Attornerys and Counselors at Law

NATHANIEL S. OROSZ

DIRECT DIAL (614) 334-6117 norosz@cwslaw.com

September 25, 2008

Via Hand Delivery

Renee Jenkins
Ohio Power Siting Board
Docketing Division
180 East Broad Street – 13th Floor
Columbus, Ohio 43215

RE: OPSB Case No. 06-1357-EL-BTX

Dear Ms. Jenkins:

Please docket the enclosed materials, which were submitted to the Ohio Power Siting Board Staff on September 25, 2008 with regard to the accepted, complete application in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities.

Respectfully,

Nathaniel S. Orosz

Counsel for American Municipal Power-Ohio, Inc.

cc: Judge Gregory Price – 12th Floor

This is to certify that the images appearing are an accurate mic complete expronection of a case file document delivered in the requier course of business.

Technician Arr Date Processed 9/125/08

Via Hand Delivery

Klaus Lambeck Chief Facilities, Siting & Environmental Analysis Division Ohio Power Siting Board 180 East Broad Street Columbus, Ohio 43215 AMP OHIO American Municipal Power-Ohio, Inc.

RE: OPSB Case No. 06-1357-EL-BTX

Dear Klaus:

I am writing on behalf of American Municipal Power-Ohio, Inc. ("AMP-Ohio") in regards to AMP-Ohio's pending application before the Ohio Power Siting Board in OPSB Case No. 06-1357-EL-BTX, In the Matter of the Application of American Municipal Power-Ohio, Inc., for a Certificate of Environmental Compatibility and Public Need for an Electric Power Transmission Line and Related Facilities ("Application").

Since submittal of the Application, AMP-Ohio has submitted a number of clarifications regarding the AMPGS proposed preferred and alternate route for the transmission line. AMP-Ohio's August 18, 2008 letter and submittal included transmission line profile drawings, conceptual access plans, and estimates on the total areas of vegetation clearing for the preferred and alternate options. On August 19th and 20th, Ohio Power Siting and Ohio EPA staff representatives participated in a field walk down of the preferred transmission route.

By this letter, AMP-Ohio submits the attached updated clarification drawings, reports and information.

I am also providing documentation of a small modification of the proposed transmission route.

As set forth in O.A.C. 4906-5-10(A)(6), this modification is not an amendment to the accepted, complete Application because it is within 2,000 feet of the study corridor, will not impact any additional landowners, and will not create further impacts within the planned right-of-way of the proposed facility.

OHIO: AMHERST • ARCADIA • ARCANUM • BEACH CITY • BLANCHESTER • BLOOMDALE • BOWLING GREEN • BRADNER • BREWSTER • BRYAN • CAREY • CELINA • CLEVELAND • CLYDE COLUMBIANA • COLUMBUS • CUSTAR • CUYAHOGA FALLS • CYGNET • DESHLER • DOVER • EDGERTON • ELDORADO • ELMORE • GALION • GENOA • GLOUSTER • GRAFTON • GREENWCH HAMILTON • HASKINS • HOLIDAY CITY • HUBBARD • HUDSON • HURON • JACKSON • JACKSON • CENTER • LAKEVIEW • LEBANON • LODI• LUCAS • MARSHALL VILLE • MENDON • MILLAN • MINSTER MONTOPELIER • NAPOLEON • NEW BREMEN • NEW KNOXVILLE • NEWTON FALLS • NILES • OAK HARBOR • OBERLIN • OHIO CITY • ORTVILLE • PAINESVILLE • PEMBERVILLE • PIONEER • PROUN • PLYMOUTH • PROSPECT • REPUBLIC • ST. CLAIRSVILLE • ST. MARYS • SEVILLE • SHLEDY • SHLED • SOUTH VIENNA • SYCAMORE • TIPP CITY • VERSAILLES • WADSWORTH WAPAKONETA • WAYNESFIELD • WELLINGTON • WESTERVILLE • WHARTON • WOODSFIELD • WOODVILLE • YELLOW SPRINGS

PENNSYLVANIA: BERLIN®BLAKELY®CATAWISSA®DUNCANNON®EAST CONEMAUGH®ELLWOOD CITY®EPHRATA®GIRARD®GROVE CITY®HATHELD®HOOVERSVILLE®KUTZTOWN®LANSDALE
LEHIGHTON®LEWISBERRY®MIDDLETOWN®MIFFLINBURG®NEW WILMINGTON®OLYPHANI®QUAKERTOWN®ROYALTON®ST. CLAIR®SCHUYLKILL HAVEN®SMETHPORT
SUMMERHILL®WATSONTOWN®WEATHERLY

MICHIGAN: CLINTON + COLDWATER + DOWAGIAC + HILLSDALE + MARSHALL + UNION CITY + WYANDOTTE

VIRGINIA: BEDFORD DANVILLE FRONT ROYAL MARTINSVILLE PRICHLANDS

WEST VIRGINIA: NEW MARTINSVILLE + PHILIPPI

KENTUCKY: WILLIAMSTOWN



Please do not hesitate to contact me if you have any questions.

On Behalf of the Members,

Scott Kiesewetter

Manager of New Plant Engineering American Municipal Power-Ohio, Inc.

Attachments

cc: James O'Dell, OPSB Staff

Jolene Thompson, AMP-Ohio Randy Meyer, AMP-Ohio

John Bentine, CWS

Listing of Attachments:

Attachment A – General Alignment Plan Primary (Preferred) Transmission Route dated September 19, 2008

Attachment B - Preferred Route Preliminary Access Plan dated September 22, 2008

Attachment C - Clearing Plan for Transmission Lines dated September 24, 2008

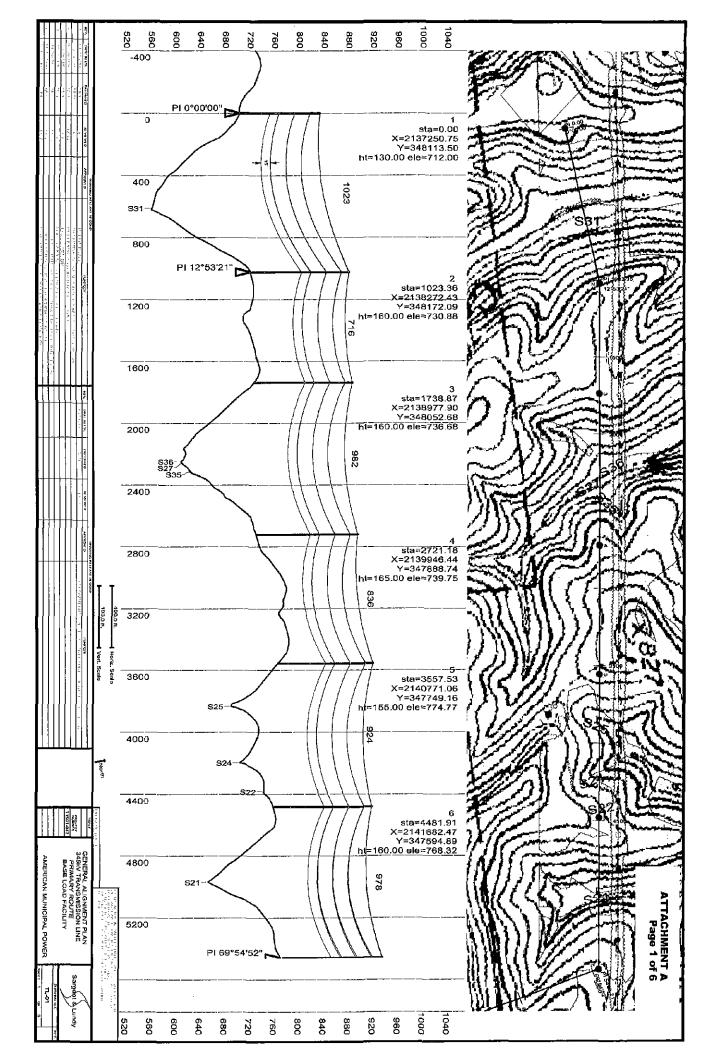
Attachment D – Preferred Route Wetland Delineation and Stream Assessment Report dated September 23, 2008

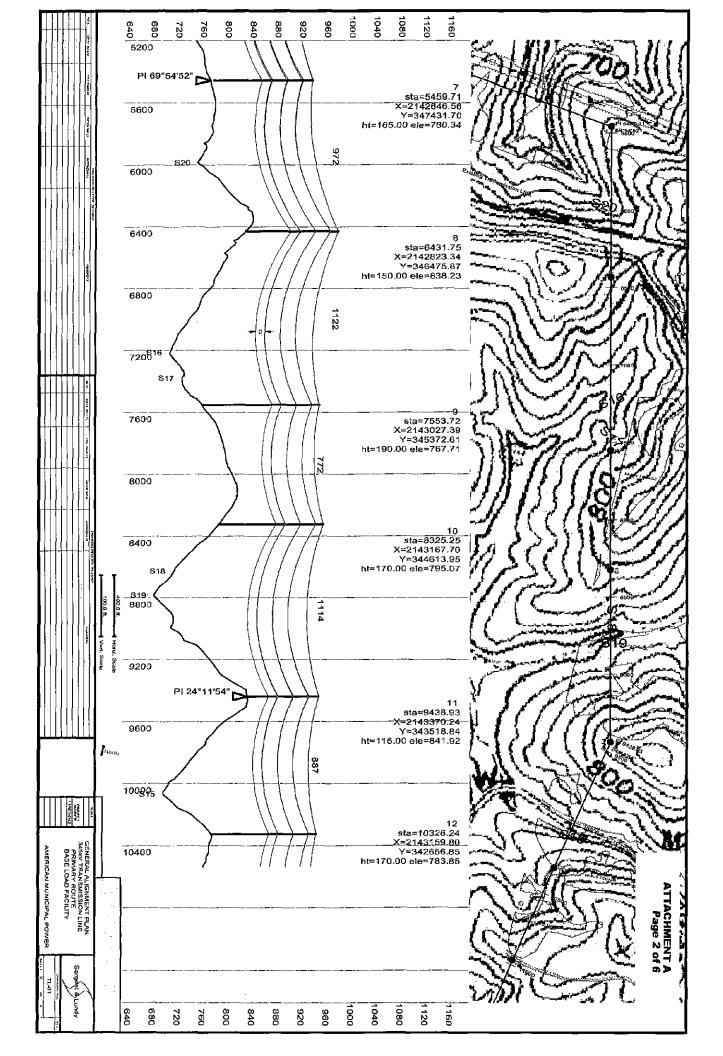
Attachment E – Photographic Record Preferred Transmission Route

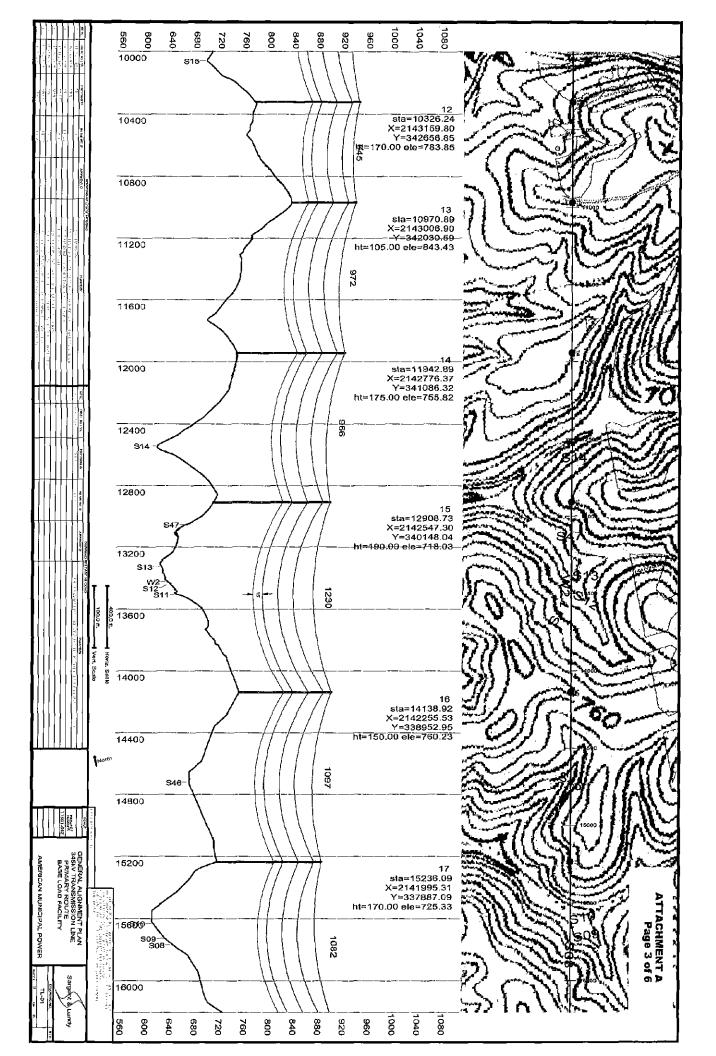
Attachment F - Transmission Line Preferred and Alternate Routes Extension to Plant Substation

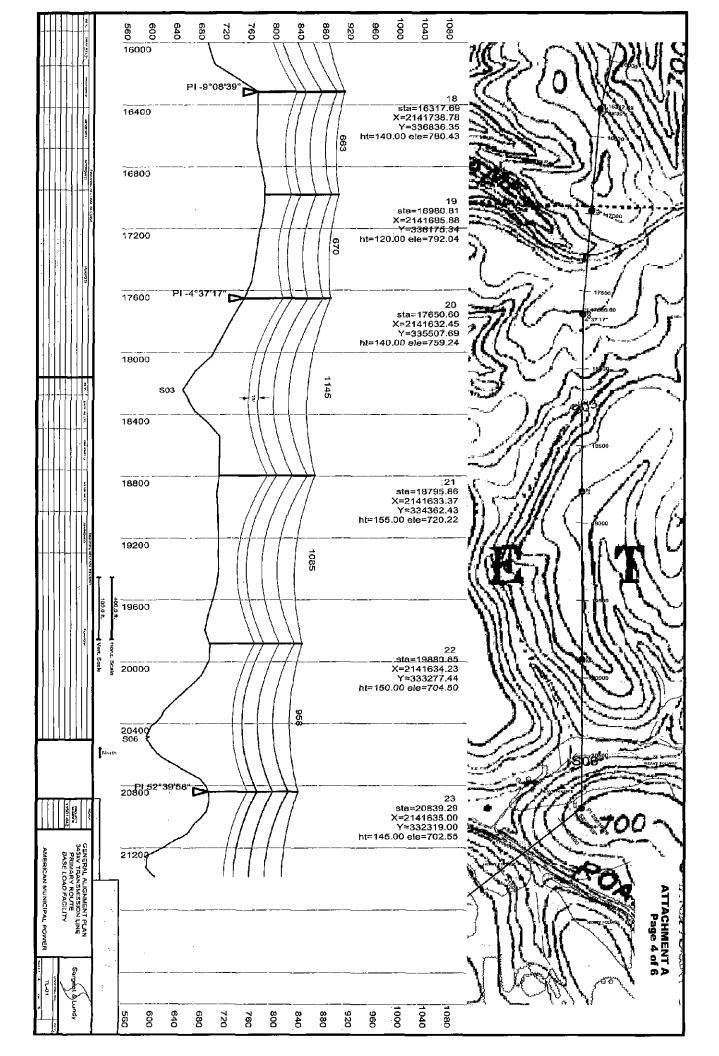
Attachment A

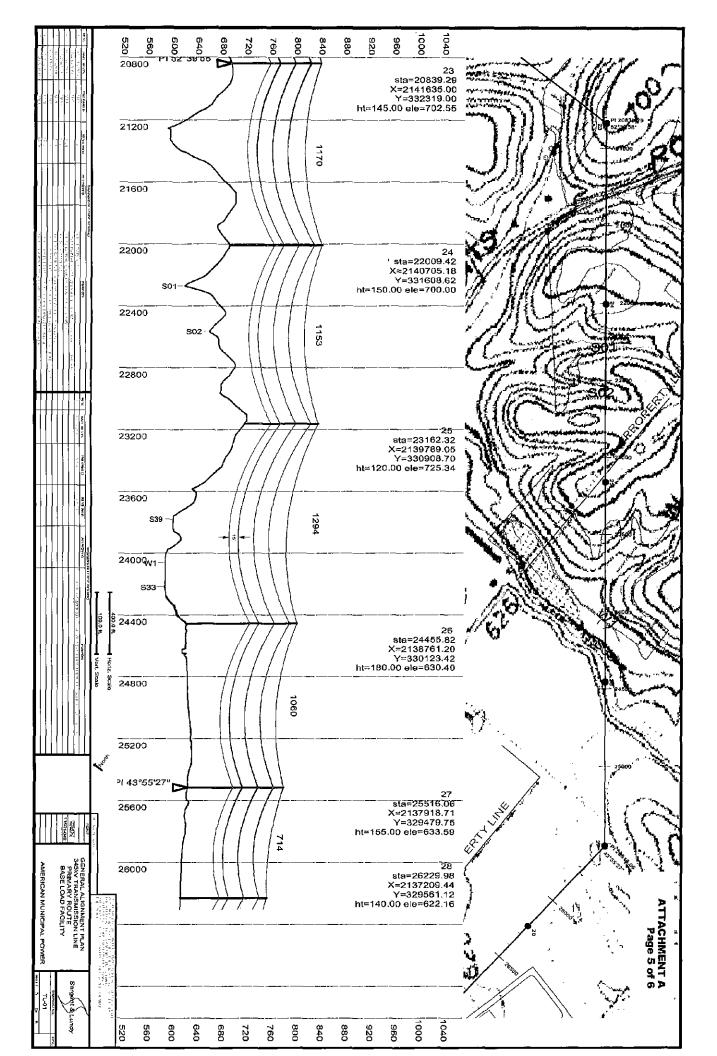
General Alignment Plan Primary (Preferred) Transmission Route dated September 19, 2008

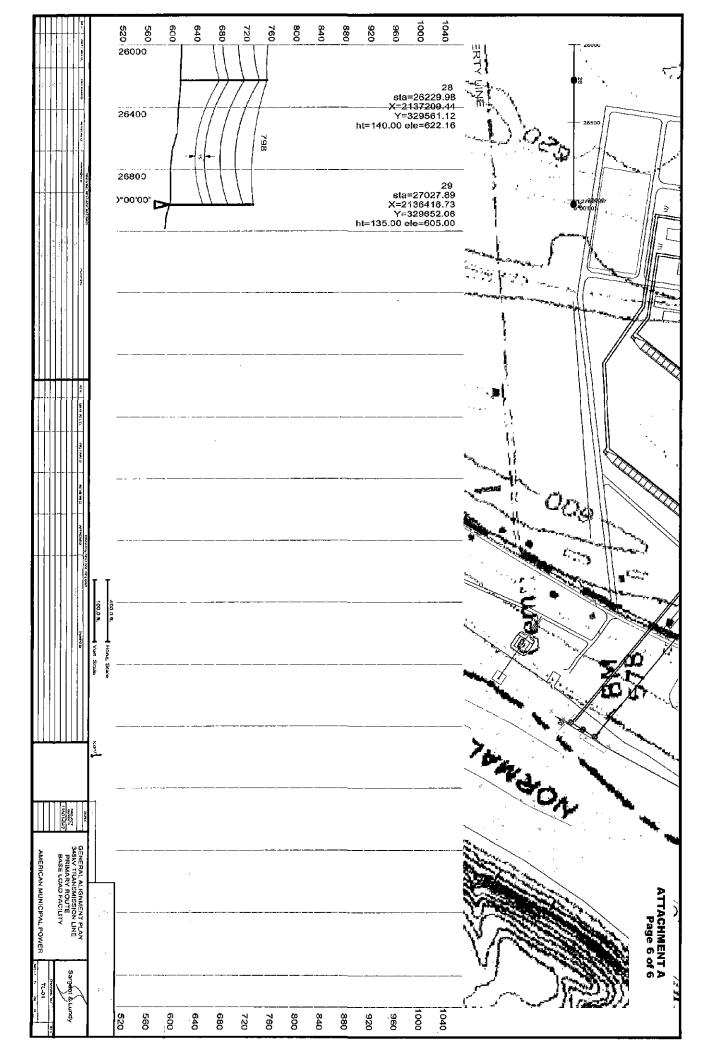






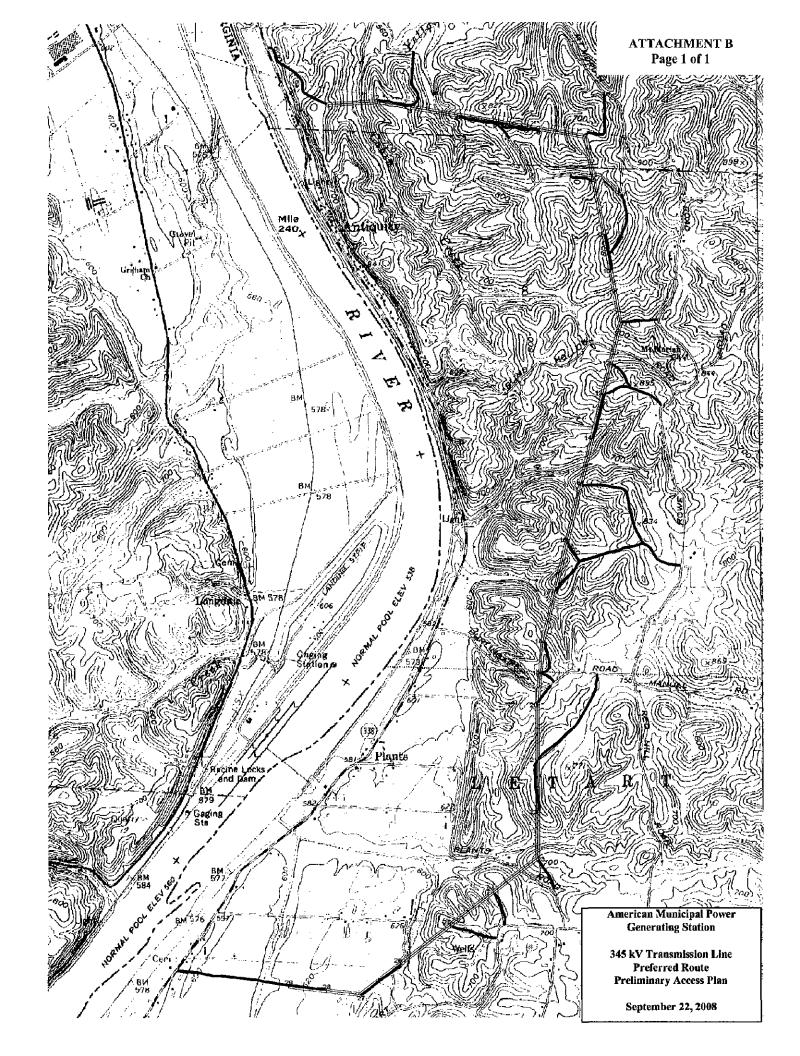






Attachment B

Preferred Route Preliminary Access Plan dated September 22, 2008



Attachment C

Clearing Plan for Transmission Lines dated September 24, 2008

Brian C. Wood Vice President Phone: (312) 269-2638

brian.c.wood@sargentlundy.com

September 24, 2008

American Municipal Power-Ohio, Inc. Baseload Generating Station

Clearing Plan for Transmission Lines

Mr. Scott Kiesewetter Manager of New Plant Engineering American Municipal Power-Ohio, Etc. 2600 Airport Drive Columbus, OH 43219

Dear Mr. Kiesewetter:

Sargent & Lundy has reviewed the Primary and Alternate transmission line routes to evaluate the clearing plan for the proposed routes.

Tree clearing will be required during construction of the new transmission line. Trees must be removed in order to construct access roads to each structure site. In addition, trees and obstructions must be removed in proximity to each transmission structure to allow space for construction crews to erect the structures. Finally, selective clearing will be required along the transmission right-of-way (ROW) to provide adequate electrical clearances between the conductors and any vegetation.

A tree species and height survey was performed by AMP –Ohio along the Primary route ROW at twenty headwater stream and two wetland crossings during mid-September 2008. AMP-Ohio staff estimates an average tree height of approximately 60 feet based on the areas included in the survey.

An approximate evaluation was performed to determine the areas that trees will need to be removed. Based on AMP-Ohio's estimated 60 feet average tree height plus an additional 15 feet clearance, as required by the National Electric Safety Code, the required clearance to the conductors would be a minimum of 75 feet. Using that as an average tree cover over the entire ROW, the following approximate lengths of ROW would be impacted and require significant selective clearing:

- Primary Route 11,100 feet
- Alternate Route 13,900 feet

Based on the 150 foot ROW, the total areas requiring significant selective clearing by segment would be:

- Primary Route 39 acres
- Alternate Route 48 acres

In addition, access roads approximately 15-20 feet in width will be required to each structure. This would add approximately five acres to the cleared areas to both the Primary and Alternate routes.

Please give Tony Lunardini (312) 269-8731 or me a call if you need any additional information.

Yours very truly,

B. Wood

Vice President

BCW:ALL:RGP:seq

Enclosures Copies:

R. Presnak

A. Lunardini

Attachment D

Preferred Route Wetland Delineation and Stream Assessment Report dated September 23, 2008



September 23, 2008

Mr. Scott Kiesewetter American Municipal Power 2600 Airport Drive Columbus, Ohio 43219

Re: Preferred Route Wetland Delineation and Stream Assessment Report, AMP-Ohio 345 kV Transmission Line Project, Meigs County, Ohio

Dear Mr. Kiesewetter:

American Municipal Power-Ohio, Inc. (AMP-Ohio) is planning to construct a transmission line that will connect its proposed 1,000-MW pulverized coal fired power plant to an interconnection switchyard located south of the existing American Electric Power (AEP) Sporn-Kaiser No. 1 138 kV transmission line. The proposed transmission line is located in the Letart Falls area of Meigs County, Ohio. This letter report summarizes the findings of the wetland delineation and stream assessment conducted by URS for the Preferred Route. The delineation and assessment was conducted in August 2006, June 2007, April 2008, July 2008, and August 2008. Figure 1 shows the proposed delineated area and the surrounding vicinity.

The ecological assessment for this project was conducted by a qualified URS biologist. The assessment was comprised of an Army Corps of Engineers (ACOE) jurisdictional wetland delineation, Ohio EPA Ohio Rapid Assessment Method (ORAM) version 5.0 qualitative wetland assessments, and Headwater Habitat Evaluation Index (HHEI) and Qualitative Habitat Evaluation Index (QHEI) for surface drainages.

Methods

The project site was investigated for the presence of wetlands using the procedures outlined in the ACOE Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987). Completed ACOE wetland delineation forms for wetland W1 and W2 are included in Attachment 1. Additionally, URS prepared Ohio EPA ORAM version 5.0, (ORAM v5.0 Manual) qualitative wetland evaluation forms for these wetlands, which are included in Attachment 1. Habitat assessments for streams with a drainage area less than one square mile and located within the 150-foot construction right-of-way (ROW), were conducted using the methods described in the Ohio EPA's Field Evaluation Manual for Ohio's Primary Headwater

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Mr. Scott Kiesewetter 9/23/2008 Page 2

Habitat Streams. Final Version 1.0 (Davic, 2001) (HHEI). The completed HHEI forms are included in Attachment 2. Habitat assessment of streams with a drainage area greater than one square mile and located within the 150-foot construction ROW, were conducted using the methods described in the Ohio EPA's Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (Rankin, 2006) (QHEI). The completed QHEI forms are included in Attachment 2. The locations and approximate extent of these features are provided on Figure 1.

Results

U.S. Army Corps of Engineers Evaluation

Two wetlands, totaling 0.91 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland W2 covers an area of 0.01 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland W2 is labeled PEM based on the Cowardin Wetland Classification. See Table 1 for details on both wetlands.

Based upon the procedure identified in the 1987 Manual, the areas delineated in Figure 1 are wetlands, as they meet vegetation, soil and hydrology wetland criteria. Upland areas were observed to contain some wetland vegetation, but did not meet the hydrology and/or soils criteria of the 1987 Manual.

Ohio EPA ORAM Evaluation

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland W2 scored 54/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersion, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 1 regarding delineated Preferred Route wetlands.



Mr. Scott Kiesewetter 9/23/2008 Page 3

Ohio EPA QHEI Evaluation

Ohio EPA QHEI forms for stream habitat assessments were completed for one stream located within the 150-foot construction ROW. The completed QHEI stream form is included in Attachment 2. The location of these streams is provided on Figure 1.

The QHEI method is generally considered appropriate for streams with drainage basins greater than one square mile, if natural pools are greater than 40 cm, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the Ohio EPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L).

Field surveys along the Preferred Route identified one stream with a drainage area greater than one square mile. The QHEI evaluation of the stream resulted in a "good warmwater habitat" stream designation (S31).

Ohio EPA HHEI Evaluation

Ohio EPA HHEI forms for stream habitat assessment were completed for 32 streams located within the 150-foot construction ROW. The completed HHEI stream forms are included in Attachment 2. The location of these streams is provided on Figure 1.

The HHEI methodology uses a 100-point scale for scoring. The score is based on composition of substrate, pool depth, and bankfull width. Once a score is obtained, it is applied to the decision-making flow chart. This chart serves to assign a class to streams based upon stream channel modifications, biotic communities, and percentage of substrate comprised of bedrock, boulder, boulder slabs, and cobble.

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Mr. Scott Kiesewetter 9/23/2008 Page 4

The Preferred Route contains 32 primary headwater streams including: 12 Class I streams, 12 Class II streams, and 8 Class III streams. Preferred Route streams are summarized in Table 2.

Class I Streams – Twelve Class I headwater streams were identified during the field investigation with scores ranging from a low of 9 to a high of 28. The substrate composition of these streams is generally dominated by silt, clay, leafpack/woody debris. Muck, sand, and gravel are also noted as less dominant substrate types in this stream class. Maximum pool depth is less 0 inches. The bankfull width for this group of streams is less than 3 feet.

Class II Headwater Streams – Twelve Class II headwater streams were identified during the field investigation with scores ranging from a low of 30 to a high of 56. The substrate composition of these streams is generally dominated by gravel, silt, and sand. Cobble, leafpack/woody debris, and boulder slabs are also noted as less dominant substrate types in this class of stream. The maximum pool depth is less than 12 inches. The bank full width for this group of streams is generally less than 7 feet.

Class III Headwater Streams - Eight Class III headwater streams were evaluated during the field investigation with scores ranging from 45 to 82. The substrate of these streams is dominated by cobble, gravel, and bedrock. Sand and silt are noted as less dominant substrate types. The maximum pool depth is 10 inches. The bank full width is between 2 and 8 feet.

Interconnection Switchyard

Field surveys identified no wetlands within the interconnection switchyard (switchyard) boundary. Field surveys did identify one headwater stream, S37, within the switchyard boundary. Approximately 190 feet of S37 are within the switchyard boundary (Figure 1). Stream S37 scored 19/100, classifying it as a Class I stream. The substrate of this stream is dominated by leafpack/woody debris and sand. Gravel, cobble, and fine detritus are



Mr. Scott Kiesewetter 9/23/2008 Page 5

noted as less dominant substrate types. The maximum pool depth is 0 inches. The bankfull width is 1 foot.

Comparison to Alternate Route

The Alternate Route contains 27 streams within the 150-foot construction ROW, one QHEI evaluated stream (same as crossed by Preferred Route) and 26 HHEI evaluated headwater streams. The QHEI evaluated stream received a "good warmwater habitat" narrative rating. Seven Class I streams, 17 Class II streams, and 2 Modified Class II streams were evaluated using the HHEI method. See Table 3 for a description of streams found with the Alternate Route 150-foot construction ROW.

Two wetlands identified within the Alternate Route, wetland W1 and Alt-W1, totaling 1.12 acres were delineated within the 150-foot construction ROW. Wetland W1 covers an area of 0.90 acres. Wetland Alt-W1 covers an area of 0.22 acres. Wetland W1 is labeled PEM/PSS with a small PFO component based on Cowardin Wetland Classification. Wetland Alt-W1 is labeled PEM based on the Cowardin Wetland Classification. See Table 4 for details on both wetlands.

According to the Ohio EPA ORAM evaluation, wetland W1 scored 58.5/100, indicating it is a Category II wetland. Wetland Alt-W1 scored 42/100, indicating it is a Category II wetland. The Category II wetland exhibited moderate to high quality plant communities with few invasive species, moderate to good plant community interspersion, low to high intensity anthropogenic impact of surrounding land (i.e. farming, residential use, urban infrastructure, etc.), and recovered and/or no modification to natural hydrology and habitat. See Table 4 regarding Alternate Route wetlands.

Conclusions

Two jurisdictional (i.e. non-isolated), wetlands, totaling 0.91 acres, were identified within the 150-foot construction ROW of the Preferred Route. URS's Ohio EPA ORAM evaluation of both wetlands resulted in both wetlands being designated as Category II wetlands.

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URS

Mr. Scott Kiesewetter 9/23/2008 Page 6

Thirty-three streams were identified within the 150-foot construction ROW. One stream was evaluated using the QHEI methodology and resulted in a narrative rating of "good warmwater habitat" stream. Thirty-two headwater streams were evaluated using the HHEI methodology; 12 Class I streams, 12 Class II streams, and 8 Class III streams.

One HHEI evaluated Class I stream was identified within the interconnection switchyard boundary (S37).

Two wetlands identified within the Alternate Route, totaling 1.12 acres, were delineated within the 150-foot construction ROW. Twenty-seven streams within the Alternate Route 150-foot construction ROW were assessed, one QHEI evaluated stream, a "good warmwater habitat stream", and 26 HHEI evaluated headwater streams; 7 Class I streams, 17 Class II streams, and 2 Modified Class II streams.

Approximately 5 miles of new electric transmission line will be built to connect the project to the electric grid. No wetlands or streams will be filled as part of the transmission line construction or operation. Construction will require stream crossings but these will be temporary and will be discussed with the OEPA and OPSB during preconstruction meetings. The crossing method will vary according to width and quality of the stream, but will be designed in accordance with the Rainwater and Land Development Manual published by the ODNR/OEPA. Erosion control and restoration will be conducted according to the conditions of the Stormwater Pollution Prevention Plan and OPSB Application.

The construction of the interconnect switchyard will require impact to stream S37, however impacts will be mitigated through the proposed off-site stream mitigation.



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Mr. Scott Kiesewetter 9/23/2008 Page 7

If you have any questions or comments regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

URS

Matthew Thomayer Environmental Scientist James Nicholas, Ph.D.
Principal Scientist

TABLE 1
WETLANDS LOCATED IN THE AMP-OHIO 345 kV
TRANSMISSION LINE PREFERRED ROUTE CORRIDOR

Wetland ID	Cowardin Wetland Type	ORAM Score	ORAM Category	Linear Feet Crossed	Acreage within 150-foot Corridor
W1	PEM/SS with PFO Component	58.5	II	252	0.90
W2	PEM	54	II	9	0.01
Total: 2				261	0.91

TABLE 2

STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE PREFERRED ROUTE CORRIDOR

Stream Name	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (inches)	Assessment Method	Score	Class/Narrative Rating	Length of Stream within 150 ROW (feet)
S01	Interstitial	4	3	ннег	56	Class II	168.0
S02	Ephemeral	1.5	0	HHEI	19	Class I	162.7
S03	Interstitial	3	3	HHEI	39	Class II	225.1
S04	Ephemeral	1.5	0	HHEI	24	Class I	177.2
S06	Ephemeral	7	0	HHEI	37	Class II	177.1
808	Ephemeral	3	0	HHEI	27	Class I	177.5
S09	Ephemeral	9	0	HHEI	39	Class II	165.1
\$10	Interstitial	7.5	2	HHEI	55	Class III	228.3
\$11	Ephemeral	2	2	HHEI	34	Class II	160.1
\$12	Interstitial	2.5	4	HHEI	45	Class III	309.4
\$13	Perennial	2.5	3	HHEI	26	Class I	58.9
S14	Perennial	5.5	4	HHEI	64	Class III	152.8
\$15	Perennial	7	2	HHEI	62	Class III	155.0
\$16	Interstitial	5	3	HHEI	54	Class III	205.2
S17	Ephemeral	3	0	HHEI	18	Class I	233.2
\$18	Ephemeral	2.5	0	HHE	41	ClassII	299.1
819	Perennial	7	8	HHEI	82	Class III	214.3
S20	Ephemeral	4	0	HHEI	30	Class II	179.2
S21	Interstitial	9	3	HHEI	62	Class III	109.0
\$22	Ephemeral	3	0	HHEI	6	Class I	91.3
\$24	Ephemeral	2.5	0	HHEI	25	Class I	219.7
\$25	Ephemeral	4	0	HHEI	35	Class II	119.6
S27	Interstitial	8	10	ннег	77	Class III	193.1
\$29	Ephemeral	1	0	HHEI	6	Class I	35.9
S31	Perennial	17	24	OHEI	63	Good Warmwater Habitat	150.3
\$33	Perennial	7	12	HHEI	52	Class II	189.8
	!						

AMP-Ohio 345 kV Transmission Line Project (Preferred Route)

TABLE 2

STREAMS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE PREFERRED ROUTE CORRIDOR

Length of Stream within 150 ROW (feet)	162.2	226.7	33.9	212.7	6.9	236.7	141.9	5577.7
Class/Narrative Rating	Class I	Class II	Class I	Class II	Class I	Class II	Class I	
Score	19	32	23	44	28	37	21	
Assessment	HHEI	HHEI	HHEI	HHEI	HHEI	HHEI	HHEI	
Maximum Pool Depth (inches)	0	0	0	9	2	2	0	€6
Bankfull Width (feet)	. 60	3	2	3	2	3	3	141
Flow Regime	Intermittent	Ephemeral	Ephemeral	Ephemeral	Ephemeral	Ephemeral	Ephemeral	
Stream Name	S35	S36	838	839	S40	S46	S47	Total: 33

TABLE 3

STREAMS LOCATED IN THE AMP-OHIO 345 KV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR

Name	Flow Regime	Bankfull Width (feet)	Maximum Pool Depth (inches)	Assessment Method	Score	Class/Narrative Rating	Length within 150-foot Corridor (feet)
\$33	Perennial	9	12	HHEI	52	Class 2	189.7
Alt-S1	Intermittent	3	0	HHEI	11	Class 1	124.0
Alt-S2	Intermittent	3	0	HHEI	37	Modified Class 2	153.7
Alt-S3	Intermittent	3	0	HHEI	15	Class 1	216.9
Alt-S4	Ephemeral	3.5	0	HHEI	41	Class 2	147.5
Alt-S5	Ephemeral	<i>L</i>	0	HHEI	47	Class 2	125.1
Alt-S6	Ephemeral	L	0	HHEI	40	Class 2	196.7
Alt-S7	Intermittent	10.5	0	HHEI	50	Class 2	170.4
Alt-S8	Intermittent	7	0	ннег	45	Modified Class 2	260.3
Alt-S9	Ephemeral	9	0	HHEI	57	Class 2	144.0
Alt-S10	. Ephemeral	9.5	0	HHEI	53	Class 2	191.3
Alt-S11	Ephemeral	8	0	HHEI	40	Class 2	90.3
Alt-S12	Ephemeral	<i>L</i>	_0	HHEI	31	Class 2	268.8
Alt-S13	Intermittent	_ 9	0	HHEI	32	Class 2	380.8
Alt-S14	Ephemeral	9	0	HHEI	38	Class 2	165.2
Alt-S15	Ephemeral	11	0	HHEI	50	Class 2	92.6
Alt-S16	Ephemeral	11	0	HHEI	50	Class 2	155.0
Alt-S17	Ephemeral	10	0	HHEI	54	Class 2	155.0
S31	Perennial	_	24	Онег	63	Good Warmwater Habitat	160.9
838	Ephemeral	2	0	HHEI	23	Class 1	150.5

AMP-Ohio 345 kV Transmission Line Project (Alternate Route)

AMP-Ohio 345 kV Transmission Line Project (Alternate Route)

STREAMS LOCATED IN THE AMP-OHIO 345 KV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR TABLE 3

Γ		.	Γ-						
	Length within 150-foot Corridor (feet)	215.7	171.3	148.4	174.2	192.8	189.8	164.3	4,795.4
	Class/Narrative Rating	Class 2	Class 1	Class 1	Class 1	Class 2	Class 2	Class 1	
	Score	44	28	24	17	45	48	19	
	Assessment Method	HHEI	HHEI	HHEI	HHEI	HHEI	HHEI	HHEI	
	Maximum Pool Depth (inches)	9	2	1	1.5	3	3	0	E 5
	Bankfull Width (feet)	3	2	1.5	2	3.5	3.5	2	121
	Flow Regime	Perennial	Perennial	Perennial	Perennial	Perennial	Perennial	Ephemeral	
	Name	6£S	S40	S41	S42	S43	S44	S45	Total: 27

TABLE 4 WETLANDS LOCATED IN THE AMP-OHIO 345 kV TRANSMISSION LINE ALTERNATE ROUTE CORRIDOR

Wetland ID	Cowardin Wetland Type	ORAM Score	ORAM Category	Linear Feet Crossed	Acreage within 150-foot Corridor
Wı	PEM/SS with PFO Component	58.5	П	252	0.90
Alt-W1	PEM	42	II	75	0.22
Total: 2				327	1.12

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JOB NO. 14946376

Orainages

ATTACHMENT 1

U.S. ARMY CORPS OF ENGINEERS
AND
OHIO EPA ORAM
DATA SHEETS

DATA FORM ROUTINE WETLAND DETERMINATION

Project/Site: AMP-Ohio Transmuse Applicant/Owner: AMP-Ohio	ion	Date: 8/s/06 County: 2hugh
Investigator: JAV CURS		State:
Do Normal Circumstances Exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area? (If needed, explain on reverse.)	Yes No Yes No Yes No	Community ID : PEM ASS Transect ID: Plot ID:
/EGETATION		
Dominant Plant Species Stratum Indicator Dichanterly H FAC+ 2 chapateries caperais H FACH 3. Junus efficients H OBL 4. Typha latefulat H OBL 5. Dypha angustfolia M OBL 6. Eupatorumpufficatum H FACH+ 7. Acce pacherium ST FACH 8. Beline frondasa M FACH Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). Remarks: other observed plants inclusions and necessariant ferm, and necessariant ferm.	10 and pp 11 Herous I 12 Polygown po 13 Plantamooc 14 Saling magain 15 alleghensen 16 Verbena ho	Lagittation H OBL H FAC-OBL Laerra H OBL M FACW MACHINE ST FACW LIGHTATION S FACW LIGHT H FACW
HYDROLOGY		
Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge Aeriat Photographs Other No Recorded Data Available Field Observations:	Water I Drift Lir Sedime	s: led led in Upper 12 Inches Marks

strong wittand hydrology, stream buseits

_(in.)

Depth to Free Water in Pit:

Depth to Saturated Soil:

Remarks:

Water-Stained Leaves Local Soil Survey Data

FAC-Neulral Test Other (Explain in Remarks)

SOILS

Map Unit Name (Series and Phase): Taxonomy (Subgroup):	Field Observations
Profile Description: Depth (Inches) Horizon (Munsell Moist) (Munsell Mosell Mos	
Hydric Soil Indicators:	Concretions High Organic Content in Surface Layer Sandy Soits Organic Streaking in Sandy Soils Listed on Local Hydric Soils List Listed on National Hydric Soils List Other (Explain in Remarks)
WETLAND DETERMINATION	
Hydrophytic Vegetation Present? (Yes) No (Circle) Wetland Hydrology Present? (Yes) No Hydric Soils Present? (Yes) No	(Circle) Is this Sampling Point Within a Wetland? (Ves) No
Remarks:	

Approved by HQUSACE 3/92

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

											
Project/Site: AMP								Date: 8/23/0	6		
Applicant/Owner: AMP			 .					County: Me	igs		
Investigator(s): Brooke McCloskey								State: OH			
Do Normal Circumstances exist on	the site?			=	es	브	No	Community	ID: PEM		
Is the site significantly disturbed (A	Atypical Si	uation)?		<u> </u>	es		No	Transect ID:	WET		
is the area a potential Problem Are	a? (If needed	explain on re	verse)	∐ Y	es	V	No	Piot ID: 2		<u> </u>	
								GPS Coordi	nates:		
VEGETATION											
Dominant Plant Species	% Cover	Stratum	Indicator		Dom	inant	Plant S	pecies	% Cover	Stratum	Indicator
Impatiens capensis	20	He	FACW	9.					<u> </u>		
Toxicadendron radicans	10	He	FAC	10.					ļ		
3. Panicum clandestinum	35	He	FAC+	11.							
4. Polygonum pensylvanicum	5	He	FACW	12.					ļ		
5. Boehmeria cylindrica	25	He	FACW	13.							
6. Cyperus esculentus	5	He	FACW	14.							
7				15. 16.							
8. Percent of Dominant Species that are OBL, FACW, or FAC (exclude									<u>L</u>		
HYDROLOGY	·-: .———					·- <u></u>					
				Wetia	and H	ydro	ology li	ndicators:		 -	
Recorded Data (Describe	in Rema	rks)		Pr			licators				ſ
Stream, Lake, or Tide (Gauge						ındated				
Aerial Photographs								l in Upper 1	2 inches		j
Other				 			iter Ma				
No Recorded Data Availal	ble		<u> </u>	<u> </u>			ft Line	•			
	·			Sediment Deposits							
Field Observations:				}	LJ		_	Patterns in			1
Depth of Surface Water:	2	<u> </u>	(in.)	Se	cond	-		tors (2 or m	•	•	,
	_			<u>.</u> j				Root Chan	-	per 12 ir	iches
Depth to Free Water in Pit:		3	(in.)			•		ained Leave			
Danish to Octometed Octo			(i \	<u>}</u>				i Survey Da	ata		l
Depth to Saturated Soil:	surf	ace ———	(in.)					tral Test	marka)		ļ
 				<u> </u>		- Oti	iei (EX	plain in Re	marks)		
Remarks: Wetland hydrology criterio	n nas been	met.									
1											

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

SOILS

Map Unit Name	e (Series and Ph	ase):		Drainage Class:				
Гахопоту (Su	bgroup):		Field Observation	s Confirm Mapped Type?	☐ Yes ☐ No			
Profile Descrip	tion:							
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle (Abundance/Contrast)	Texture, Concretions, Structure, etc.			
0-1	Α	10YR 2/1	NA					
1-6	В	10YR 4/1	NA					
lydric Soil Ind	icators:							
	Histosol			Concretions				
	Histic Epipedon			High Organic Content in St	urface Layer in Sandy Soils			
	Sulfidic Odor			Organic Streaking in San	dy Soils			
Aquic Moisture regime				Listed on Local Hydric S	oils List			
Reducing Conditions				Listed on National Hydric Soils List				
1	Gleyed or Low-C	hroma Colors		Other (Explain in Remark	s)			
	ric soils criterion i							
ydrophytic Veget		✓ Yes	☐ No	T				
etland Hydrology		✓ Yes	☐ No	Is this Sampling P	oint Within a Wetland?			
ydric Soils Prese	nt?	√ Yes	☐ No	✓ Yes	☐ No			
temarks: All three	wetland criteria have	been met, therefore	, this area is consider	ed a wetland.				

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

				_		_						
Project/Site: AMP									Date: 8/23/0	3		
Applicant/Owner: AMP									County: Mei	gs		
Investigator(s): Brooke McCloskey	<u> </u>								State: OH			
Do Normal Circumstances exist on	the site?			V	Yes]	40	Community I	D: PEM		
Is the site significantly disturbed (/	Atypical Sit	uation)?			Yes	7	<u> </u>	No	Transect ID:	UPL.		
is the area a potential Problem Are	a? (If needed	, explain on re	verse)		Yes	Ţ	<u> </u>	No.	Plot ID: 2			
									GPS Coordin	ates:		
												· · · · · · · · · · · · · · · · · · ·
VEGETATION												
Dominant Plant Species	% Cover	Stratum	Indicator		Do	mina	ant P	lant Sp	ecies	% Cover	Stratum	Indicator
1. Impatiens capensis		He	FACW	9. A	mbrosi	a arte	emis	iifolia			He	FACU
2. lonicera japonica		He	FAC-	10.								
3. Erigeron anuus		He	FACU	11.								
4. Rubus alleghenensis		He	FACU	12.								
5. Boehmerla cylindrica		He	FACW	13.		_						
6. Oxalis stricta		He	UPL	14.							<u> </u>	
7. Polygonum virginianum		Нө	FAC	15.					 ,			
8. Commelina communis	<u> </u>	He	FAC	16.							<u> </u>	
HYDROLOGY												
						_		- •	ndicators:			
Recorded Data (Describe		rks)			Prima	¬ -		ators				
Stream, Lake, or Tide	Gauge				L_	_		dated				
Aerial Photographs					L-	_			in Upper 1	2 inches		
☐ U Other					<u>لہ</u> ~-			er Mai				
No Recorded Data Availa	ble			-		_		Lines				
				l	<u>_</u>				Deposits			
Field Observations:					L_			_	Patterns in			
Depth of Surface Water:	()	(in.)		Secor	_	-		ors (2 ar m	•	-	
					Ľ	_			Root Chani	•	oper 12 i	nches
Depth to Free Water in Pit:)	(in.)		<u>L</u>	_			ined Leave			
		_	41 .		<u> </u>				Survey Da	ita		
Depth to Saturated Soil:) 	(in.)		L				ral Test			
					[(Othe	er (Exi	plain in Rei	marks)		
Remarks: Wetland hydrology criteric	n has not b	een met.										
											_	

DATA FORM

ROUTINE WETLAND DETERMINATION

(1987 COE Wetlands Delineations Manual)

SOILS

Map Unit Nam	e (Series and Ph	ase):			Drainage Class:	
Taxonomy (Su	ibgroup):		Field Observ	/ation	s Confirm Mapped Type?	Yes No
Profile Descrip Depth (inches)	otion: Horizon	Matrix Color (Munsell Moist)	Mottle Col (Munsell M		Mottle (Abundance/Contrast)	Texture, Concretions, Structure, etc.
0-3	А	7.5Y 2/1	NA			
3-9	В	7.5Y 4/1	NA			
Hydric Soil Ind	licators:					
	Histosol				Concretions	
	Histic Epipedon				High Organic Content In S	Surface Layer in Sandy Soils
	Sulfidic Odor				Organic Streaking in Sa	ndy Soils
	Aquic Moisture r	egime			Listed on Local Hydric S	Soils List
	Reducing Condit	ions			Listed on National Hydri	ic Soils List
V	Gleyed or Low-C	hroma Colors			Other (Explain in Remar	ks)
	ric soils criterion r					
	ETERMINATION	ON ☐ Yes		NI-	 	
Hydrophytic Veget		⊤es ☐ Yes		No No	to strip Committee of	Daine Ifficialism a Maradam do
Wetland Hydrolog Hydric Soils Prese					is this sampling i	Point Within a Wetland?
l*		<u>-</u>		No rea is	not considered a wetland.	

Site: WI	Rater(s): JAU(URS)	Date: 8/1/06
5 5 N	letric 1. Wetland Area (size).	
max 6 pts. subfolal Sel	ect one size class and assign score. >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	
7 12 M	etric 2. Upland buffers and surroun	ding land use.
4	Calculate average buffer width. Select only one and assign score. Do not divide WIDE. Buffers average 50m (164ft) or more around wetland perimeter MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland VERY NARROW. Buffers average <10m (<32ft) around wetland perimentally of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area LOW. Old field (>10 years), shrubland, young second growth forest. (5 MODERATELY HIGH. Residential, fenced pasture, park, conservation HIGH. Urban, industrial, open pasture, row cropping) mining, construct	(7) I perimeter (4) Ind perimeter (1) Ideter (0) India, etc. (7) India, new fallow field. (3)
17.5 29.5M	etric 3. Hydrology.	• •
max 30 pis. subtotal 3a.	Sources of Water, Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface water (3)	nectivity. Score all that apply. 100 year floodplain (1) Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) tion inundation/saturation. Score one or dbl check. Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) tiverage.
7	Recent or no recovery (1) dike weir	point source (nonstormwater) filling/grading road bed/RR track dredging other man made dam at
19 485 M	etric 4. Habitat Alteration and Devel	opment.
max 20 pts. sublotal 4a. 4b.	Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recent or no recovery (1) Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	
4c.	Habitat alteration. Score one or double check and average. None or none apparent (9) Check all disturbances observed	about Application
49.5) subjotal this page	Recent or no recovery (1) Clearcutting selective cutting woody debris removal	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment

in the surending viently Intarmodurers to have spected

Site:	Rater(s):	Date:
subjotal this page		
Ø 48.5Metric 5. Sp	ecial Wetlands.	
max 10 pts. subtotal Check all that apply and so	core as Indicated.	
Fen (10)		
Old growth forest		
Mature forested to	wettano (5) il/tributary wetland-unrestricted hydrology ((10)
/ 	Wiributary wetland-restricted hydrology (5)	·
Lake Plain Sand	Prairies (Oak Openings) (10)	
Relict Wet Praire		
	ce state/federal threatened or endangered tory songbird/water fowl habitat or usage (• • •
——————————————————————————————————————	and. See Question 1 Qualitative Rating (-1	•
	_	
<u> 0 58.5</u> Metric 6. Pla	ınt communities, int	erspersion, microtopography.
max 20 pts. subtotal 6a. Wetland Vegetation Co		
Score all present using 0 to	o 3 scale0	Absent or comprises < 0.1ha (0.2471 acres) contiguous area
Aquatic bed 3 Emergent	1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a
1		significant part but is of low quality
5 L Shrub	2	Present and either comprises significant part of wetland's
△ Mudflats		vegetation and is of moderate quality or comprises a small
Open water Other	3	part and is of high quality Present and comprises significant part, or more, of wetland's
6b. horizontal (plan view) !		vegetation and is of high quality
Select only one.		
High (5)	Narrative Description	of Vegetation Quality
Moderately high(Moderately low (2) Low (1) None (0) 6c. Coverage of invasive p to Table 1 ORAM long form or deduct points for coverage Extensive >75% Moderate 26-75% Sparse 5-25% co Value of the coverage of invasive p to Table 1 ORAM long form or deduct points for coverage Extensive >75% Moderate 26-75% Sparse 5-25% co Value of the coverage Absent (1) 6d. Microtopography. Score all present using 0 to Vegetated humm I Coarse woody de	4) low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
Moderately low (2)	2) mod	Native spp are dominant component of the vegetation,
∠ Low (1)	-,	although nonnative and/or disturbance tolerant native spp
None (0)		can also be present, and species diversity moderate to
6c. Coverage of invasive p	plants. Refer	moderately high, but generallyw/o presence of rare
or deduct points for covera	ge high	threatened or endangered spp A predominance of native species, with nonnative spp
Extensive >75%	cover (-5)	and/or disturbance tolerant native spp absent or virtually
Moderate 26-75%	6 cover (-3)	absent, and high spp diversity and often, but not always,
Sparse 5-25% co	ver (-1)	the presence of rare, threatened, or endangered spp
Meanly absent <0	% cover (0) Mudflat and Open Wa	ator Class Quality
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
Score all present using 0 to	3 scale. 1	Low 0.1 to <1ha (0.247 to 2.47 acres)
1 Vegetated humm	ucks/tussucks 2	Moderate 1 to <4ha (2.47 to 9.88 acres)
Coarse woody de	9bris >15cm (6in) 3	High 4ha (9.88 acres) or more
Standing dead >2 O Amphibian breed		ver Scale
	0	Absent
	1 .	Present very small amounts or if more common
		of marginal quality
	2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
	3	Present in moderate or greater amounts
		and of highest quality
SES GRAND TOTAL (max 100	nte)	
CONTINUE - A LY JEHINGY 100	Fr vary	

Site:	MMY	Rater(s): ⟨⊅⟨∀∀⟩	Patrickhendule
2	Motri	c 1. Wetland Area (size).	Page 24 of 66
max & pts.	subtotal Select one	size class and assign score.	- 2
		-50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <20.2ha) (5 pts) 10 to <25 acres (4 to <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	Jacent :
14	/// Metr	ic 2. Upland buffers and surroundin	a land use.
max 14 pie.	subtotal 2a, Calcu	late average buffer width. Select only one and assign score. Do not double WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perin NARROW. Buffers average 10m to <25m (32ft) around wetland perin VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (6 sity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. LOW. Old field (>10 years), shrubland, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tiling HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (check. nater (4) imeter (1) 0) (7) e, new fallow field. (3)
21		ric 3, Hydrology.	Secret all that and
max 30 pts.	3c. Man	High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/intermittent surface water (3) Perennial surface water (lake or stream) (5) dimum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)	ity. Score all that apply. year floodplain (1) veen stream/lake and other human use (1) of wetland/upland (e.g. forest), complex (1) of riparian or upland corridor (1) inundation/saturation. Score one or dol check. ii- to permanently inundated/saturated (4) ularly inundated/saturated (3) sonally inundated (2) sonally saturated in upper 30cm (12in) (1) ugs.
	12	Recovering (3) tile dike road	nt source (nonstormwater) g/grading d bed/RR track dging
100	1,	. Landa and the second	,
max 20 p	sublotal 4a. Su X	tric 4. Habitat Alteration and Develor ibstrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) abitat development. Select only one and assign score. Excellent (7) Very good (6) Cood (6) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) abitat alteration. Score one or double check and average.	pment.
	53 a.b.logia inis oase	Recovering (3) Recent or no recovery (1) Recovering of the recovery of the recov	rub/sapling removal rbaceous/aquatic bed removal dimentation edging rming utrient enrichment

LO.		ltzara	1(9).	Inate:
Г				Page 25 of 66
7	53			wet 2
	53	Metric 5. Special Wetl	ands.	•
nax 10 pls.	subtotal	Check all that apply and score as indicated.		
(sax ropus	300000	Bog (10)		
		Fen (10)		•
_		Old growth forest (10)		
	\	Mature forested wetland (5)	44:4-44 4 4	
10/)	Lake Erie coastal/tributary wetland-ur		•
		Lake Erie coastal/tributary wetland-re		
		Relict Wet Prairies (10)	1189) (10)	
		Known occurrence state/federal thres	atened or endangered	species (10)
		Significant migratory songbird/water	_	· · · · · · · · · · · · · · · · · · ·
	-	Category 1 Welland. See Question	1 Qualitative Rating (-	10)
1	<i>[1]</i>			4
, ,	54	_Metric 6. Plant comm	unities, in	terspersion, microtopography.
max 20 pts.	subjotal	• • • • • • • • • • • • • • • • • • • •	Vegetation Commun	
		Score all present using 0 to 3 scale.		Absent or comprises <0.1ha (0.2471 acres) contiguous area
'		Aquatic bed	1	Present and either comprises small part of wetland's
	\sim			vegetation and is of moderate quality, or comprises a significent part but is of low quality
		Forest	2	Present and either comprises significant part of welland's
		Mudflats	-	vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) interspersion.		vegetation and is of high quality
		Select only one.	Namedica December	and Edden and the Standille
		High (5) Moderately high(4)	low	on of Vegetation Quality Low spp diversity and/or predominance of nonnative or
	~	Moderate (3)	ION	disturbance tolerant native species
•	\cup	Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		Low (1)		although nonnative and/or disturbance tolerant native spp
		None (0)		can also be present, and species diversity moderate to
		6c. Coverage of Invasive plants. Refer		moderately high, but generallywlo presence of rare
(")		to Table 1 ORAM long form for list. Add or deduct points for coverage	high	A predominance of native species, with nonnative spp
\bigcirc		Extensive >75% cover (-5)	high	and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0)		
		X Absent (1)	Mudflat and Open	Water Class Quality
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		() Vegetated hummucks/tussucks () Coarse woody debris >15cm (6in)	3 -	Moderate 1 to <4ha (2.47 to 9.88 acres) High 4ha (9.88 acres) or more
		() Standing dead >25cm (10in) dbh	<u> </u>	Tright and (9:00 dotes) of fitting
		Amphibian breeding pools	Microtopography	Cover Scale
			0	Absent
			1	Present very small amounts or if more common
				of marginal quality
			2	Present in moderate amounts, but not of highest
				quality or in small amounts of highest quality
			3	Present in moderate or greater amounts
			<u> </u>	and of highest quality
1 54	- GR	AND TOTAL(max 100 pts)		

....

ATTACHMENT 2

OHIO EPA QHEI
AND
OHIO EPA HHEI
DATA SHEETS

ATTACHMENT D Page 27 of 66 (if Yes, Recard all observations. Voucher cellections optional. NOTE all voucher samples must be labelled with the site. ID number. Include appropriate field data sheats from the Pithary Headwater Hobitla! Assessment Manual. of interest for site evolution and a narrative description of the stream's location NRCS Soil Map Stream Order MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MASK THE SITE LOCATION DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Fish Observed? (YM) N Voucher? (YM) Salamanders Observed? (YM) Voucher? (YM) C Voucher? (YM) Frogs or Tadpoles Observed? (YM) L Voucher? (YM) Aquate Maccellinestoches Observed? (YM) L Voucher? (YM) Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Conductivity (µmhos/cm) (Note fab sample no. or id. and attach results) Lab Number (iff Yes, Attach Completed QHEI Form) NRCS Sold Map Page.___ 可配 PH (S.U.) Date of last prediptibilian: UNKNOWN アンジン Power at ADDITIONAL STREAM INFORMATION (This information must also de Complete ___ If not, please explain. _ Dissolved Oxygen (mg/l)_ OHEI PERFORMED? - O Yes Who OHEI Score 2000年3 Is the sampling reach representative of the stream (Y/N), \underline{V} USGS Quadrangle Name: New Howers OH Were samples collected for water chemistry? (VM): include important landmarks and other teatures Additional comments/description of poliution impacts: DOWNSTREAM DESIGNATED USE(S) Base Flow Conditions? (Y/N): BIOTIC EVALUATION Temp (°C) Elevated Turbidity? (YM): Comments Regarding Biology:_ MISCELL ANEOUS County: DREACS Photograph Information: Performed? (Y/N): Ociober 24, 2002 Rovision O CWH Name: _ Fletd Measures: O www Name: A + B 12 15

Pool Depth Max = 30 ATE: Metric Points 2 Bankfull Width Max=30 DRAINAGE AREA (MF) 4 MI STREAM CHANNEL MINOR / WITHOUT CHANNEL CHECONERD. CIRCOLERING CIRCOLT ON IO RECOVERY NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohlo's PHWH Streams" for Instructions Savere (10 re100 f) Moist Channel, isolated poots, noutow (Intermittent) Dry channel, no water (Ephemeral) Grop Mining or Construction RIVER MILE SUBSTRATE (Estimata percent of every type of substrate prosent. Onest ONLY <u>type</u> predominant substrain TYPE boxes (Max of 32), Add total nember of significant substrait types found (Max of 8). Final melific score is sum of boxes A & B. This information must also be completed
QUALITY &NOTE: River Left (L) and Right (R) as booking downstreams Conservation Tillage Open Pasture, Row Maximum Pool Boph, (Measure the maximum pool depth within the 6f mater (206 ft) evaluation reach at the time of evaluation. Avoid purps pools from road culturals or storm water priess. (Chest ONLY one box):

3.0.-delithinging 10 perm.

2.2.5 (2) of right perm.

3.0.-2.2.5 (2) of right perm.

NO WATER OR MORE CHANNE. (Diete) HHEI Score (sum of metrics 1, 2, 3): Urban or Industrial PERCENT <u>.</u> TOTAL NUMBER OF SUBSTRATE TYPES: MAXIMUR POOL DEPTH (contimeters): AVERAGE BANKFULL WIDTH (motors) BANK FULL WIOTH (Next und as the average of 34 measurements)

(Check ONL Yone box):

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Stream Flowing

Stream Annals (Interstitla) RINER BASIN Fenced Pasture RIPARIAN ZONE AND FLOODPLAIN QUALITY & NOT PIPARIAN WIDTH SINUOSITY (Number of bends per 61 m (200 ft) of channel)
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PHWM Form Page - 1

Detater 24, 2002 Revision

ATTACHMENT D Page 28 of 66 Of Yes, Record at otherwations. Voucher collections optional, NOTE: all voucher samples must be labeled with the size. ID number, include appropriate field dots sheels from the Poimary Headwater Habitat Assessment Maryas). Include important fundmarks and other instance of internal for site evaluation, and a nerrative description of the stream's focation $|\sin(x)|^2 = 1$ MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>Entire</u> Watershed Area. Clearly Mark the ste location NRCS Soil Map Stream Order DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Fish Observed? (YM) Voucher? (YM) Salemanders Observed? (YM) Voucher? (Y Distance from Evaluated Stream
Distance from Evaluated Stream Distance from Evaluated Stream Conductivity (umhos/cm) Were samples collected for water chemistry? (YIN): N. (Note lab sample no, or id, and attach nesults) Lab Numb (if Yes, Attach Completed QHEI Form) LEST TOS PENS Date of last predictation: 1/1/2-0.50v/W Quantity __ NRCS Soil Map Page:____ Bank ADDITIONAL STREAM INFORMATION (This Information Must Also be Conditional); is the sampling reach representative of the stream (YIN) 🗸 If not, please explain. Township / City. Canopy (% open): 00 % QHEI PERFORMED7 - 🗆 Yes 📢 No OHEI SOME Dissolved Oxygen (mg/l) USGS Quadrangle Name: NOW HONCH OH Additional comments/description of pollution impacts; DOWNSTREAM DESIGNATED ÚSE(S) Base Flow Conditions? (YIN); BIOTIC EVALUATION Comments Regarding Biology: Elevated Turbidity? (YNV): M Field Measures: Temp (*C)___ MISCELLANEDUS County MRICS Photograph Information: Performed? (Y/IN): O WWH Name: October 24, 2002 Revision

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PHWH Form Page - 1

October 24, 2002 Revision

ATTACHMENT D Page 29 of 66 (If Yos, Roond at observations, Voucher collections optional, NOTE; at worcher samples must be belied with the site ID number. Include appropriate field date sheets from the Primary Headwater Hinkfalt Assessment Manual. include important landmarks and other features of interast for site evaluation and a narrative description of the stream's location NRCS Soil Map Stream Order MAPPING: ATTACH COMES OF MAPS, INCLIDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Fah Observed? (Y.N.) K. Voucher? (Y.N.) Salanpanders Observed? (Y.N.) K. Voucher? (Y.N.) Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream (Note lab sample no. or id. and attach results) Lab Number (If Yes, Attach Completed QHEI Form) Date of last precipitation: UNKUNW Quantity NRCS Soft Map Page: pH(S.U.) ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed) is the sampling reach representative of the stream (YM) If not, please explain; Candyy (% open): 8090 Dissolved Oxygen (mg/l) QHEI PERFORMED? . Thes X No GHEI Soore, USGS QUEDTERNIE NAME. NEW HOLVEN OH trest Were samples collected for water chemistry? (Y/N): pool=3"40 res+ Additional comments/description of pollution impacts; DOWNSTREAM DESIGNATED USE(S) Base Flow Conditions? (YIM): Elevated Turbidity? (YIN): N BIOTIC EVALUATION Field Measures: Temp ("C)___ MISCELLANEDUS Comments Regarding Biology; Photograph Information: County. MEKS O CWH Name: Parformed? (Y/N); October 24, 2002 Ravislar

Pool Depth Max = 30

A+B 5

(A) (a)

TOTAL NUMBER OF SUBSTRATE TYPES:

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES.

'n

Total of Percentages of Total Stabs, Boulder, Cobble, Bedrock

3

9

Nextmum Pool Depth (Measure the maximum pool depth within the of mater (200 fit) evaluation reach at the time of evaluation. For york planes pools from read sulverts or storm water ploes. (Check OML) one box;

- 30 centimies (10 ptg)

- 225 cm (10 ptg)

- 325 cm (10 ptg)

Bankfull Width Naxe30

(Check ONLY one box):

> 1.0 in (+5 in (+5 in a. b.) [16 pin]

> 1.0 in (+5 in b)

BANK FULL WIDTH (Measured as the average of 34 measurem + 40 measurem (n°13) pa pai)

000 م

> 30 m 40 m (> 9.77 - (3) [26 pm]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

(

33.6

AVERAGE BANKFULL WIDTH (meters)

Severe (10 to 100 ft)

☐ Moderate to Severe

Moderate a retoo to

Flat (a.5 Innoo n)

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October 24, 2002 Revision

PHWH Form Page - 1

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SINUCSITY (Number of bends per 61 m (200 ft) of channel) (2)head ONLY one box); Vone box

Moist Channel, isolated poots, no flow (Intermittent) Dry channel, no water (Ephemeral)

FLOW REGIME (At Time of Evaluation) (Check ONLY one bax):
Stream Flowing

Control of American Analis (Intensities)

Subsurface flow with isolated pools (interstitial) COMMENTS

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Mining or Construction

Open Pasture, Row

00

Residential, Park, New Field

Moderate 5-10m Narrow 45m

Wide > 10m

-Z-0 0 00

Fenced Pasture

COMMENTS

Conservation Tillage

-0 0 0 0

(Most Predominant per Bank) Mature Forcst, Welland Irmature Forest, Shrub or Old Field

Urban or Industrial

This information <u>must</u> also be completed QUALITY ANOTE: River Left (L) and Right (R) as locking downstream*t*²

RIPARIAN ZONE AND FLOODPLAIN QUALITY
RIPARIAN WIDTH
ELOCOPPLAIN QUALITY

Substrate Max = 40

1500 PERCENT

STREAM CHANNE: A NONE JUNIOR CHANNE: DRECOVERD, DRECOVERD, DRECOVERD, OFFICERD OFFIC

SUBSTRATE (Estimate pervent of every type of substrate present. Check CAN, Y <u>two</u> predominant substrate 717E boxes (Atax of 22). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

PERCENT TYPE
BOLIOSER (25 Sering) [14 pag]
COORDE (15 Sering) [14 pag]
COORDE (15 Sering) [15 pag]
COORDE (15 Seri

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohlo's PHWH Streams" for Instructions

DRAINAGE AREA (mi) ()

RIVER CODE

LONG

LENGTH OF STREAM REACH (11) 200 LAT. LO LO COMMENTS COMMENTS

RIVER BASIN

SITE NUMBER 53

SITE NAME/LOCATION

fm f

39

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

Original Primary Headwater Habitat Evaluation Form

Class I

٦ Substrate Max = 40 Pool Depth Max = 30 Bankfull Width Max=30 A+B 4 DRAINAGE AREA (mr.) 4 1001 0 NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHAINEE. MORE / WITHOUT CHAINEE THE CONFIRM TH <u></u> SUBSTRATE (Estimate percent of every type of substrate present. Check CNE.Y 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. RIVER MILE HHEI Score (sum of metrics 1, 2, 3): nonts) (Check OWLYone box): \$\times 0.00 \times 1.50 \times 20 \t TOTAL NUMBER OF SUBSTRATE TYPES: MAXIMUM POOL DEPTH (certimeters); AVERAGE BANKFULL WIDTH (meters) OrgEPA Primary Headwater Habitat Evaluation Form R DR SUMBS (16 pm) (16 pm) (16 pm) (17 RIVER CODE RIVER BASIN LONG BANK FAIL WIDTH (Measured as the average of 34 measurements) and considered to the average of 34 measurements and considered to the second of Clareco] COMMENTS SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Total of Percentages of OOO (A) ! |} SITE NUMBER ST DATE 102 OUR SCORER BEST COMMENTS COMMENTS **₹₹00000 000000** ممم 000

MAPPING. ATTACH COMES OF MAPS, INCLIDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream

(If Yes, Attach Completed QHEI Form)

ADDITIONAL STREAM INFORMATION THIS INformation Mark Also be Complete

OHEI PERFORMED? - O'Yes (Ale OHEI Soon)

DOMNSTREAM DESIGNATED USE(S)

O WWH Name:
O CWH Name:
D EWH Name:

NRCS Soil Map Stream Order

NRCS Soil Map Page:

Hawn

USGS Quadrangle Name: NW

Township / City

0

Date of last precipitation: UNKm. AWM

Base Flow Conditions? (Y/N): V

MISCELLANEOUS Meigs

County:

Conductivity (unhos/cm)

PH (S.U.)

Dissolved Oxygen (mg/l)

Temp (*C)

Field Measures:

Canopy (% open):

Elevated Turbidity? (YNI): N

Photograph Information:

Were samples collected for water chemistry/ (YM); N

If not, please explain

Is the sampling reach representative of the stream (YNI)

Additional comments/description of pollution impacts:

BIOTIC EVALUATION

(Note lab sample no. or id. and attach results) Lab Number.

	ATTACHMENT D Page 30 of 66
Performed? (YM): (If Year, Record all choservations, Voucher collections optional, NOTE; all voucher samples must be begated with the clies. In tumber, include appropriate field data sheets from the Pishany Headwaler Habital Assessment Manual). Fish Observed? (YM), \(\bar{\text{V}} \) Voucher? (YM), \(\bar{\text{V}} \) Salamanders Dobewor? (YM), \(\bar{\text{V}} \) Voucher? (YM), \(FLOW TO BOOK TO THE COMPAGE TO THE C

Open Pasture, Row Crop Mining or Construction

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Urban or Industrial

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Immature Forest, Shrub or Old Residential, Park, New Field L R (Most Predominant por Ba Mature Forest, Wetland Throater Forest, Shrub or Flad

Considerated Park, New Fie

R (Per Bank)

Mide > 10m

Moderate 5-10m RIPARIAN WOTH

Nanow <5m COMMENTS

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This information mast also be completed
RIPARIAN ZONE AND FLOODPLAIN QUALITY CNOTE: River Loft (L) and Right (R) as booking downstream's

FLOODPLAIN QUALITY

L R (Most Predominant per Bank)

Noist Channel, isolated poots, no flow (Intermittent) Dry channel, no water (Ephemeral)

FLOW RECINE (At Time of Evaluation) (Cheek Ont.) rone box): Stream Flowing

Stream Flowing Subsurface flow with isotated pools (interstitiat) COMMENTS

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Severe (10 th/100 ti)

☐ Moderate to Severe

Moderate iz wroon;

Flat (0.5 tiv100 tt)

October 24, 2002. Revision

PHWN Form Page - 1

8 %

Check ONLY one box):

SINUDSITY (Number of bends per 61 m (200 ft) of channel)

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1.0
1.0
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ATTACHMENT Page 31 of 66 (If Yos, Rocard all abservations. Youcher collections optional. NOTE; all voucher samples must be labeled with the site. Or number, include appropriate field data sheels from the Primary Headwater Hebital Assosament Menual) Include important landmarks and other features of interest for sile evaluation and a narrative description of the stream's location Mapping: attach copies of Maps, Including the <u>entire</u> watershed area. Clearly Mark the site Location NRCS Soil Map Stream Order Fish Observed? (YNN) 4. Voucher? (YNN) Salamanders Observed? (YNN) Voucher? (YNN) Voucher? (YNN) Voucher? (YNN) 4. Voucher? (YNN) 5. Vouch DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed); Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Conductivity (umbas/cm) (Note lab sample no. or id. and attach results) Lab Number. (if Yes, Attach Completed OHEI Form) 0 NRCS Soil Map Page: PH (S.U.) ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed) Date of lest precipitation: 101/0000 If not, please explain: Township / City. Canopy (% open): 10 % _ Dissalved Oxygen (mg/l) OHEI PERFORMED? - 🗆 Yes 💢 No. OHEI Score JSGS Quadrangle Name. NEW HOVEN OH is the sampling reach representative of the stream (YNN) Were samples collected for water chemistry? (YM); [V Additional comments/description of pollution impacts; DOWNSTREAM DESIGNATEG USE(S) Base Flow Conditions? (Y/N): V BIOTIC EVALUATION Field Measures: Temp (°C)_ Elevated Turbidity? (YTN): 1 MISCELLANEOUS Comments Regarding Biology, Fish Observed? (Y/N) Photograph Information; County: Medas Performed? (Y/N): October 24, 2002, Revision O WWH Name:
O CWH Name: Pool Depth Max = 30 Bankfull Wichh Nax=30 8 0 ¥+8 NOTE/Complète All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions STREAM CHANNEL.

NOVE / NATURAL CHANNEL | DRECORRED | DRECOVERING | DREC DRAINAGE AREA (m?) / MI Severe (10 ly100 ft) Moist Channel, Isolated poots, no flow (Intermittent) Dry channel, no water (Ephernerst) 10 Mining or Construction Open Pasture, Row Crop Conservation Tiliage SUBSTRATE (Estimate persent 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 3), Final metric score is sum of boxes A & B. This Information must also be compided The Information must also be compided The Tool Floring downstreams. AND TE: River Left (L) and Right (R) as looking downstreams. Urban or Industrial 8 evaluation. Anote plange pools from road culverts or storm woug place). Chack Only Y are but;

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AVERAGE BANKFULL WIDTH (meters)

BANK FULL WIDTH (Messured as the average of 64 metaburen
Auforgane) Till group and
Till group (150 per)
Till group (150 per)
Till group (150 per)

COMMENTS

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(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old

Moderate 5-10m (Per Bank) Wide >10m

%0 0 0

Namow 45m COMMENTS

FLOODPLAIN QUALITY

RIPARIAN WIDTH

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Residential, Park, New Field

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Fenced Pasture

8 %

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Check ONLY one box):

SINUOSITY (Number of bands par 61 m (200 ft) of channe)
None
U 1.0
0.5

FLOW REGIME (At Time of Evaluation) (Check O'NLY one bay):
Stream Flowing
Subsurface frow with solated pools (Interstital)
COMMARHTS

☐ Moderate to Severe

Moderate 12 fv.op m

STREAM GRADIENT ESTIMATE

Flat (0.5 (Uncont.)

October 24, 2002, Resisten

HWH Form Page - 1

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FINE DEFINALS (3 psg)
FINE DEFINALS (3 psg)

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BUDAS, ABS I am Blands SALDES

SOULDES (256 mm) 15 cost SALDES (256 mm) 15 cos

YOO O O O O

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES.

Total of Percentages of Bid: State, Boulder, Cobble, Bedrock

> 50 centimeters (20 pts) > 225 - 30 cm, (30 pts) > 10-- 22.5 cm (25 pts)

000

COMMENTS

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Chieff Primary Headwater Habitat Evaluation Form

H SOME

RIVER CODE

RIVER BASIN LONG.

SITE NUMBER 5 ()

COMMENTS

LENGTH OF, STREAM REACH (1) 200 LAT.

OATE \$1/22 Decorer \$600.

ATTACHMENT D

				Page 32 of 66
ADDITIONAL STREAM BE ORGANIDA (The Information Rest Also be Companied);	E EMIRE V	MESCELLANEOUS W. Conditions ? (1979). The behavior of the second of th	A Banagay	Correct 2002 health
Primary Headwater Habitat Evaluation Form HHEI Score (sum of matrice 1, 2, 3): 27	SITE NAME CONTON SITE NAME CO	SUBSTITATE Estimate percent of every type of substance present. Check CALV Year prodominant substance 71/PE bases (Max of S2), Add that furnither of significant substance types found (Max of S2). Add that furnither of significant substance types found (Max of S). Final methe score to sum of boxes. A & B. BENEVICE (25.56 mm) its paid CALVEL (25.46 mm) its paid CALVEL (25.47 mm) its paid C	MK FULL WORTH (Incesting as the average of 3-4 measurements) In -4.0 m C 9 77 - 43) [25 pe] In -3.0 m C 9 77 - 43) [25 pe] MINENTS REPARAN ZONE AND FLOODE LAN EXAMINATION ENGINE RAN EXAMINATION (IN PORT BANK) REPARAN ZONE AND FLOODE LAN EXAMINATION SHOUTE: RAN EXAMINATION (IN PORT BANK) REPARAN ZONE AND FLOODE LAN EXAMINATION SHOUTH (IN PARAM EXAMINATION CONTROL OF THE SHOUTH (IN PARAM EXAMINATION CONTROL OF	Statuffee from the boased pools (Motrafile) Dy Channel, no water (Ephemena)

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Primary Headwater Habitat Evaluation Form HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2): 30 HHEI Score (sum of matrice 1, 2): 30 HHEI Score (sum of matrice 1, 2): 30 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2, 3): 39 HHEI Score (sum of matrice 1, 2): 30 HH	SUBSTRATE (Estimates personn of supplicate abovers to the control (Naz of 2), Frai melitic some is sum of blocks A & B. NATION (Naz of 32), Add total number of significant substrate types of outsetting processes and of blocks A & B. NATION (Naz of 32), Add total number of significant substrate types of outsetting processes and of blocks A & B. NATION (Naz of 32), Add total number of significant substrates bytes of some and the control of some and the cont	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	This information must also be completed REPARLIAN ZONE AND PLODDELLAN QUALITY SCHOOLING THE (L) and Bight (R) as tecking downstreams the representation of the representation o

OF IMPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

Distance from Evaluated Sixtem Distance from Evaluated Stream Distance from Evaluated Stream

(if Yes, Attach Completed QHEI Form)

NRCS Soil Map Stream Order

NRCS Soil Map Page:

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's foreitton DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): 1th CAND Stream 9

Moist Chennel, isolated pools, no tow (Intermittent) Dry channel, no water (Ephemeral)

FLOW REGIME to Time of Evaluation] (Chack ONLY are box):
System Flowing
Substitutes flow with bedated pools (Interstition)
Coulemnate flow with bedated pools (Interstition)

Nane COMMENTS

kecord all observators. Voucher collections optional. NOTE; at voucher samples must be labelled with the site or. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual

Conductivity (unhasion)_

PH (S.U.)

the stream (Y/N) / If not, please explain.

(Note tab sample no, or id, and attach results) Lab Number,

Quantity

Chaire of lest precipitation: MAKALDIAM

A (YN) Salamanders Observed? (YN) W Voucher? (YN) W Voucher? (YN) W Voucher? (YN) W

PHINH Form Page - 1

October 24, 2002 Revenir

October 24, 2002 Revision

Severe (10 ff) (04)

Moderate to Severe

Moderate (2 Moderate

STREAM GRADIENT ESTIMATE G Fat (9.5 tyton) Kint to Moderale

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ATTACHMENT D
Page 34 of 66

DRAWHING AND NARRATINE DESCRIPTION OF STREAM REACH (This guige be completed): include important landmarks and other features of internation site contention and a sumsitive description of the extreme, bea

ADDITIONAL STREAM INFORMATION (The Information than two to Computed);	
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AVERAGE BANGFULL WIDTH (meims) Kind Control of the Control of the

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MAXIMUM POOL DEPTH (cantimeters):

(Check OWL Yone box): > 1.0 m - 1.5 m (> 3.5 - 4.6 l) (16 pts) a 1.0 m (> 3.3) [s pts]

assured as the average of 3-4 measurement.]

> 4.0 meters (> 131] [20 pts.] > 3.0 m - 4.0 m (> 6° 7" - 131] [26 pts.] > 1.5 m - 3.0 m (> 9° 7" - 4° 8") [20 pts.]

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| Company | C

30

10%

SILT IP PU LEAF PACKOWOOOY DEBRIS IS PID) FINE DEFRITUS IS PAD) CLAY OF HARDPAN ID PO

Bitr Status, Boulder, Cobble, Bedrack
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

COBBLE (65-256 mm) [12 pts] GPAVEL (2 64 mm) [8 pts] SAND (~2 mm) [6 pts]

BLOR SLAB**Š (16 pm)** BOULDER (>256 mm) (16 pm) BEDROCK (16 pm)

MUCK ID 1001 ARTHFICIAL [3 pts]

NOTE: Complete All thems On This Form - Refer to "Field Evaluation Manual for Oblo's PHWH Streams" for Instructions

DRAINAGE AREA (ms) 4

RIVERCODE

RIVER BASIN

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COMMENTS

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

Primary Headwater Habitat Evaluation Form

Clars H

MINOMEZNATURAL CHANNEL () RECOVERED () RECOVERING () RECENT OR NO RECOVERY

STREAM CHANNEL MODIFICATIONS:

SUBSTRATE (Estimate percent of avery type of substante present, Chock OALY bug prodombant substand 17/PE boxos. (Max of 32), Add total number of significant substante types found (Max of 5). Final metric score is sure of boxes A & B.

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October 24, 2002 Reubster

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CAMEL PERFORMED? - Tives Alba CHEI South (If Yes, Albach Completed QHEI Form)	DOWNSTREAM DESIGNATED USE(S) C) YOMN Name: C) CVM Name: C) CVM Name: C) EVM Name:	WESCELLANGOUS Concilions? (YNV). Date of last precipitation include? (YNV). Carrapy (% open): pies oo leaded for water cascelleby? (YNV): Manually (YNV): Carrapy (% open): Obsolved Oxygen (ing) Why reach representative of the stream (YNV)	Additional comments/description of politrien impacts: BIOTIC EVALUATION (If Yes, Peccod all observations. Vocation confections optimal. NOTE all vocator samples must be isosted with the alle in December (YM): This is the alle isosted with the aller is	DRAWRING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include Important bridments and other features of inforest for ribe ovaluation and a narrative description of the stream's location pool in the stream's location and a narrative description of the stream's location and a narrative description and	FLOW J. PHYSA: BINES
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PHMH Form Page - 1

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Sovere (rominon)

Moderate to Severe

O Moderate (2,7400 tu

STREAM GRADHENT ESTIMATE

C) Fig. (6.51/100)

C) Fig. (6.51/100)

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Check ONLY one box):

SINUOSITY (Number of bends per 61 m (200 ft) of charmel)
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0.5
1.0
1.6

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October 24, 2002. Newskip

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION NRCS Soil Map Stream Order Distance from Evaluated Stream Conductivity (umhos/cm) (Note tab sample no, or id, and attach results) Lab Number (If Yes, Attach Completed CME | Form) NRCS Soil Map Page: UnKnown ('U'S) Ho is the sampling reach representative of the stream (Y/N) X If not please explain; Canopy (% open): 5 % _ Dissolved Oxygen (mg/l) ___ CHELPERFORMED?. O'Ves X No. OHELSON. Date of last precipitation; USGS Quadrangle Name; NPW HOWER OH Were samples collected for water chumistry? (Y/N); 🙏 Additional comments/description of pollution impacts:_ DOWNSTREAM DESIGNATED USE(S) Pués Base Flow Conditions? (YN): BIOTIC EVALUATION Field Measures: Temp (*C) Comments Regarding Biology: NISCELLANEDUS Elevated Turbidity? (Y/N): _______ Photograph Information: Performed? (YIN): 🗡 COWH Name: U WWH Name County: interestration description descriptions described descri Substrate Max = 40 Bankfull Width Max=30 25 <u> 2</u> ₩ + 4 NOTE: Complete All Mems On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions ſΩ DRAINAGE AREA (m²) 4/111 ₹.6 . SUBSTRATE (Estimate percent of every type of substrate present. Check OVLY<u>twe</u> predominant substrate TYPE boxes (Max of 32), Add total number of significant substrate types found (Max of 32), Add total number of significant substrate types found (Max of 3). Final matric score is sum of boxes A & B. The information round also be completed

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EROBERAN ZONE AND FLOODPLAN QUALITY CANOTE: River Left (L) and Right (R) as looking downstreams's EROBERAN WINTH

ELOCOPOLANIO CIALITY

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OFFI REAL TO THE CONTROLLY HHEI Score (sum of metrics 1, 2, 3): Maximum Pool Depth (Measure the maximum pool depth within the 67 meter (200 ft ocaluation mach at the time of evaluation. Avoid plange pools from noted culvests or storm water ploce) (Check Only to we but)

(Storie of the control o TOTAL NUMBER OF SUBSTRATE TYPES: MAXIMUM POOL DEPTH (certifineters): AVERAGE BANKFULL WIDTH (meters) cents) (Check ONLY one box): > 10th | 15th | 3 | 1837 | 5 pt | > 10th | 23 | 18 pt | RIVER CODE ELOCOPE AIN OLIGHTY

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Mahure Forest, Wedland

Immahure Forest, Shrub or Old LONG RIVER BASIN BANK FULL WIDTH (Messured as the average of 3-4 measuren

Statistical for the profession of the second of the statistics and the second of the Total of Percentages of But Slats, Boarber, Cabble, Bedrock, 1000 (A) 12. SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: COMMENTS

PERCENT

15%

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Total of Percentages of Bidr States, Boulder, Cobble, Bedrock

COMMENTS

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COMMENTS

ADDITIONAL STREAM INFORMATION (THIS Information Most Also be Completed)

Primary Headwater Habitat Evaluation Form

SITE NUMBER 512

Hun P

LENGTH OF STREAM REACH (1) 200 LAT.

DATE \$\times 2 \text{10108CORER BEYON } \text{}

Class III

pooles, Frest 1800

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

Pool = 3

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DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed);

ATTACHMENT D

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Jonnes 24, 2002 Revision

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Moderate to Severe

M Moderate primming

FM (0.5 M100 N)

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1.0
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FLOW REGIME (At Yimo of Evaturation) (Check ONLY one box).
Stream Flowing
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Stream Flowing Subsurface flow with Isolated pools (Interstitial)

Mining or Construction

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Residential, Park, New Field

000

O O Moderate 5-10m Narrow <5m

Wide >10m

Fenced Pastura

COMMENTS

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Conservation Tillage Open Pasture, Row Grap

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Urban or Industrial

October 14, 2002 Rawhie

COMMENTS

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ALIA O

SITE NAME LOCATION

RIPARIAN WIDTH

Moderate 5-10m (Per Bank) Wide >10m

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Narrow <5m

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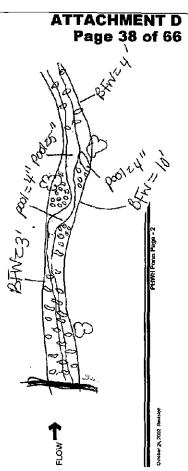
G Flat (0,5 Tu100 ft)

October 24, 2002 Reservor

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CLOCA TITE CHAPTER Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): [out the control of the co	STEADON LAT. SCHER BETT COMMENTS SCHER BETT COMMENTS Illiams On This Form - Refer to "Freid Evaluation Manual for Ohio's PHVIH Streams" for Instruct The feet of the feet to "Freid Evaluation Manual for Ohio's PHVIH Streams" for Instruct The feet of the feet of the feet feet of the feet of	SUBSTRATE (Estimate percent of every type of substrate persons Court by tag produminal substrate TYPE boxes (Max of 32) Add total number of significant substrates present. Once (OM.Y tag produminal substrates) (Max of 32) Add total number of significant substrates present. Once (Max of 8), Final metric score is some of tones A & B. (Max of 32) Add total number of significant substrates bytes found (Max of 8), Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is some of tones A & B. (Max of 9) Final metric score is score in the contract sc	water pipes	1. BANK FULL WIDTH Microuned as the surrage of 3-4 measurements) (Check ONLY one bod; Width Check ONLY one bod; Width Check ONLY one bod; Width Check one byte or passing the state of the	This information many sho be completed REPARLAN ZONE AND FLOODPLAN BUALITY STATE IN THE ACTUAL STATE IN CHARLET STATE IN THE CONTROL WAS STORED IN THE CONTROL CHARLET STATE IN THE CONTROL WAS STORED IN THE CONTROL OF THE C	E (At Time of Evaluation) (Check ONLY and g w with Isolated pools (Interstibil)	SINUDSITY (Number of bengaper 6 None None O 0.5 C C C C C C C C C C C C C C C C C C C	California Causes Etter to Moderate Mandarate common Etteriorate to Source Causes

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DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed): helide important landmarks and other features of internation for site evaluation and a narrative description of the stream's location



PHWH Form Page - 1

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CHUSS THE PARTIES FORM HHEI Score (sum of metrics 1, 2, 3): [22] SITE MANDLOCATION SITE NUMBER S IS RIVER BASIN LENGTH OF STREAM REACH IN 202 LAT. LONG DATE 72 3012 SCORER SECOND COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Othio's PHWH Streams" for Instructions STREAM STREAM STREAM CONTRACTOR TO THIS FORM STREAMS TO THIS FOUND.	uniber of significant of some of significant of sig	Maximum Pool Depth (Measure the meathring pool dopin within the 85 mater (200 fit evaluation reach at the time of evaluation. And plunge pools from road culverts or storm velocines.) Control of the

(If Yes, Attach Completed QHE! Form)

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looking downstream	Conservation Tillage Urban or Industrial	Open Pasture, Row Crop Mining or Construction	cols, no flow (Interm phemoral)	97 27	Severe (10 turbo t)	
mpleted (L) and Right (R) as	≈ 3, -00 -00	000	Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no woter (Ephemoral)		U Moderate to Severe	
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October 24, 2002 Revision

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DOWNSTREAM DESIGNATED USE(S) WWH Name: CAWH Name:	MAPPING: ATTACH COPIES OUSCS Questrangle Names, MPLM, COMMY:	MISCELLANEOUS W Conditions? (VIN): 4	Elevated Turbidity (YAN) \(\frac{1}{N} \) Cenopy (% open Were samples collected for water chemistry) (YAN); \(\frac{1}{N} \) Field Measures: \(\tau \tau \) Presentative of the stream (YAN) is the sampting reach representative of the stream (YAN) \(\frac{1}{N} \)	Additional comments/description of pollution impacts:	Performed? (Y/N); (3 Yes, F. Dramh Flan Observed? (Y/N), X. Vocaming Flags or Tedpoies Observed? (Y/N), X. Comments. Regarding Blology.	DRAWING AND NAF	FLOW \$ WAYER 7	October 24, 2002 form

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NRCS Soil Map Page: NRCS Soll Map Stream Order

Couentity:

Date of last precipitation: UNKN JMM

Base How Conditions? (Y/N);

Conductivity (umbos/cm).

_ PH (S.U.)

__ Dissolved Oxygon (mg/l) __

Field Mossures: Temp (°C)_

If not, please explain:

Is the camping reach representative of the stream (Y/N)

Additional comments/description of pollution impacts;

BIOTIC EVALUATION

Were samples collected for water chemistry? (VN): N (Note tab sample no. or id. and attach results) Lab Number.

Canopy (% opon): 596

Elevated Turbidity? (YIN):

Photograph Information:

Distance from Evaluated Stream Distance from Evaluated Stream.

(If Yes, Attach Completed QHE! Form)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

OHEI PERFORMED? . D'Yes (M. OHEI SOM) ___

DOWNSTREAM DESIGNATED USE(S)

U WWH Name;
O CWH Name:

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTINE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name, UCLA, HOURS, OH

County. MALLES MISCELLANEOUS

Township / City:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

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

ATTACHMENT D Page 40 of 66 11.92/00 J. 00 FLOW

October 24, 2002 Revision

C Severe (10 m/100 ft)

Moderate to Severt

Moderate (2 mros m

STREAM GRADIENT ESTIMATE

1 (0.5 kH to Moderate

☐ Flat (c,5 terroom)

8 2 00

(Check ONLY one box):

SINUOSTY (Number of bends per 61 to (200 ft) of channel)
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0 1.0
0.5

ATTACHMENT D Page 41 of 66

ADDITIONAL STREAM NFORMATION (The Information Must Also be Completed):	OHEI PERFORMED? - (1) Yes (1) CHEI Soore (If Yes, Allach Completed CHEI Form) DOWNSTREAM DESIGNATED USE(S) UNWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream	UNGARCA PROPRIES OF MAPS, INCLUDING THE <u>BUTTEE</u> WATERSHED AREA, CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name. LPAY HQUYAY QHA NRCS Soil Map Page. NRCS Soil Map Stream Order County. Township J. C. Township J. C.	S Date of last precipitation	Elevated Turbidity? (YNN): 1 Canray (% open): 10.90. Were samples collected for water chemistry? (YNN): 1 (Note lab sample no. or id. and attach results). Lab Number. Field Measures: Tomp (**C). Dissolved Oxygan (nogi). PH (S.U.). Conductivity Winnbaston).	is the sampling reach representative of the stream (VNN) / If not, please explain: Additional comments/description of pollution impacts;	BIOTIC EVALUATION	Performed? (VIN): (If Yos. Resert all observations. Voudint collections options). NOTE: all rougher semples must be included as included in Diratives. Holder appropriate field cits sheet firm his Primary Hoselwear Habita. Assessment Mahuaf). Find Observed? (VIN): Vouding? (VIN): Assessment Mahuaf). Finger or Tablobes Observed? (VIN): All Assessment Primary Assessment Mahuaf). Voucher? (VIN): VOU	Continents Regarding Bildogy.	
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NRCS Soil Map Page; NRCS Soil Mat Stream Order

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

(if Yes, Record all observations. Youther collections options), NOTE: all youther samples must be labeled with the aile ID number. Include appropriate field data sheets from the Primary Headweler Habital Assessment Manust)

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Open Pasture, Row Grop Mining or Construction

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Residential, Park, New Flekt

Fenced Pasture

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Conservation Tillage

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(Most Predominant per Bank) Mature Forest, Wedand Immalure Forest, Shrub or Old

-18] [Š] ∝[Š] [S]

Moderate 5-10m Namow <5m Nane COMMENTS___

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Wide >10m

-}**2**7.0 ≈**2**7.0

Urban or Industrial

F.I.OW REGIME (A177) and a S-resultation) (Check CMLY one bax): Most Channel, isotated packs, no flow (informittent) Subsurface flow with Isolated pools (interstitial)

Subsurface flow with Isolated pools (interstitial)

OOMMENTS.

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October 24, 2002 Revision

PHWH Form Page - 1

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Woderale to Severe

U Moderate (2 fines II)

STREAM GRADIENT ESTMATE

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OF Hat (0.5 1/2/00/1)

88

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ATTACHMENT D Page 42 of 66

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Classo II	Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): 4		CHARLESTANTED TO THE PROPER CONTROL OF THE CHARLESTANTED TO THE CHARLESTANT OF THE CHARLE	SUBSTRATE (Estimate percent of every type of substants present. Check OMJ Yaro predominant substants TPPE baxes (Max ol 32). Add total number of significant substants types found (Max of 8). Finst metric score is sum of bross A 8. B. PROCEED. SUBPLY SANSS (March) SUBPLY SANSS (March)	10 10 10 10 10 10 10 10	Total of Percentages of STO (4) 32 Bid State Bodock STO (5) 4 A+B SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:	2. Razdmurn Prool Depth (Researce the maximum pool depth within the 67 meter (200 fi) eveluation wash at the firms of read through the control of the contro	IAXMIN POOL DETTH (centimeters):	COMMENTS CONTRIBUTION OF THE PROPERTY OF THE P	This information great also be completed REPARTAN ZONE AND PLOODELAIN QUALITY CHOIDE River Left (L) and Right (R) as looking downstroams: REPARTAN YOUNG AND PLOODELAIN QUALITY L. R. Prese Bankl L. R. A. Montre Freed, whether Check (L) Conservation Tillians With your Check Check (Martine Freed, Welfand)	Moderate 5-10m (2017) Immalatire Potast, Shutb or Old Old Nanow -Scn Old Residentiat Part, New Field Old Nanow -Scn Old Fenced Patture Old Nanowers	FLOW NEGSIME (At Time or Evaluation) (Check OMLY one book) Stream Forming Stream Forming Moist Channel, isolated pools, no flow (Intermitiant) Substraintee flow with isolated pools (Interation) Substraintee flow with isolated pools (Interation) Oxforming flow with solated pools (Interation) Substraintee flow with isolated pools (Interation)	Shrutostry (Number of bends, per 61 m (200 ft) of channel) (Check Chit. Y one box): 0 3.0	STREAM GRADIENT ESTEMATE CHAR AS Annoton CHair to Moderate (2 Moderate (2 Moderate to Severe (10 mmm))	October 24, 2002. Revision PHVVH Form Plage - 1

Campy (the open): 500	Vere samples collected for water chemistry? (VMt): FV_ (Note lab sample no. or id. and attach results) Lab Number: Temp (**C) Dissolved Oxygen (mg/f) pH (G-U.) Conductivity (umhos/cm)	, please explain;	polivition (mpactas:	BIOTIC EVALUATION Performed? (VM); (If Yes, Record all observations, Voucher scilections optional. NOTE: all voucher samples must be labeled with the site. ID number. Include appropriate field clara shees from the Primary Headwater Habital Assactsmant Manual). The Control of the Contro
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Page 43 of 66 "----tation of the stream's location NRCS Soil Map Stream Order MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION DRAWING AND NARRATIVE DESCRIPTION OF STPT+M REACH (This must be completed): Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream (Note tab sample no. or id. and attach results) Lab Number. (if Yee, Allach Completed QHEI Form) NRCS Soil Map Page: A01=8" Date of last precipitation: UNKINEMM ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed is the sampling reach representative of the stream (Y/N) if not please explain Cray fish observed Canopy (% open): 590 include important landmarks and other features of interes Held Measures: Temp (*C)_____ Dissolved Oxygen (mg/l)__ CHELPERFORMED? . The AMELSON ð Were samples collected for water chemistry? (YMV): 1 Section 1 USGS Quadrangle Name: NOW HOUPA Additional comments/description of pollution Impacts; DOWNSTREAM DESIGNATED USE(S) Elevated Turbidity? (Y/N): Base Flow Conditions? (Y/N); Comments Regarding Biology: MISCELLANEOUS Photograph information: Jetober 24, 2002 Raidala WWH Name: County Substrate Max = 40 Pool Oceth Max = 30 30 Barnetul! A+B

ATTACHMENT D

HWH Form Page - 1

October 24, 2002 Revision

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Stream Flowing

Check ONLY one box): RIVER BASIN. LONG Fenced Pasture FLOODPLAIN QUALITY StrucSTY (Number of bands par 61 m (200 ft) of channel)
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Subsurface flow with isolated pools (interstitial)
COMMENTS 00 **∠**⊠ Ω - □ □ Historial Lineal Control of the Cont RIPARIAN WICTH Moderate 5-10m (Per Bank) Wide >10m Narrow <5m COMMENTS COMMENTS COMMENTS ☐ Flat (0,5 (v1co t) <u>م</u> -180 0 84 0 ⊠ DD. #**CO CO CO**

Substrate Max = 40 Considerantia. Mase and the growing Common Decountry Common Commo 15 Bankfull Width Max-30 3 NOTE: Compide All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions ¥ Mining or Construction SIBSTRATE (Estimate percent of overy type of substante present. Check OW, Yugo predominant substante 1745 boxes (Max of 32). Act local number of significant substante types found (Max of 3). Final motife score is sum of boxes A & B. HHEI Score (sum of metrics 1, 2, 3): This information must also be comploted

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FLOODPLAIN QUALITY Opon Pasture, Row Crop Urban or Industrial PERCENT Maximum Pool Depth (Nessure the maximum pool depth within the 6f meter (200 ff) evaluation reach at the time of evaluation. Avoid plunge pools from tool culterents of storm water place). (Check Coll. Y one box):

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> 1.0 m/s (3.5 % (3.5 ps) | _0 0 0 0 0 RIVER CODE TATE TO SEE (Most Predominant per Bank) Mature Forest, Wedland Immature Forest, Shrub or Old Residential, Park, New Reld SITE NUMBER \$ 20 RIVER BASIN CONG Fenced Pasture COMMENS to the second as the average of 34 measurem

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Mark Full WIDTH (Measurem as the average of 34 measurem as the average of SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: COMMENTS 3 25% The part of the pa - **X** D 00 PERCENT LENGTH OF STREAM REACH (M) LA' DATE S 24 OLL SCORER BEDD The tart first of the state of Total of Percentages of Bidr Slabs, Boulder, Cobble, B Moderate 5-10m Матом с5т (Per Bank) Wide >10m COMMENTS COMMENTS 00

ATTACHMENT D
Page 44 of 66 DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): meture flest Mature-forest BFW=41 FLOW

(if Yez, Razori all observations. Voucher collections optional. NOTE: at voucher samples must be labeled with the site to number. Include appropriate field data scheme them the Printery Headwater Habitat Accessment Manual)

Conductivity (unhos/em)

_ pH (S.U.)

__ Dissolved Oxygen (mg/l) ___

Field Measures: Temp ("C)

Were samples collected for water chemistry? (YIN):

2

Elevated Turbidity? (YIN):_

Photograph Information:

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):

(Note tab sample no, or fd, and attach results) Lab Number.

Fish Observed? (YIN) M Voucher? (YIN) Salamanters Observed? (YIN) M Voucher? (YIN) M Voucher.

Comments Regarding Biology,

NRCS Soil Map Stream Order

NRCS Soil Map Page:

USGS Quadrangle Name: NEW BOLKIN OH

County DAMAS

Township / City:

Date of leat precipitation: UNKINIM

Base Flow Conditions? (YM): 1 MISCELLANGOUS

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

Distance from Evaluated Stream Distance from Evaluated Stream

(If Yes, Allach Completed QHE! Form)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed

CHEIPERFORMED? - [] Yes | | No CHEISCOM __

DOWNSTREAM DESKANATED USE(S)

O WWH Name: _
COM Name: _
CHH Name: _

October 24, 2002 Rewaton

C) Severe (10 m106 ft)

Woderate to Severe

Moderate (2 n/10) il

STREAM GRADIENT ESTEMATE

Flat rous et on this

8 ×

Moist Channel, Issieted pools, no flow (Intermittent) Dry channel, no water (Ephermeral)

Stream Flowing Subsurface flow with isolated pools (interstitial)

October 21, 2002; Revisio

PHWH Form Page - 9

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122 2 Letions	HHEI Metric Points Substrate Max # 40	Pool Dupth Max = 30 // Bankful Windth Max = 30
CHOOT III CHEST PARTY Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62] HHEI Score (sum of metrics 1, 2, 3): [62]	bourse A & B. Forces A & B. Fo	lipidis (more)
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-Ø.□ -Ø.□		L R (Most Predominant per Bank) Makura Forest, Welland G G Humsture Forest, Shrub or Old	nt per Bank) ellend Shrub or Old	~0 0 0 0 ∞	Ganservation Tillage Urban or Industrial
00	Narrow <5m		New Field	0	Open Pasture, Row Crop
U) 	None COMMENTS	☐☐ Femed Pasture		8	Mining or Construction
D \$ X	FLOW REGIME (At Time of Evaluation) (Check ONLY one box) Subsurface with isolated pools (intersities) Connectivity	ation) (Check ONLY one box) (Interstilist)		reclated por water (Epi	Moist Channel, isolated pools, no llow (Internition). Dry channel, no water (Ephenteral)
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STREAM () Flat (0.5 AT 100 a)	STREAM GRADIENT ESTWATE	Moderate (2 m/100 ft	Woderate to Savere	Savere	Severe (towntoon)

Performed? (T/N): (If Yes, Record at absenset.ges. Vougner collections options. NOTE: at voucher samples mest be tabled with the altertainty of the samples NRCS Soil Map Stream Order Conductivity (umbos/cm) Were samples, collected for water chemistry? (Y/N): 🖊 (Note lab semple no. or id. and attach results) Lab Number NRCS Soil Map Page: Date of lest precipitation: Unit harm is the sampling reach representative of the stream (VIN) / If not, please explain. Township / City: Canopy (% open): 0 % Field Measures: Temp (*C) Dissolved Oxygen (mg/l) USGS Quadrangle Name: New Halk A. D.H. Additional comments/description of pollution impacts:_ Base Flow Conditions? (YNN): Elavated Turbicity? (Y/N): N Miles MISCELLANEOUS Photograph Information: County:

Mapping: Attach cories of Haps, including the <u>entire</u> watershed area. Clearly Mark the Site Location

Distance from Evaluated Stream.

Distance from Evaluated Stream.

Distance from Evaluated Stream.

(If Yes, Atlach Completed Ciric Form)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

CHEI PERFORMED? - () Yes XINO CHEI Score

DOWNSTREAM DESIGNATED USE(S)

U WWH Name: C CWH Name: C EWH Name: PRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other facilities of interest for site evaluation and a narrative description of the stream's location
FLOW

FLOW

MATITE FOR THE STREAM REACH (This must be completed):

ANCELO FROM THE FORTER THE STREAM REACH (This must be completed):

ATTACHMENT D

October 24, 2007 Ravislor

PHWH Form Page - 1

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IDON (This Information Must Also be Co	CHEI PERFORMED7 - D'YOS AUNO OMEI Soore (I'YOS, AII DOWNSTREAM DESIGNATEO USE(S) DOWN Hamm: CHAIN Marne:	MAPPING, ATTACH COPIES OF WAPS, INCLUDING THE ENTIRE WATERSHED USGS CWADDANG, NEW HOLD HOLD OF TOWNSHOLDING TOWNSHOLDING	Date of tast precipitation	Were samples collected for water chemistry (VRN); \(\begin{array}{ccc} \Quad \text{(Note to Earnple no. or id.)} \\ \end{array} \) Field Messures: Temp (**C) \(\begin{array}{ccc} \Quad \text{CESONPSQ (Not)} \\ \end{array} \\ \text{is the sampling reach representative of the chemin (VR)} \end{array} \) Is the sampling reach representative of the chemin (VR) \(\begin{array}{ccc} \end{array} \)	Additional comments/description of pollution impacts. BIOTIC EVALUATION	Performatt (YM):	DRAWING AND NARRATIVE DESCRIPTION OF STREAM	Include Important languages and other features of interest for site evaluations.	FLOW \$ 23 PEN-		, ,	Outhor 24, 3003 Revision
Original Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):	AML P SITE NUMBER 5 20 RIVER BASIN ORANIAGE AREA (m²) L/M) 2 ENGH DE STREAM REACH (M 200 LAT CONG. RIVER CODE RIVER MILE ANTE X 8 4 9 10 12 SCORER DE M COMMENTS	NOTE: Complete All Items On This Form- Refer to "Field Evaluation Manual for Chio's PHWH Streams" for Instructions CHELLER PRINGE. MANUAL STREAM STREET STR	SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY has precominent substrate TYPE boxes. TYPE Nex of 22, Add total number of significant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Percent Net fine Proints Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Doints Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Only the precominant substrate types found (Nex of 9). Final methic score is sun of boxes A.R.B. Net fine Only the precision of th	TOTAL OF PROMISE OF TOTAL OF PROMISE OF TOTAL OF PROMISE OF TOTAL OF PREDOMINATE SUBSTRATE TYPES:	ol Depth (Measure the anaximum pool depth within the 61 orded pump poss from the cluster or storm water plots) and plots of the stages that it is not the stages that it is no	COMMENTS AND MIGHT FOR CONTRACTOR OF THE CONTRACTOR OT THE CONTRACTOR OF THE CONTRA	is Information mast also ALITY SHOTE Rive DELAN OLIMITY (Most Preformant pr Meune Forest, vivala	Madesta 6-10m (A) Immeter Forest Shrub or Old Old Marcus Sm Old Residential Park, New Field Old Name Old Femand Pasture Old Femand Pasture	R. OW REBINE (At Time of Evaluation) (Check ONLY one box): Substant Flowing Substant Flowing Substant flow with included prote (intermittant) COMMENTS	SINUCSITY (Number of bends par 61 m (200 ft) of channe) (Check ONL / one box):	STREAM GRADENT ESTIMATE C) Modernie in Severe (Ournon) (C) Fig. (n. 6. minor)	HWH Form Page - 1

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

undrangle Name: NUN HOLLEN OH NRCS SOI Map Page:

Date of fast precipitation: UNKADAW Quantity:

Distance from Evaluated Stream
Distance from Evaluated Stream
Distance from Evaluated Stream

(if Yes, Attach Completed CHEI Form)

NPCS Solt Map Stream Order

· · · · · · · · · · · · · · · · · · ·	ATTACHMENT D Page 46 of 66
Where sampling exact requirementative of the ciream (VM): A child bib sumple no original under the condition of the ciream (VM): A child (Messuaer. Temp (O)	INIC AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed in its instinct and other features of linears for site evaluation and a partitle description of the completed in its instinct description of the completed in its institution o

October 24, 2002 Ravision

ATTACHMENT D Page 47 of 66 (If Yes, Record all observations, Youther collections optional, NOTE: all voucher samples must be listeded with the site ID number, Include appropriate field date shoets from the Primary Headweller Hob ket Associament (Menual) Include important andmarks and other features of interest for site evaluation and e namative description of the stream's location MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION NRCS Soil Map Stream Order Hish Observed? (Y/N) X Vauchen? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) X Voucher? (Y/N) Props or Tradpoles Observed? (Y/N) X Voucher? (Y/N) DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Distance from Evaluated Stream
Distance from Evaluated Stream Distance from Evaluated Stream Conductivity (prehos/cm) Were samples collected for water chemistry? (YAN): New Job sample no. or is, and attach results) Lab Number. _ (if Yes, Attach Completed CIME! Form) NRCS Soil Map Page; _ (U.S) Hq _ Date of last precipitation. UNKNOWN Is the sampling reach representative of the stream (VIN) ADDITIONAL STREAM INFORMATION (This triormetion Must Also be Complete fownship / City. Canapy (% open): 10 90 Dissalved Oxygen (mg/l) QHEI PERFORMED? - [] Yes | | Wo OHEI Score. USGS QUADRING NAME: NEW HOLKIN OF Additional comments/description of pollution impacts; DOWNSTREAM DESIGNATED USE(S) 2017SIXS 40V Base Flow Conditions? (YIN): BIOTIC EVALUATION Tomp ('C) Elevated Turbidity? (Y/N) Comments Regarding Blology; MISCELLANEOUS 7 Photograph Information: _ Performed? (YIN): October 14, 2002 Revision O wwn name: O CWH Name; O EWH Name: Hold Measures: County.

Pool Ocpth

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MAXIMUM POOL DEPTH (centimeters):

BANK FULL WIDTH (Messured as the works of 3-4 meas

COMMENTS

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COMMENTS

Maximum Pool Death (Messura the maximum pool death within the 61 meter (200 ft) orehabion reach at the time of evaluation. Avoid jumpe pools from road culvarts or storm water piece. (Cheek ONLY one bax).

200 personners (2 pps)

200 personners (2

A + B

<u>(9</u>

TOTAL NUMBER OF SUBSTRATE TYPES:

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

Total of Percentages of Box Slabs, Boulder, Cobble, Bedrock

Services and services 1577.

59%

BOOK SLABS (FEBRA)

PERCENT

DRAINAGE AREA (m3) 4 (M) 4

RIVER MILE

RIVER CODE

RIVER BASIN LONG.

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

CLINOST.

Primary Headwater Habitat Evaluation Form

STREET METERS OF STREET STREET

SUBSTRATE (Estimate persons of every type of substrate present Check CML) two predominant substrain TYPE boxers (Max of 32), Add total number of significant substrain types found (Max of 32). Final metric score is sum of boxes A & B.

200

The State of the Percent of the Perc

PERCENT

NOTE: Complète All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

COMMENTS

AMA STEWNINGER S OFF LENGTH OF STREAM REACH (8) 150 LAT ONTE SOME STORES DE IN CO

Benktull Width Max=30

5

AVERAGE BANKFULL WIDTH (meters)

This information gust also be completed strong counsissant strait (i.) and Right (R) as tooking downstearnt stranking and Right (R) as tooking downstearnt

Open Pasture, Row Crop Mining or Construction

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Residential, Pert, New Field

- RR 00

0 ~【D -Q D

0

Fenced Pasture

Conservation Tillage

~D D

RODDRAN OWALD

I. R. (Most Predominan por Bank)

XIX Malure Forest, Welsand

XIXI Immistre Forest, Sivub or Old

RIPARIAN WIOTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m

Urban or Industrial

Molst Channel, Isolated pools, no flow (informittent) Dry channel, no water (Ephemeral)

COMMENTS.
FLOW REGIME (At Time of Evolution) (Check ONLY one bay):

Stream Flowing Subsurface flow with (solated pools (Intersitial)

COMMENTS

Severe (10 tal 100 ft)

Moderate to Severe

O Moderate (z rvnso tı)

STREAM GRADIENT ESTIMATE

Of Ala rasy 100 m)

Of Ala rasy 100 m)

Dolobor 24, 2002 Revision

PHWH Form Page - 1

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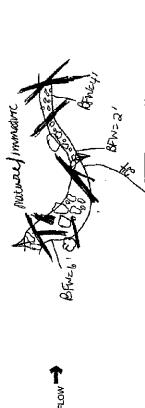
Check ONL Y and box):

SINUCSTY (Number of bends per 61 in (200 ft) of channel)
Vone
1.0
1.5
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ADDTIONAL STREAM	OWNSTREA OWNT Name: COWH Name: DEWN Name: USGS Quadrangia Name County:	MISCE ow Condition aph Inform a Turbidity imples co secures:	Additional costmentsides BIOTIC EVAL Performed? (VIN); Flat Observed? (VIN) Frags or Texpoise Observed? Comments Regarding Bill	DRALWIN	↑ FLOW	
Original Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):	SITE NAME COCATION SITE NUMBER S S S RIVER BASIN DATE STREAM REACH (IN SOUTH ONLY IN STREAM REACH (IN STREAM REACH (1. SUBSTIGATE (Estimate percent of every type of substants present. Check GM2 Ving predominant substance Pive homes Wax of 32) Add town number of significant substance types found (Max of 3), Final metric scane is sum of boxes A & B. Wellie GO State of the substance of every type of substants by the substance of the substanc	2. Wardingum Pool Depth (Measure the maximum pool depth within the of rentry CRO By evaluation reach at the time of which of working the object of the county of the count	This information must also be completed	FLOW REGINE (At Time of Businsticor) (Check ONL Y one box): Stream Flowing: Stream Flowin	STREAM GRADIENT ESTMANTE U RAMAS month U RAMAGETO TO SAVORE U SAME (MAS AND

DOWNSTREAM DESKANATED USE(S) O WWH Name: C WHI Name:	(If Yes, Artach Completed Unter Form)
U WWH Name:	
	Distance from Evaluated Stream
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MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>BATTRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION	EA. CLEARLY MARK THE SITE LOCATION
USGS QUADRANGIO NAMO: NELL HOLLY BY COS QUINAP PAGE.	NRCS Soil Map Stream Order
County: M.Q.(C.S. Township / City:	
MISCELLANEDUS	č
Base Flow Conditions? (VIN): \ Data of last precipitation: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-Quantity:
Blevated Turbidity? (YIN); 1 Canopy (% open): 1590	
or chemis	attach results) Late Number:
Field Measures: Temp ("Cl Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (pmbos/cm)
is the sampling roach representative of the stream (YIN)	i
Additional comments/description of pollution impects;	
BIOTIC EVALUATION	
Porformed? (VIN); (If Yes, Recend a) observations, Vocacher ratheritons optional. NOTE; all votabler tamples must be labeled with the site. Denimber: Include appropriate field data alreats from the Primary Heachwher Habilar Accessment Mannal)	OTE: all voucker camples must be labeled with the sile y Headwaler Habital Ausesament Manual)
Has Observed? (VIN) \underline{M} - Vaurya'? (VIN) Salamanders Observed? (VIN) \underline{M} - Voucher? (VIN) \underline{M} - Aqualta Nacroinvertebrake	Salamanders Observed? (YM) No Voucher? (YM) Voucher? (YM) Aquelle Macriamentchrates Observed? (YM) Voucher? (YM)

tandmarks and other teatures of interest for site evaluation and a narrative description of the atream's location G AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):



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October 24, 2002 Revision

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October 24, 2002. Rowson

	ક્ર્કું ુPage 49 of 6 6
ADDITIONAL STREAMINFORMATION TIPE Information Must Also be Completed: QHELP PERPORMEDY:	Test Observed (700) Test Observed (700) To number, Induce appropriate fall data stress from the primary hydrogene induce appropriate fall data stress from the properties of the post of
Wheric Solin's Sol Depth Rate 300 Open Rate	Width Special Control of the Control

NOTE: Complete All Rems On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruct

STITUTE STATE OF STATE STATES OF STA

SUBSTRATE (Estimate percent of overy type of eubstrate present. Check CMLY two predominant substrate 7PPE boxes (Max of 32). Act total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

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South the control of the control of

#000000

TOTAL NUMBER OF SUBSTRATE TYPES:

15

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

Total of Percentages of Betrock $309_{\mathcal{O}}$

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Nazirarum Pool Depth (Mozaulo the maximum pool depth within the SI mater (200 fill extraction reach at the time of evaluation. Aveid timings pools from the time of calveter or storm water pleas). (Cheek ONLY was box).

\$ 50 chieffing (aveign time) to the calveter or storm water pleas). (Cheek ONLY was box).

\$ 50 chieffing (aveign time) to the calveter or storm water pleas).

\$ 50 chieffing (aveign time) to the calveter of the

MAXIMUM POOL DEPTH (centimeters):

Check ONLY one box

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COMMENTS

COMMENTS

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AVERAGE BANKFULL WIDTH (metows)

DRAINAGE AREA (m.?) 4

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

Primary Headwater Habitat Evaluation Form

pithrs 201+209

CLONDO HE

RIVER MILE

RIVER CODE

LENGTH OF STREAM REACH (1) 200 LAT.

LENGTH OF STREAM REACH (1) 200 LAT.

LONG.

SITE MAME LOCATION

-ડ્રે ન્ર

Severe (10 mmon m) Crop Mining or Construction Maist Channel, solated pools, no flow (Intermittent) Ory channel, no water (Ephemeral) This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN CALLITY

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RECORDAN WOOTH

RECORDAN WOOTH

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RECORD WOOTH

REC Open Pasture, Row 8 % ☐ Moderate to Severe (Check ONLY and box): Residental, Park, New Fletd FLOW RECAME (At Tons of Evaluation) (Check ONL Y and box).
Stream Flowing
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COMMISM'S Fenced Pasture SNUOSTY (Number of bands per 6f in (200 ft) of channel)
None
0.10
0.5 O Moderale (2 M103 it) 00 STREAM GRADIENT ESTIMATE Marrow <5m COMMENTS **∠**及□ -_20□ 0 DZZ(

October 24, 2002 Revision

ATTACHMENT D

ATTACHMENT D Page 50 of 66

FORCA

ADDITIONAL STREAM INFORMATION (This Information Mast Also be Completed): QHEI PERFORMED? — This Money May May Also be Completed: DOWNISTREAM DESIGNATED USE(S) DOWNISTREAM DESIGNATED USE(S) CWH Name: DESINCE from Evaluated Stream DESINCE from Evaluated Stream MAPPING: ATTACH COPIES OF MAYS, INCLUDING THE ENTINE WATERSHED AREA CLEARLY MARK THE SITE LOCATION USES CORDING MADES SOIL MAD STREAM OFFICE COURTY: MAJC Township / OH TO	AMSCELLANEOUS Sace Flow Conditione? (TM): \(\text{\t	Performed's (YNN): \(\frac{1}{Tree, Record all observations. Voucher collections endone). NOTE: all voucher samples must be habeted with the site in the form of the same of the sa	DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other feature of DNL OF The Continue of the stream's location PNL OF THE OFFICE OF	FLOW J
CATERA Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): STE WANTER COATION STE WANTER COATION STE WANTER STEEN REACH TO STEEN THE STEEN	1. SUBSTRATE (Estimats percent of every type of substrate present. Check OMY tage predominant substrate of TYPE boxes New of 32) Add total number of significant substrate types bound (blac of 32). Final meths score is sum of some A & B. HHE	COMMENTS S. BANK FULL WIDTH (beatsured as the average of 34 measurements) (Cheek ONL') one box); C. S. BANK FULL WIDTH (beatsured as the average of 34 measurements) (Cheek ONL') one box); C. S. BANK FULL WIDTH (certification) (Cheek ONL') one box); Wath Wath Wath (Cheek ONL') one box; Wath Wath (Cheek ONL') one box; Wath (Cheek ON	This information mest stop be completed This information mest stop be completed FERMANAY COME AND PLOODPLANK QUARTY FERMANAY WITH L. R. (Next Prodominant per Bank) L. R. (Next Prodominan	FLOW REGINE (At Time of Enduation) (Check ONLY one bext: Stream Flowing (Aniesmittant) Subgurace flow with soluted pools (Interstital) COLMENTS SHUUCSTTY (Number of bends per 61 m (200 R) of channel) None 0.55

"" atton and a narrative description of the stream's location RRATIVE DESCRIPTION OF STREAM REACH (This must be completed): VI TIMES nd other featur Forest

October 24, 2002 Revision

☐ Moderate to Severe

Moderate (2 mm (1)

STREAM GRADIENT ESTIMATE

[] Flat (0.5 notes)

[] Flat to Moderate

October 24, 2002 Revision

PHWH Form Page - 1

ATTACHMENT D Page 51 of 66 To Dry Channel Mostly Naturely instructions for acciding the alternate cover metric: Each cover type should receive a score of between 0 and 3, Where 0 - Cover type absent 1 - Cover type present in very small amounts or time of or many and angient of plainty 2 - Cover type present in moderate amounts, but not of highest quality or in small amounts. Examples of highest quality, 3 - Cover type very highest quality, 3 - Cover type present in moderate or greater amounts. Examples of highest quality, 3 - Cover type very large absence or present in small amounts. Examples of highest quality 3 - Cover type very large absence or present a small amounts. Examples of highest quality 3 - Cover type very large plants and process or present a small small amounts. In There Walch Close Downstream? There water upstream? . mostie ni bordinubi Somen + normen two-Ind balananders (lana) 1, te=1000 JOT ZM28. ロールが CX.ROW ညီဝွ <u>)</u> 0 , °**P** 000 Ø آيا. ايد 00 , bt =/ MOTH Stream Drawing: Nejor Suspected Sources of Mono Vones of Mono Vone O Mono Vone O Mono Vones of Mono Vo anonqboolT xsM llulkhsB rlibiW anA rkqeQ Aesthedo Raung (1-10) avifosjdu2 pnjis9 (0r-r) Stream Massamente Maximum Av. Banklull Bankumi Mean Decity William Maximum Maximum Mean 8 fanit esefi galiqmeð Water Clanity: Water Stage: Ganopy -% Open ріатапсы: Gest: If Not, Explain; Le Sampling Reach Representative of the Stream (YM) $\sqrt{}$ L R (Por Bank)

M. NONE-JUTTLE [3] (7)

D MODERATE [2] (7)

C) D CHEAVY/SEVERE(1) Max 10 Riffelfum Max 8 Gradient 10 Max 10 QHEI Score: 163 Pool Current Max 12 SUBSTRATE GUALITY
CHECK ONE (ON 2 & AVERACE)
CHECK THE WAY
CHECK THE WORKE [4]
SULT FREE [1]
CHECK THE FREE CHORK 2 and AVERAGE)

C. EXTENSIVE > 75% [11]

C. MODERATE 25-5% [7]

G. SPARSE 5-25% [3]

C. NEARLY ABSENT: > 5%[1] AMOUNT: (Check ONLY One or AND THE COLOR OF T CURRENT VELOCITY, LPOOLS & RIFFLEST,
(Check, All That Apply)

B. "DRESTITAL TO "S" SPRESTIME (1)

RAST[1] P. "SPRESTIME (1)

RAST[1] D. "VEN FAST[1]

SLOW [1] D. "VEN FAST[1] NOMERIA WAS ONE AND BANK EROSTONIAMAS ONE BOX post bank or osset 2 and AVERGGE part bank) Privar Right L.

R. (Per Bank)

R. (Ation: HTM Parties of the second of the seco Qualitative Habitat Evaluation Index Field Sheet TER (Give each cover type a score of 0 to 3; see back for instructions)

TYPE score all Time Cocur

Types a score of 0 to 3; see back for instructions)

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Types a score of 0 to 3; see back for instructions

Types a score of 0 to 10; see a score of 0 to OXBONS, BACKWATERS [1]
AQUATIC MACROPHYTES [1]
L LOSS OR WOODY DEBRIS [1] CHECK ONE OR CHECK 2 AND AVERAGE
REFERRALS BESTRATE
REFERRALS FOR CHECK 2 AND AVERAGE
1 DSTABLE (reg., check) [7]
THOUSTABLE FINE GRAVEL, send) [0] G-FAST[1] G-FAST[1] G-KODERATE [1] G-SLOW [1] 6) GRADIENT (MM); 0/334 M) SCANINGE AREA (Sq.ml.) : 01.04. Stream: Caream: Caream S. POOLIGIL DE AND RIFFLERUN QUALITY

MAY, DETH

MOSEPHOLOS

(Check 1 or 2, AWERAGE)

Check 2 or 3, AWERAGE

Check 3 or 3, AWERAGE

Check 2 or 3, AWERAGE

Check 3 or 3, AWERAGE

Check 3 or 3, AWERAGE

Check 3 or 3, AWERAGE

Check 4 or 3, AWERAGE

Check 4 or 3, AWERAGE

Check 5 or 3, AWERAGE

CHECK Check ONLY Two Substantary PE BOXES; Expose Register Property of Party Property of Party Property of Party Party Property Propert NUMBER OF SUBSTRATE TYPES: (4.4 or Morg. (2))
(High Quality Only, Score 5 or *) C13 or Less (0)
ZINSTREAM COVER (Give each cover from Street RUN DEPTH CI - MAX > 50 [2] CI - MAX < 50[1] Intustita SICHANNEL MORPHOLOGY: (Check OVERHANGING VEGETATION [1] SHALLOWS (TH-SLOW WATER) [1] R (Per Bank)

Call - Mober R (Per Bank)

Call - Mober R (Per Bank)

Call - Mober R (Per Bank)

Call - Wer MAROW 5-10 m [2]

Call - Wer MAROW 6-11 column (5)

Call - Wer Weign RIFFLE DEPTH

-- 8est Areas > 10 cm [2]

-- 8est Areas 5-10 cm[1]

-- Best Areas 5-50 cm[1] श्री से प्राप्त Scorers Full Name: I SUBSTRATE (Check UNDERCUT BANKS [1] DD-stock (% 1887) 17 (1897) 18 (1897 SINCOSENT D. HIGH [4] D. LOW [2] D. LOW [7] (Structure) COMMENTS:

ATTACHMENT D Page 52 of 66

	_					_
H K	1		ctions	ō	HHEI Politics Politics A+8	1000
راممه y Headwater Habitat Evaluation Form HHEl Score (sum of metrics 1, 2, 3) :	9	LAT. COMMENTS GONG. RAVER CODE RIVER MILE.	NOTE: Complete All Nems On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions THE FAME CHARACTER OF THE FORM PROPERTY OF THE FORM THE FORM PROPERTY OF THE FORM P		SUBSTRATE (Estimate percent of newty type of substrate present, Check ONL Y Map performment substrate 7VPE bases (Max of 3), And total number of significant autistate types found (Max of 3), Final metite score is sum of bowes A & B. BUDK SLABS; (16 pt) BOULDSK (225 mm) (15 pt) BOULDSK (225 mm) (15 pt) CORAVEL (8-256 mm) (12 pt) COR	
Crisch Primar	t I	LENGTH OF STREAM REACH (11) DATE P/1/D6 SCORER JAU	NOTE: Complete All Items On Thi		1. SUBSITIANE (Estimate percent of every type of states (Atax of 32). Add total number of significant subsitiate type BLDR SLABS (16 pet) O	Commence

This mind and FLOODPLAIN QUARTY ON AND TE. River Let (L) and Right (R) as fooking downesteam to RIPARIAN VIOCITI F. (Q) and Right (R) as fooking downesteam to RIPARIAN VIOCITI F. (Q) and Right (R) as fooking downesteam to RIPARIAN VIOCITI F.	() () () () () () () () () ()	Frod Residential, Park, New Pept CO Fenced Pasture	FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Steam Ploating Steam Ploating Steam Contact is also with isolated pools (Interstiting) Dy chamnel, no water (Ephemeral) Obtakte N:2	SNUOSTTY (Number of bends per 61 m (200 ft) of channel) (Check $ONLY$ one box): $ONLY = ONLY$ one box	GRADIENY ESTRINATE Maderate provincy Chindrale to Severe Connoce Conno	PHWH Form Page - 1
RIPARIAN ZONE / RIPARIAN VIDZI	LA (Per Bank) GG Wide >10m	ŏ	PLOW REGIME (4 Stream Flowing Subsurface flow with	SINUOSITY (Numb	STREAM GRADIENT ESTIMATE Play (0.5 2700 m D Flat to Moders	October 24, 2007 Revision

Performed? (YAN) (11 Ves. Record all observations. Voucher collections optional. NOTE: all ocuses samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habital Assessment (Yannal) NRCS Soil Map Page: NRCS Soil Map Stream Order MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION Fish Observed? (YN) Voucher? (YN) Salamanders Observed? (YN) Voucher? (YN) Voucher? (YN) Ynd Frogs or Tatpokes Observed? (YN) Voucher? (YN) Quantity: con transcontra Distance from Evaluated Stream,
Distance from Evaluated Stream,
Distance from Evaluated Stream Conductivity (µmhosicm) Were samples collected for water chemistry? (Yht); No (Note lab sample no, or id, and attach results) Lab Number..... OHEI PERFORMEDT - D'Yes Che CHEI Soce SA (If Yos, Atach Completed Cheil Form) Base Flow Conditions? (YIN): Date of fast precipitation; why work pH (S.U.) ADDITIONAL STREAM INFORMATION (This Information Wort Also be Completed); is the sampling reach representative of the stream (Y/N)_____ If not, please explain_ Tewnship J City:_ Canopy (% apen): 90% Field Measures: Temp ("C)______ Dissolved Oxygen (mg/l)_____ Photograph Information: Octor 14-16 Additional comments/description of pollution Impacts; DOWNSTREAM DESIGNATED USE(S) Elevated Turbidity? (YM): BIOTIC EVALUATION Comments Regarding Biology. MISCELLANEOUS USGS Quadrangle Name: U WWH Name:
COWH Name:

Include important landmarks and other features of interest for site evaluation and a natrative description of the arream's location DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

1-45 mm 701 -("74.0% emergent without 1 withing The contract of the contract o FLOW L

October 24, 2002 Revision

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION (2/30-MT-SO) SITE NUMBER______ RIVER BASIN _____ DRAINAGE AREA (mi²) _ LENGTH OF STREAM REACH (ft) LAT. ____LONG. ____ RIVER CODE ____ RIVER MILE ____ DATE 4/30/08 SCORER B. O. HO COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions Ø NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL MODIFICATIONS: AREA HAS BEEN LOGGED BUT DOES NOT APPEAR to HAVE ALTERED STREAM 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 Points BLDR SLABS [16 pts] SILT [3 pt] 口图 BOULDER (>256 mm) [16 pts] 门团 LEAF PACKWOODY DEBRIS 13 pts1 Substrate ПΠ BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 40COBBLE (65-256 mm) [12 pts] OF C CLAY or HARDPAN [0 pt] GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 図口 SAND (<2 mm) [6 pts] 00 ARTIFICIAL [3 pts] Total of Percentages of (B) Bldr Slabs, Boulder, Cobble, Bedrock __15 6 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 > 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] Ō. > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] NO WHITT COMMENTS MAXIMUM POOL DEPTH (centimeters): BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width > 3.0 m - 4.0 m (> 9' 7" - 13") [25 pts] ≤ 1.0 m (≤ 3' 3") [5 pts] Max=30 > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS FRANK STEED AN KOING INTO FAHT AVERAGE BANKFULL WIDTH (meters) This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY WNOTE: River Left (L) and Right (R) as looking downstream or RIPARIAN WIDTH FLOODPLAIN QUALITY Ď₽ DB (Most Predominant per Bank) (Per Bank) σ Mature Forest, Wetland Wide >10m Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row ØØ aa aa Residential, Park, New Field Narrow <5m Сгор 図図 None Fenced Pasture Mining or Construction COMMENTS AREA HAS DEEN LOGGED FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Stream Flowing Moist Channel, isolated pools, no flow (intermittent) Subsurface flow with isolated pools (interstitial) Dry channel, no water (Ephemeral) COMMENTS_ SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0

☐ Moderate to Severe

Severe (10 10100 ft)

Moderate (2 m/100 m)

15

Flat (0.5 f/100 ft)

0.5

STREAM GRADIENT ESTIMATE

Flat to Moderate

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 <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soll Map Page; NRCS Soll Map Stream Order
County: Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N):_
Photograph Information:
Elevated Turbidity? (Y/N):W Cancpy (% open): 95%
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 Primery Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Vo
Comments Regarding Biology:
W \ \
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
DEFORESTED LAND
Cuthon by
FLOW TREET, LE
10 cm 20
N ET IV
DEFONESTED LAND

PHWH Form Page - 2

October 24, 2002 Revision

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

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SITE NAME/LOCATION OLIZO-MT SO3		TEI GOOTE (Sum of the		
SITE NUMBER	RIVER BASIN	DI	RAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ff)	LAT LONG	RIVER CODE	RIVER MILE	
DATE 64/30/68 SCORER BEN OTTO	COMMENTS			
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation	on Manuai for Ohio's PHV	NH Streams" for Instruc	ctions
STREAM CHANNEL MONE/NAT	TURAL CHANNEL	ERED RECOVERING	RECENT OR NO RECOV	(ERY
MODIFICATIONS:		· ·	` /	
THE SOMEOUNI	DING ARCA HAS BEE	N DEFONESTE	D/NOT APPEAR TO	
BLOR SLABS [16 pts] BOULDER (>266 mm) [16 pts] BEDROCK [16 pt] COBBLE (65-266 mm) [12 pts]	ant substrate types found (Max of ERCENT TYPE		of boxes A & B. PERCENT Itsi JO	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock	INALE ITPES:	TOTAL NUMBER OF SUBST		A+8
2. Maximum Pool Depth (Measure the maximum Pool Depth (Measure	culvents or storm water pipes) > 5	64 meter (200 ft) evaluation re {Check ONLY one box): cm - 10 cm [15 pts] cm [5 pts] WATER OR MOIST CHANNE		col Depth Max = 30
COMMENTS FAIRLY STEEP FIR	μD€	MAXIMUM POOL DEPTH (centimeters):	
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 (> 9' 7" - 4' 8') [20 pts]	<u> </u>	(Check <i>ONLY</i> one I 0 m - 1.5 m (> 3' 3" - 4' 8") [15 _[0 m (≤ 3' 3") [5 pts]	ots]	Bankfull Width Max=30
COMMENTS3'		_ AVERAGE BANKFULL WI	DTH (meters)	2
RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m	This information must all LAIN QUALITY &NOTE: Ri FLOODPLAIN QUALITY L R (Most Predominant Mature Forest, Wel Immature Forest, S Field	iver Left (L) and Right (R) as k per Bank) LR land D	ooking downstreamಳ Conservation Tillage Urban or Industrial	
□□ Narrow <5m 図図 None COMMENTS <u>DEFORTS</u>	Residential, Park, N Fenced Pasture RES AREA	lew Field	Open Pasture, Row Crop Mining or Construction	
FLOW REGIME (At Time of Eveling Stream Flowing Subsurface flow with Isolated pool COMMENTS	Q	Moist Channel, isolated po Dry channel, no water (Ep	• •	
SINUOSITY (Number of bends per None 0.5	1.0 (Channel) (Channel) (Channel) (Channel) (Channel) (Channel)	2.0 C 2.5	3.0 >3	
STREAM GRADIENT ESTIMATE Flat (0.5 N/100 h) Flat to Moderate	☐ Moderate (2 €100 €)	Moderate to Severe	Severe (10 lu loo n)

OHE! PE	ERFORMED? - TYes Q No. QHEI Score (If Yes, Atlach Completed QHEI Form)
	TREAM DESIGNATED USE(S)
WWH Name:	Distance from Evaluated Stream
	Distance from Evaluated Stream
	Distance from Evaluated Stream
MAPPIN	G: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County:	Township / City:
MISCELI	LANEOUS
Base Flow Conditio	ons? (Y/N): Y Date of last precipitation: UKN. Quantity:
Photograph Informa	alion:
Elevated Turbidity?	? (Y/N): <u>N</u> Сапору (% орел):
	ected 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)
	ch representative of the stream (Y/N) If not, please explain:
s the sampling real	Crreprosentative of the sheart (1714) It not, please explain
	EVALUATION
Performed? (Y/N): _ Fish Observed? (Y/ Frogs or Tadpoles (EVALUATION (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual) (N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Observed? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/N): _ Fish Observed? (Y/ Frogs or Tadpoles ((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) (N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
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Performed? (Y/N): _ Fish Observed? (Y/ Frogs or Tadpoles (Comments Regard) DRA\	(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) (N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Ing Biology: WING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
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Performed? (Y/N): _ Fish Observed? (Y/ Frogs or Tadpoles (Comments Regard) DRA\	(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) (N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Voucher? (Y/N) Ing Biology: WING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Ortant landmarks and other features of interest for site evaluation and a narrative description of the stream's location of
Performed? (Y/N): Fish Observed? (Y/ Frogs or Tadpoles (Comments Regard) DRAN Include Impo	(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) N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) _
Performed? (Y/N): Fish Observed? (Y/Frogs or Tadpoles Comments Regard DRAN Include Impo	(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) (N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
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Performed? (Y/N): Fish Observed? (Y/Frogs or Tadpoles (Comments Regard) DRAN Include Impo	(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) N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/N): Fish Observed? (Y/Frogs or Tadpoles (Comments Regard) DRAN Include Impo	(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) (N)

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ChieFPA Primary Headwater Habitat Evaluation Form

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

ı	> 2
1	مداحيه

SITE NAME/LOCATION (CH3O-36)	
SITE NUMBER RIVER BASIN DRAINAGE AREA (ml²)	
LENGTH OF STREAM REACH (ft) LAT. LONG. RIVER CODE RIVER MILE	
DATE ON SCORER B.OTTO COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL SOME / NATURAL CHANNEL STREET RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	ERY
SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	HHE! Metric
BLDR SLABS [16 pts] DA SILT [3 pt]	Points
BOULDER (>256 mm) [16 pts]	Substrate
BEDROCK [16 pt]	Max = 40
☐ ☑ _GRAVEL (2-64 mm) [9 pts]	18
	/ 0
Total of Percentages of (A) (B) (B) (B) (B) (B) (B) (B) (C) (B) (C) (B) (C) (C) (C) (C) (C) (C) (C) (C) (C) (C	A+B
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
	<u></u>
, ,	Pool Dept Max = 30
> 30 centimeters (20 pts)	2
□ > 22.5 - 30 cm [30 pts] □ < 5 cm [5 pts] □ > 10 - 22.5 cm [25 pts] □ NO WATER OR MOIST CHANNEL [0 pts] □	0
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
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]	Max=30
3 > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	5
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 ☐ ☐ Mature Forest, Wetland ☐ ☐ Conservation Tillage	
[X] Moderate 5-10m Immature Forest, Shrub or Old I Urban or industrial	
ribio	
Crop	
☐ None ☐ ☐ Fenced Pasture ☐ ☐ Mining or Construction COMMENTS	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (intermittent)	
Subsurface flow with Isolated pools (Interstitial) COMMENTS Dry channel, no water (Ephemeral)	
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0	
STREAM GRADIENT ESTIMATE	
)

ADDITIONAL STE	REAM INFORMATION (This Information Must Also be Completed):
QHEI PI	ERFORMED? - 🗖 Yes 🐧 No QHEI Score(If Yes, Allach Completed QHEI Form)
	STREAM DESIGNATED USE(S)
	Distance from Evaluated Stream
	Distance from Evaluated Stream
MAPPIN	NG: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USG\$ Quadrangle	e Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County:	Township / City:
	LANEOUS
Base Flow Condition	ons? (Y/N): 1 Date of last precipitation: UKN Quantity:
Photograph Inform	nation:
Elevated Turbidity	? (Y/N): Canopy (% open):/
Were samples coll	lected 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)
ts the sampling rea	ach representative of the stream (Y/N) If not, please explain:
···	
Additional commer	nts/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. Frogs or Tadpoles	//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 Regard	ling Blology:
DRA	WING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include imp	ortant landmarks and other features of interest for site evaluation and a narrative description of the stream's location
	STEEP MOONED 0430-nitsou
NT /	51EEP (NOODE) 0430-nit300
_ \	
FLOW -	offer with print
المرسر	
	$\sqrt{100DCD}$
· ·	Tom
]	WOODED /
	Steen
October 24, 2002 Review) PHWH Form Page - 2
ANABOL CAL STOR LIGHTS	. O430 ht Soz

ATTACHMENT D Page 59 of 66

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

		4 <i>1 TEI NET (</i>	. [ransm	vission Line			
	SITE NUMBER_					RAINAGE AREA (mi²)	
LENGTH OF STREA	AM REACH (ft)	_ LAT	LON	IG	RIVER CODE _	RIVER MILE_	
DATE 2- JU/4-	LOS SCORER M.Thousand te All Items On This Fol	CON.	MENTS				
NOTE: Comple	te All Items On This For	m - Refer to	"Field Eva	Juation Manual	for Ohio's PH	WH Streams" for Inst	ructions
STREAM CHANN	, -	TURAL CHAN	NEL LIRE	ECOVERED LJ	recovering i	TRECENT OR NO REC	OVERY
MODIFICATION	S:						
4 0100754	TE (Estimate percent of ev	and home of au	batesta proc	ant Chack ONLY	tura prodominant	substrate TVOE house	·
• • • • • • • • • • • • • • • • • • • •	i E (Estimate percent of ev i. Add total number of signifi		•				HHE
TYPE		PERCENT	TYPE,			PERCENT	Metri Point
	SLAB\$ [16 pts] PER (>256 mm) [16 pts]			SILT [3 pt] LEAF PACK/WO	ONY DERRIS 13 :	10 15 15 15 15 15 15 15 15 15 15 15 15 15	Folite
)CK [16 pt]		56	FINE DETRITUS	•	018]	Substrat
			-8 1□	CLAY or HARDP		50	Max = 4
/-	L (2-64 mm) [9 pts]	20		MUCK [0 pts]			1 11
	<2 mm) [6 pts]	15		ARTIFICIAL [3 p	ts]		14
Total	of Percentages of		(A) _			(B)	A + B
Bldr Slabs,	Boulder, Cobble, Bedrock _		9			5	ATD
SCORE OF TWO M	OST PREDOMINATE SUB	STRATE TYPE	S:	TOTAL NUM	IBER OF SUBST	RATE TYPES:	4
2. Maximum	Pool Depth (Measure the n	naximum poo	l depth withi	n the 61 meter (2)	00 ft) evaluation r	each at the time of	Pool Dep
evaluation.	Avoid plunge pools from roa			ipes) (Check O/	VLY one box):		Max = 3
> 30 centime > 22.5 - 30 centime	eters [20 pts]		H	> 5 cm - 10 cm < 5 cm [5 pts]	[15 pts]		105
	cm [25 pts]				MOIST CHANNE	Et [0 pts]	1 23
	'S			BA A VIBALIA	ש מיטטו מבפדע	la	The board of
COMMENT	3			MAXIMO	W POOL DEPTH	(Centimeters).	;
_	L WIDTH (Measured as the	e average of 3	-4 measuren		heck ONLY one	•	Bankfuli
	(> 13') [30 pts] (m (> 9' 7" - 13') [25 pts]		₩	> 1.0 m · 1.5 m · ≤ 1.0 m (≤ 3'3")	(> 3' 3" - 4' 8") [15 {5 pts}	ptsj	Width : Max=30
	m (> 9' 7" - 4' 8") [20 pts]		Γ.	2 (2 2 2 7	10 10-03		
COMMENT	s			AVERAG	E DANKELLI W	DTH (meters)	` 5
COMMENT	S			AVERAG	E PARTI OLL III	Ditti (meteta)	No. 14 70 100
		This in	formation m	ust also be comp	leted		
	ARIAN ZONE AND FLOOD	PLAIN QUALI	TY ∲NŌ	TE: River Left (L)		looking downstream:	
	PARIAN WIDTH				, 5		
744 Val	Per Bank) Vide >10m		Mature Fores	ninant per Bank) st. Wetland	Ĺ ^R	Conservation Tillage	
~ ~	Noderate 5-10m	\(\forall \)	Immature Fo	rest. Shrub or Old	00	Urban or Industrial	
	novelate of Feth		Field			Open Pasture, Row	
	larrow <5m		Residential, f	Park, New Field	00	Crop	
· -	lone MMENTS	00	Fenced Past	ure		Mining or Construction	_
, elc	W REGIME (At Time of Eve	dustion1 (Ch	ack ON!! Van	a hov):			
) ()	om Flowing	aconomy (One	JON OFFICE COLL		nannel, isolated p	oofs, no flow (Intermittent)	+
🗇 Subs	urface flow with isolated poo MMENTS	ols (Interstitial)			nnel, no water (E		-
SIN	UOSITY (Number of bends p	ner 61 m (200	fi) of channet) (Check OAILY r	one pox).		
None		1.0	., o, Giainiei	2.0		3.0	
1 0.5	10	1.5		2.5		J >3	
	RADIENT ESTIMATE	- 1					
STREAM G		>/		_			
STREAM G	Flat to Moderate	\sim	ate (2 (V100 ft)		ate to Severe	Severe (10 lt/1	

ADDITIONAL STREAM INFORMATION (This information Mu	
QHEI PERFORMED? - Tyes X No QHEI Scor	re (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Funtuated Streets
	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: Melas	Township / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Unsure Date of last precipitation	on: VII KNOW 1 Quantity:
Photograph Information: 2 photos	
Elevated Turbidity? (Y/N): N Canopy (% open):	<u> </u>
Were samples collected for water chemistry? (Y/N):(f	Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg	n/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N)	If not, please explain:
Additional comments/description of pollution impacts:	
ID number. Include appropriate to Voucher? (Y/N) Salaman	Voucher collections optional. NOTE: all voucher samples must be labeled with the site field data sheets from the Primary Headwater Habitat Assessment Manual) Inders Observed? (Y/N)
	PTION OF STREAM REACH (This <u>must</u> be completed): erest for site evaluation and a narrative description of the stream's location
FLOW -> 539	Forested
Forested	Forested

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Primary Headwater Habitat Evaluation Form

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

	28
i	

SITE NAME/LOCATION _AMP-Ohio Alt			
		DRAINAGE AREA (mi²)	
LENGTH OF STREAM REACH (ft)	LAT. LONG.	RIVER CODE RIVER MILÉ _	···
DATE 2 July 2008 SCORER N. Thomas	COMMENTS		
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation Ma	anual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL NONE / NAT	TURAL CHANNEL RECOVERED	☐ RECOVERING ☐ RECENT OR NO REC	OVERY
(Max of 32). Add total number of significa	ant substrate types found (Max of 8). F ERCENT TYPE SILT [3 pt] LEAF PACE FINE DETF CLAY or H. MUCK [0 pt] ARTIFICIA	K/WOODY DEBRIS [3 pts] 20 RITUS [3 pts] 25 ARDPAN [0 pt] 55	HHEI Metric Points Substrate Max = 40
SCORE OF TWO MOST PREDOMINATE SUBSI	TRATE TYPES: TOTAL	L NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maevaluation. Avoid plunge pools from road > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	culverts or storm water oipes) (Che > 5 cm - 1 < 5 cm [5 NO WATE	0 cm [15 pts]	Pool Depth Max = 30
3. BANK FULL WIDTH (Measured as the	average of 3-4 measurements)	(Check ONLY one box):	Bankfull
> 4.0 meters (> 13") [30 pts] > 3.0 m - 4.0 m (> 9" 7" - 13") [25 pts]	Africa Contract Contr	1.5 m (> 3' 3" - 4' 8") [15 pts] , 3' 3") [5 pts]	Width Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4" 8") [20 pts] COMMENTS	,	21	6
□ None	FLOODPLAIN QUALITY L R (Most Predominant per Bit Mature Forest, Wetland Immature Forest, Shrub of Field Residential, Park, New Fit Fenced Pasture pation) (Check ONLY one box):	eft (L) and Right (R) as looking downstreams: ank) L R Conservation Tillage or Old Urban or Industrial eld Open Pasture, Row Crop Mining or Construction poist Channel, isolated pools, no flow (Intermittent y channel, no water (Ephemeral)	-)
STREAM GRADIENT ESTIMATE Flat (0.5 w100 ti) Flat to Moderate	Moderate (2 (1/100 ft)	Adderate to Severe (10 iii)	DO (t)

QHEI PERFORMED? - Yes No QHEI Score	
DOWNSTREAM DESIGNATED USE(S)	(ii 165, Aladii Gonpielea Qilei j Gili)
WWH Name:	Distance from Evaluated Stream
CWH Name:	
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIL	RE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:1	
County: Meigs Townshi	ip / City:
MISCELLANEOUS	,
Base Flow Conditions? (Y/N): vn5 11 Date of last precipilation: unk	Hown Quantity:
Photograph Information: 2 photos	
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): (Note lab samples collected for water chemistry?	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, pla	ease explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher of	offections optional. NOTE: all voucher samples must be labeled with the site heets from the Primary Headwater Habitat Assessment Manual)
. /	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic I	erved? (Y/N) // Voucher? (Y/N) // Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION C	DF STREAM REACH (This <u>must</u> be completed):
•	ite evaluation and a narrative description of the stream's location
Forested	Δ
Cores	
1.	a steam
540	Forested
FLOW	
Forested	
Colesi	lad t
Ka	Forested
	Fore
	•

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Stream 46

ChieFPA Primary Headwater Habitat Evaluation Form

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

		ang
į	2	/ B
	i I	

SITE NAME/LOCATION AUP OH Pres			
		DRAINAGE AREA (ml²)	
LENGTH OF STREAM REACH (fr)			
NOTE: Complete All Items On This Form	. [
STREAM CHANNEL NONE / NAT	URAL CHANNEL LJ RECOVERED	RECOVERING RECENT OR NO R	ECOVERY
SUBSTRATE (Estimate percent of ever (Max of 32), Add total number of significa		ONLY two predominant substrate TYPE boxed inal metric score is sum of boxes A & B.	HHE
	ERCENT TYPE	PERCENT	Metric Points
☐ ☐ BLDR SLABS [16 pts] ☐ ☐ BOULDER (>256 mm) [16 pts]	LEAF PAC	KWOODY DEBRIS [3 pts]	, stranger
BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts]	a and an	RITUS [3 pts] ARDPAN [0 pt]	Substrate Max = 40
GRAVEL (2-64 mm) [9 pts]	/6 III MUCK TO F		17
☐ (A SAND (<2 mm) [6 pts]	20 🗆 🗆 ARTIFICIA	L [3 pts]	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock	20 (A) 12	(B)	A+B
SCORE OF TWO MOST PREDOMINATE SUBST	RATE TYPES:	L NUMBER OF SUBSTRATE TYPES:	ACCESSORY OF THE PROPERTY OF T
		ter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road > 30 centimeters [20 pts]		eck <i>ONLY</i> one box): i0 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5	pts] ER OR MOIST CHANNEL [0 pts]	
		XIMUM POOL DEPTH (centimeters):	
		···	
3. BANK FULL WIDTH (Measured as the a > 4.0 meters (> 13') [30 pts]	□ > 1.0 m −	1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.6 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	☐ ≤ 1.0 m (≤	(3' 3") [5 pts]	
COMMENTS	Δ٧١	FRAGE BANKEUL WIDTH (meters)	
COMMENT O		EINOL BANK OLL THE ITT (Incerts)	
RIPARIAN ZONE AND FLOODPL	This information must also be		
RIPARIAN WIDTH	FLOODPLAIN QUALITY	eft (L) and Rìght (R) as looking downstream圿	
LAR (Per Bank) Mile >10m	LAR (Most Predominant per B	ank) L R	e.
Moderate 5-10m	Immature Forest, Shrub of Field		•
□ □ Narrow <5m	Residential, Park, New Fi	eld Open Pasture, Row	
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Grop ☐ Mining or Construct	lon
COMMENTS			
FLOW REGIME (At Time of Evalu		rist Channa) is slated as also so flow (luterositi	4)
Stream Flowing Subsurface flow with isolated poots		oist Channel, isolated pools, no flow (Intermiti y channel, no water (Ephemeral)	ent)
COMMENTS			
SINUOSITY (Number of bends fe	r 61 m (200 ft) of channel) (Check C 1.0 2.0	ONLY one box):	
□ 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	1 fift (0.) ft)
- The form on it	- Moderate (21910011)	Moneyare to develop (10	

ATTACHMENT D Page 64 of 66

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Tyes OHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
Distance from Evaluated Stream
☐ CWH Name: Distance from Evaluated Stream Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Mei 45 Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Date of last precipitation: Unknown Quantity:
Photograph Information: 2 photos; lupstream, I downstream
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)
Additional comments/description of pollution impacts:
BIOTIC EVALUATION

Performed? (Y/N):/V (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:
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
forested forested
forested Corested
0819-Mewstrain
FLOW
Corested
\0 ' -

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Primary Headwater Habitat Evaluation Form

	HHEI Score	(sum of metrics 1, 2, 3):
SITE NAME/LOCATION AMP-OH Piel	and Route Transmission	
_ ,	19-newstr 2 RIVER BASIN	
LENGTH OF STREAM REACH (ft)		
DATE 19 Aug 2008 SCORER M. The		
	m - Refer to "Field Evaluation Manual for	
TTDEASS CHANNEL CHANNEL	THRALCHANNEL TRECOVERED TREC	POWEDING TO DESCRIPTION OF DESCRIPTION
STREAM CHANNEL MONE / NA MODIFICATIONS:	TURAL CHANNEL	OVERING DIRECENTOR NO RECOVERY
mobilifications.		
SUBSTRATE (Estimate percent of ever	ry type of substrate present. Check ONLY two	predominant substrate TYPE boxes
· · · · · ·	ant substrate types found (Max of 8). Final metric	Mindela
TYPE P BLDR SLABS [16 pts]	ERCENT TYPE SILT [3 pt]	PERCENT
□ □ BOULDER (>256 mm) [16 pts]	DIX LEAF PACKWOODY	Carladana
☐ ☐ BEDROCK [16 pt] X ☐ COBBLE (65-256 mm) [12 pts] _	☐ ☐ FINE DETRITUS [3] 40	ptsj Max = 40
GRAVEL (2-64 mm) [9 pts]	10 D MUCK [0 pts]	
☐	ARTIFICIAL [3 pts]	
Total of Percentages of	40 (A)	(B) A+B
Bidr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBS	TOATE TYPES TOTAL MUMBE	R OF SUBSTRATE TYPES:
	aximum pool depth within the 61 meter (200 ft, I culverts or storm water pipes) (Check ONLY o	
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 g	
[_] > 22.5 - 30 cm [30 pts] [_] > 10 - 22.5 cm [25 pts]	5 cm [5 pts] NO WATER OR MO	DIST CHANNEL [0 pts]
		0
COMMENTS MAXIMUM POOL DEPTH (centimeters):		
3. BANK FULL WIDTH (Measured as the 3.4.0 meters (> 13') [30 pts]	average of 3-4 measurements) (Check $\square_{r} > 1.0 \text{ m} - 1.5 \text{ m} (> 3)$	
3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	\$ 1.0 m (s 3'3") [5 p	
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	/	[u] 5
COMMENTS	AVERAGE BA	ANKFULL WIDTH (meters)
No. of the control of		
RIPARIAN ZONE AND FLOODP	This information <u>must</u> also be completed. I AIN QUALITY **\(\text{VNOTF} \) River Left (L) and it	d Right (R) as looking downstreamਤੇ
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
R (Per Bank) Wide >10m	(Most Predominant per Bank) Nature Forest, Wetland	LR Conservation Tillage
Moderate 5-10m	Immature Forest, Shrub or Old	Urban or Industrial
and and	Field	Octobrillo Di
□ □ Narrow <5m	Residential, Park, New Field	Crop
☐ ☐ None COMMENTS	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction
FLOW REGIME (At Time of Evaluation of Flowing)		el, isolated pools, no flow (Intermittent)
Subsurface flow with isolated pool COMMENTS	s (Interstitial) Dry channel,	no water (Ephemeral)
 , , .		
SINUOSITY (Number of bends po	er 61 m (200 ft) of channel) (Check <i>ONLY</i> one b 1.0	oox):
0.5	1.5	☐ ×3°

Moderate (2 (v100 ft)

Moderate to Severe

Severe (10 (1/100 ft)

Flat (0.5 1/100 ft)

STREAM GRADIENT ESTIMATE

☐ Flat to Moderate

ATTACHMENT D Page 66 of 66

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: NR	
County: Meigs Township	City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): / Date of last precipitation: United	Quantity:
Base Flow Conditions? (Y/N): / Date of last precipitation: Whole Photograph Information: 3 photos; 1 upstream (but	uncha) 1 upstron (branchb), 1 downstream
Elevated Turbidity? (Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N): (Note lab sam	ple 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) $\frac{\zeta}{2}$ If not, pleas	se explain:
, , , , , , , , , , , , , , , , , , ,	· -
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N):/ (If Yes, Record all observations. Voucher colle ID number. Include appropriate field data shee	ections optional. NOTE: all voucher samples must be labeled with the site ets from the Primary Headwaler Habitat Assessment Manual)
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observers or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	
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
Coreveled	1000
Jore ,	1 Stanfill
Forested	ang s
FLOW Thannel a	bester forester
teof >	1819 - Maustin 2
Jaurhill ->	
1	The state of the s
channil b forested	Heaf -
	Laubil-> Located
	Opmina(

Attachment E

Photographic Record Preferred Transmission Route

ATTACHMENT E Page 1 of 1 PHOTOGRAPHIC RECORD

AMP-Ohio 345 kV Preferred Transmission

Line Route

Client Name:

Site Location:

Project No.

American Municipal Power-Ohio (AMP-OH) | Meigs County, Ohio

14946376

Photo Date: April 30, 2008

Facing west across valley containing streams \$27, \$35 and S36

HHEI for \$27 scored 8/24/06 prior to landowner clearing



Photo Date: April 30, 2008

Facing south near S27

HHEI for S27 scored 8/24/06 prior to landowner clearing



Attachment F

Transmission Line Preferred and Alternate Routes Extension to Plant Substation

PREFERRED AND ALTERNATE ROUTES **EXTENSION TO PLANT SUBSTATION** (Approximately 1512 feet extension) 3,000 345 KV TRANSMISSION LINE Page 1 of 1 CASE #06-1357-EL-BTX **S01** 1,500 connecting to Plant substation Two pole on-site extension Existing Transmission Line Generation Station Switchyard Streets Preferred Route 150 ft Corridor Alternate Route 150 ft Corridor Preferred Route Poles Delineated Wetlands Delineated Streams Preferred Route Alternate Route Drainages LEGEND

ATTACHMENT F