHANNEL ONONE / NA MODIFICATIONS:	TURAL CHANNEL PRECOVERED RECOVERED	그런 생각 보는 그는 그 사람들이 하는 것도 하는 것도 하는 것이 없었다. 그는 사람들이 살아가는 것은 것이 되었다. 그는 것은 것이다.
(Max of 40). Add total number of significant to the following state of the first total of Percentages of the	ery type of substrate present. Check ONLY two parts substrate types found (Max of 8). Final metric substrate types foun	Score is sum of boxes A & B. PERCENT Points DEBRIS [3 pts] ots] HHEI Metric Points Substrate
Bldr Slabs, Boulder, Cobble, Bedrock _ SCORE OF TWO MOST PREDOMINATE SUBS		R OF SUBSTRATE TYPES:
		ne box): Max = 30
COMMENTS	MAXIMUM PO	OL DEPTH (centimeters):
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	average of 3-4 measurements) (Check	$\begin{array}{c c} \hline 30 & \text{Max}=30 \\ \hline 30 & \text{C} \end{array}$
	This is formation and the land of the	
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS	This information must also be completed PLAIN QUALITY ANOTE: River Left (L) and F FLOODPLAIN QUALITY L R (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture	Right (R) as looking downstream & L R
FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated poo COMMENTS		el, isolated pools, no flow (Intermittent) no water (Ephemeral)
SINUOSITY (Number of bends p None 0.5	er 61 m (200 ft) of channel) (Check <i>ONLY</i> one binds of the channel) 1.0	ox): 3.0 >3
STREAM GRADIENT ESTIMATE Flat (0 5 ft/100 ft)	☐ Moderate (2 ft/100 ft) ☐ Moderate to	Severe (10 ft/100 ft)

	- ^-/		
QHEI PERFORMED	? - Tyes No QHEI Score	(If Yes, Attach Comple	ted QHEI Form)
DOWNSTREAM DE:	, ,	Distanc	e from Evaluated Stream
			e from Evaluated Stream
			from Evaluated Stream
MAPPING: ATTACH	COPIES OF MAPS, INCLUDING THE ENT	TIRE WATERSHED AREA. CI	EARLY MARK THE SITE LOCATION
JSGS Quadrangle Name:		NRCS Soil Map Page:	NRCS Soil Map Stream Order
county: <u>Hardi</u>	1 Townsh	nip/City: Was	hington, Pola, O
MISCELLANEOUS		, ,	
	Date of last precipitation:	/20/16 Quar	tity: 0,5
Photograph Information:		22>	
	Canopy (% open): 100	<i>v</i>	
Vere samples collected for wat	er 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.) C	onductivity (µmhos/cm)
s the sampling reach represen	ative of the stream (Y/N) If not, p	lease explain:	
Additional comments/descriptio	n of pollution impacts:		
BIOTIC EVALUATION	Nr.		
Performed? (Y/N):	(If Yes, Record all observations. Voucher		Il voucher samples must be labeled with the site
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data	sheets from the Primary Head	water Habitat Assessment Manual)
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data	sheets from the Primary Head	water Habitat Assessment Manual)
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data: Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual)
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data: Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual)
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data: Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual)
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data: Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual)
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology:	(If Yes, Record all observations. Voucher ID number. Include appropriate field data: Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic	sheets from the Primary Head served? (Y/N)	er? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology: DRAWING AN	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No wild if e	sheets from the Primary Head served? (Y/N)	er? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology: DRAWING AN	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No WI OF PERSONNEL OF THE PROPERTY OF THE PROPER	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology: DRAWING AN	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No wild if e	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology: DRAWING AN	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No WI OF PERSONNEL OF THE PROPERTY OF THE PROPER	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No WI OF PERSONNEL OF THE PROPERTY OF THE PROPER	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No WI OF PERSONNEL OF THE PROPERTY OF THE PROPER	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N): Fish Observed? (Y/N) Frogs or Tadpoles Observed? (Comments Regarding Biology: DRAWING AN	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic No WI OF PERSONNEL OF THE PROPERTY OF THE PROPER	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic D NARRATIVE DESCRIPTION of the salamand other features of inferest for Grouss	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):
Performed? (Y/N):	(If Yes, Record all observations. Voucher ID number. Include appropriate field data Voucher? (Y/N) Salamanders Ob Y/N) Voucher? (Y/N) Aquatic D NARRATIVE DESCRIPTION of the salamand other features of inferest for Grouss	sheets from the Primary Head served? (Y/N)	water Habitat Assessment Manual) er? (Y/N) Voucher? (Y/N) O (This must be completed):



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

	wint some	
1	U	-
4	7	-

SITE NAME/LOCATIO	v\$5			Section 1.		
					DRAINAGE AREA (mi²)	
					RIVER MILE	
DATE	SCORER	COM	IMENTS		A	
NOTE: Complete	All Items On This Fo	rm - Refer to	"Field Evaluation N	lanual for Ohio's P	HWH Streams" for Instr	uctions
STREAM CHANNEI MODIFICATIONS:				D RECOVERING	☐ RECENT OR NO REC	OVERY
(Max of 32). And TYPE BLDR SLA BOULDER BEDROCK COBBLE (6) GRAVEL (2) SAND (<2)	(Estimate percent of edd total number of signified total number of sig	very type of su	bstrate present. Check types found (Max of 8). TYPE SILT [3 present 13 present	k ONLY two predomina Final metric score is su ot] CK/WOODY DEBRIS [: TRITUS [3 pts] HARDPAN [0 pt]	nt substrate TYPE boxes um of boxes A & B. PERCENT 3 pts]	HHI Meti Poin Substr Max =
Bldr Slabs, Bou	Percentages of ulder, Cobble, Bedrock _ T PREDOMINATE SUB		(A) S: TOT	AL NUMBER OF SUB	(B) STRATE TYPES:	A+B
evaluation. Avo > 30 centimeter > 22.5 - 30 cm > 10 - 22.5 cm	ol Depth <i>(Measure the p</i> oid plunge pools from ro s [20 pts] [30 pts] [25 pts]	ad culverts or st	torm water pipés) (Cl > 5 cm	heck <i>ONLY</i> one box): - 10 cm [15 pts]	NEL [0 pts]	Pool De Max =
> 4.0 meters (> 1 > 3.0 m - 4.0 m	/IDTH (Measured as th 3') [30 pts] (> 9' 7" - 13') [25 pts] (> 9' 7" - 4' 8") [20 pts]		☐ >1.0 m	(Check <i>ONLY</i> on - 1.5 m (> 3' 3" - 4' 8") [1 (≤ 3' 3") [5 pts]		Bankt Widt Max=
COMMENTS_				VERAGE BANKFULL I	WIDTH (meters))
RIPAF L R (Per Wide		PLAIN QUALIT FLOODPL L R (formation must also by ☆NOTE: River AIN QUALITY Most Predominant per Mature Forest, Wetland mmature Forest, Shrub Field ARSIDER, New Fenced Pasture	Left (L) and Right (R) a Bank) or Old	S looking downstream A Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	
Stream F Subsurfa COMME	ce flow with isolated po	ols (Interstitial)		Ory channel, no water (ONLY one box):	pools, no flow (Intermittent) Ephemeral)	
STREAM GRAD Flat (0.5 ft/100 ft)	DENT ESTIMATE Flat to Moderate	1.5 Modera	2.	Moderate to Severe	□ >3 □ Severe (10 ft/10	0 ft)

ADDITIONAL STREAM INFORMATION (This information must Also be Completed):
QHEI PERFORMED? - Tyes Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
☐ CWH Name: Distance from Evaluated Stream ☐ EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Harding Township/City: Was hinsten Dola, OH
MISCELLANEOUS
Base Flow Conditions? (Y/N): V Date of last precipitation: 6/20/16 Quantity: 0, 5 Photograph Information: 1 S 2 S E
Photograph Information: 15 2'SE
Elevated Turbidity? (Y/N): Canopy (% open):/O
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 situation in 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: No Willife Observes
DRAWING AND MADDATIVE DESCRIPTION OF STREAM REACH (TILL)
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
Beans
Gogs
FLOW
· · · · · · · · · · · · · · · · · · ·
Grass
Beans
rears

Hardin County Historical Museum

223 N. Main St., Kenton, OH 43326 419-673-7147 director@hardinmuseums.org

September 30, 2016

Adam Holven Tetra Tech, In. 2001 Killebrew Dr., Suite 141 Bloomington, MN 55425

Dear Mr. Holven:

To our knowledge there are no additional history and architectural investigations that are needed.

Thank you for keeping us up to date.

Sincerely,

Linda L. lams, Director

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/5/2016 3:05:18 PM

in

Case No(s). 14-2273-GA-BNR, 16-1422-EL-BGA, 16-1423-EL-BGA

Summary: Response of Hog Creek Wind Farm LLC to Staff Data Requests electronically filed by Teresa Orahood on behalf of Sally W. Bloomfield