

**OPSB Letter of Notification
Trumbull Energy Center Electrical Interconnection
Attachment F - Wetlands Delineation Report - Part 2**

**Appendix E:
Stream Habitat Forms**



Qualitative Habitat Evaluation Index Field Sheet

F21r WWH

QHEI Score: 52.75

Stream & Location: Mud Creek

RM: 6.6 Date: 8/23/16

STORET #:

Scorer Name & Affiliation: Reiss Warren, ES

River Code:

Lat./ Long.: 41.144121, -80.854486

Office verified location ☒

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES
☐ BLDR / SLABS [10]
☐ BOULDER [9]
☐ COBBLE [8]
☐ GRAVEL [7]
☐ SAND [6]
☐ BEDROCK [5]
POOL RIFFLE
25 20

OTHER TYPES
☒ HARDPAN [4]
☐ DETRITUS [3]
☐ MUCK [2]
☒ SILT [2]
☐ ARTIFICIAL [0]
POOL RIFFLE
15 25
20 10
40 35

ORIGIN
☐ LIMESTONE [1]
☐ OUTWASH [1]
☐ WETLANDS [0]
☒ HARDPAN [0]
☒ SANDSTONE [0]
☐ RIP/RAP [0]
☐ LACUSTRINE [0]
☐ SHALE [-1]
☐ COAL FINES [-2]

QUALITY
☒ HEAVY [-2]
☐ MODERATE [-1]
☐ NORMAL [0]
☐ FREE [1]
☒ EXTENSIVE [-2]
☐ MODERATE [-1]
☐ NORMAL [0]
☐ NONE [1]
SILT
EMBEDDED
NESS
Substrate
4
Maximum
20

NUMBER OF BEST TYPES: ☒ 4 or more [2] ☐ 3 or less [0] (Score natural substrates; ignore sludge from point-sources)

Comments

Upstream culvert; downstream beaver impoundment. Appears to be a large flux of sediment coming down stream

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.)

Check ONE (Or 2 & average)
☐ EXTENSIVE >75% [11]
☒ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

UNDERCUT BANKS [1]
OVERHANGING VEGETATION [1]
SHALLOWS (IN SLOW WATER) [1]
ROOTMATS [1]
POOLS > 70cm [2]
ROOTWADS [1]
BOULDERS [1]
OXBOWS, BACKWATERS [1]
AQUATIC MACROPHYTES [1]
LOGS OR WOODY DEBRIS [1]

Comments

Cover
Maximum
20
14

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY
☐ HIGH [4]
☐ MODERATE [3]
☒ LOW [2]
☐ NONE [1]
DEVELOPMENT
☐ EXCELLENT [7]
☐ GOOD [5]
☐ FAIR [3]
☒ POOR [1]
CHANNELIZATION
☒ NONE [6]
☐ RECOVERED [4]
☐ RECOVERING [3]
☐ RECENT OR NO RECOVERY [1]
STABILITY
☐ HIGH [3]
☐ MODERATE [2]
☒ LOW [1]

Comments

Upstream culvert; Hallock Young Road

Channel
Maximum
20
10

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION
☒ NONE / LITTLE [3]
☐ MODERATE [2]
☐ HEAVY / SEVERE [1]
RIPARIAN WIDTH
☒ WIDE > 50m [4]
☐ MODERATE 10-50m [3]
☐ NARROW 5-10m [2]
☐ VERY NARROW < 5m [1]
☐ NONE [0]
FLOOD PLAIN QUALITY
☒ FOREST, SWAMP [3]
☐ SHRUB OR OLD FIELD [2]
☐ RESIDENTIAL, PARK, NEW FIELD [1]
☐ FENCED PASTURE [1]
☐ OPEN PASTURE, ROWCROP [0]
CONSERVATION TILLAGE [1]
☐ URBAN OR INDUSTRIAL [0]
☐ MINING / CONSTRUCTION [0]

Comments

Indicate predominant land use(s) past 100m riparian.
Riparian
Maximum
10
9.75

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)
☒ > 1m [6]
☐ 0.7-1m [4]
☐ 0.4-0.7m [2]
☐ 0.2-0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)
☐ POOL WIDTH > RIFFLE WIDTH [2]
☒ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply
☐ TORRENTIAL [-1]
☐ VERY FAST [1]
☐ FAST [1]
☐ MODERATE [1]
☒ SLOW [1]
☐ INTERSTITIAL [-1]
☐ INTERMITTENT [-2]
☐ EDDIES [1]

Indicate for reach - pools and riffles.

Comments

Pool behind beaver impoundment

Pool /
Current
Maximum
12
8

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH
☐ BEST AREAS > 10cm [2]
☐ BEST AREAS 5-10cm [1]
☒ BEST AREAS < 5cm [metric=0]
RUN DEPTH
☒ MAXIMUM > 50cm [2]
☐ MAXIMUM < 50cm [1]
RIFFLE / RUN SUBSTRATE
☐ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Large Gravel) [1]
☒ UNSTABLE (e.g., Fine Gravel, Sand) [0]
RIFFLE / RUN EMBEDDEDNESS
☐ NONE [2]
☐ LOW [1]
☐ MODERATE [0]
☒ EXTENSIVE [-1]

Riffle /
Run
Maximum
8
1

Comments

6] GRADIENT 26.9 ft/mi DRAINAGE AREA 2.18 mi²

%POOL: 25 %GLIDE: -
%RUN: 75 %RIFFLE: -

Gradient
Maximum
10
6

METHOD

- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

SECCHI DEPTH

1st pass _____ cm
2nd pass _____ cm

DISTANCE

- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☒ 0.12 Km
- ☐ OTHER

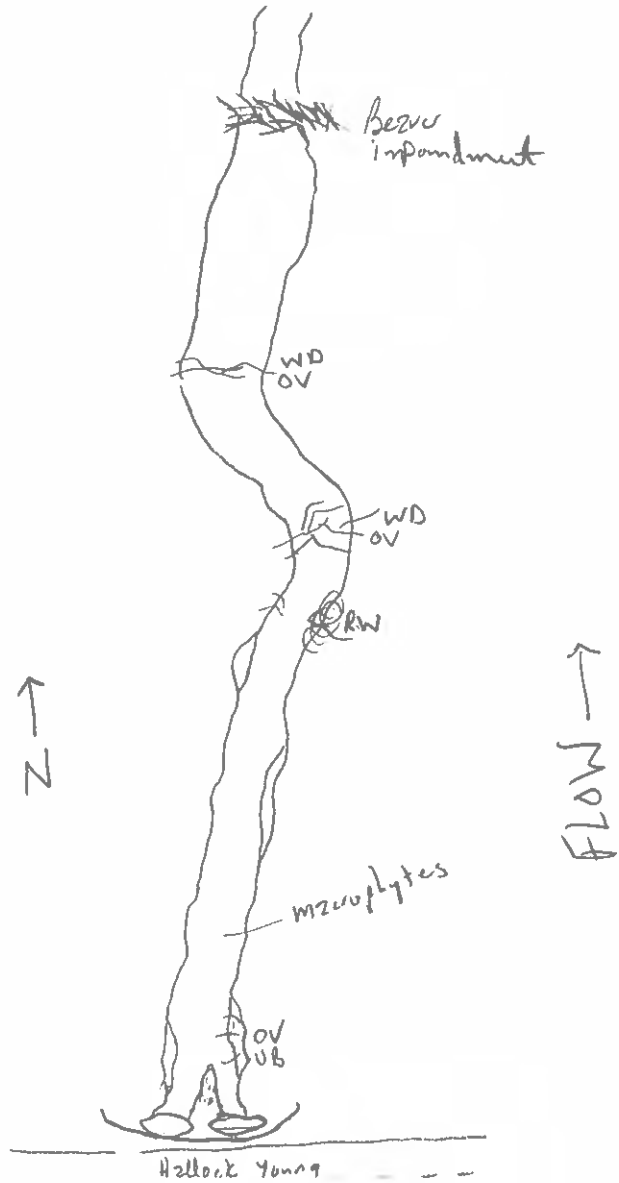
CANOPY

- ☒ > 85%- OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10%- CLOSED

_____ meters

Consider maintenance status and basin issues. Write something to aide understanding of overall QHEI score.

Stream Drawing:





Primary Headwater Habitat Evaluation Form

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

modified class I

28

SITE NAME/LOCATION Trumbull Energy Center
 SITE NUMBER 5-1 RIVER BASIN Manong DRAINAGE AREA (mi²) <1 mi²
 LENGTH OF STREAM REACH (ft) 200 LAT. 41.14648 LONG. 80.84816 RIVER CODE _____ RIVER MILE _____
 DATE 8/26/16 SCORER L. Sayre COMMENTS _____

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: channeuzed ditch - possibly man-made

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDG SLABS [16 pts]		<input type="checkbox"/> SILT [3 pts]	
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u>5</u>	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>5</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]		<input checked="" type="checkbox"/> MUCK [0 pts]	<u>30</u>
<input type="checkbox"/> SAND (<2 mm) [8 pts]		<input type="checkbox"/> ARTIFICIAL [3 pts]	

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

10

(A)

3

(B)

4

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
Points

Substrate
Max = 40

7

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30

0

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

Bankfull
Width
Max=30

15

COMMENTS 32', 4.2', 4.5' = 3.96 AVERAGE BANKFULL WIDTH (meters)

1.2

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH

L	R	(Per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☒ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTEAM DESIGNATED USE(S)

☒ WWH Name: Mud Creek Distance from Evaluated Stream <100'
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Warren NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
County: Trumbull Township / City: Lordstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 8/25/16 Quantity: 0.55" (semi-drought)

Photograph Information: attached

Elevated Turbidity? (Y/N): N Canopy (% open): 15%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

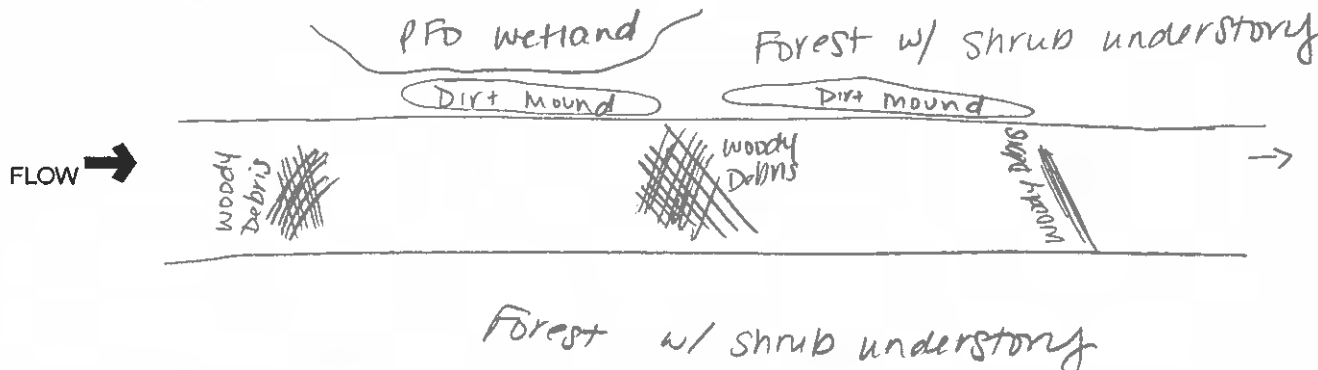
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) 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





Primary Headwater Habitat Evaluation Form

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

CLASS I
PHWH

23

SITE NAME/LOCATION TRUMBULL ENERGY CENTER, LARDSTOWN, OH

SITE NUMBER 5-2

RIVER BASIN MAHONING

DRAINAGE AREA (mi²) 0.1

LENGTH OF STREAM REACH (ft) 44'

LAT. 41.145796

LONG. -80.8496

RIVER CODE 05030103

RIVER MILE

DATE 26 AUG 2016

SCORER A. GILMORE

COMMENTS

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

STREAM CHANNEL



NONE / NATURAL CHANNEL

☐ RECOVERED

☐ RECOVERING

☐ RECENT OR NO RECOVERY

MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.				HHEI Metric Points	
TYPE	PERCENT	TYPE	PERCENT		
<input type="checkbox"/> BLDR SLABS [16 pts]		<input type="checkbox"/> SILT [3 pts]			
<input checked="" type="checkbox"/> BOULDER (>256 mm) [16 pts]	5	<input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	45		
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]			
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	10	<input type="checkbox"/> CLAY or HARDPAN [0 pts]			
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	10	<input type="checkbox"/> MUCK [0 pts]			
<input type="checkbox"/> SAND (<2 mm) [6 pts]	15	<input type="checkbox"/> ARTIFICIAL [8 pts]	5		
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>15</u>				(A)	(B)
				12	6
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:				TOTAL NUMBER OF SUBSTRATE TYPES:	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):					
<input type="checkbox"/> > 30 centimeters [20 pts]		<input type="checkbox"/> > 5 cm - 10 cm [15 pts]			
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]		<input type="checkbox"/> < 5 cm [5 pts]			
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]		<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]			
COMMENTS <u>dry</u>				MAXIMUM POOL DEPTH (centimeters):	
				0	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):					
<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]		<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]			
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]			
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]					
COMMENTS <u>10", 15", 21" x̄ = 18"</u>				AVERAGE BANKFULL WIDTH (meters)	
				0.5	

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH

FLOODPLAIN QUALITY

L R

(Per Bank)

☒ ☒

Wide >10m

☐ ☐

Moderate 5-10m

☐ ☐

Narrow <5m

☐ ☐

None

☐ ☐

COMMENTS

L R

(Most Predominant per Bank)

☒ ☒

Mature Forest, Wetland

☐ ☐

Immature Forest, Shrub or Old Field

☐ ☐

Residential, Park, New Field

☐ ☐

Fenced Pasture

L R

Conservation Tillage

☐ ☐

Urban or Industrial

☐ ☐

Open Pasture, Row Crop

☐ ☐

Mining or Construction

☐ ☐

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐

Stream Flowing

☐

Subsurface flow with isolated pools (Interstitial)

☐

Moist Channel, isolated pools, no flow (Intermittent)

☒

Dry channel, no water (Ephemeral)

COMMENTS

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

☒

None

☐

1.0

☐

2.0

☐

3.0

☐

0.5

☐

1.5

☐

2.5

☐

>3

STREAM GRADIENT ESTIMATE

☒

Flat (0.5 ft/100 ft)

☐

Flat to Moderate

☐

Moderate (2 ft/100 ft)

☐

Moderate to Severe

☐

Severe (10 ft/100 ft)

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Mud Creek Distance from Evaluated Stream ~50'
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Warren NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
County: Trumbull Township / City: Lordstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 08/25/14 Quantity: 0.55" Semi-drought conditions regionally
Photograph Information: See attached
Elevated Turbidity? (Y/N): N Canopy (% open): 25
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

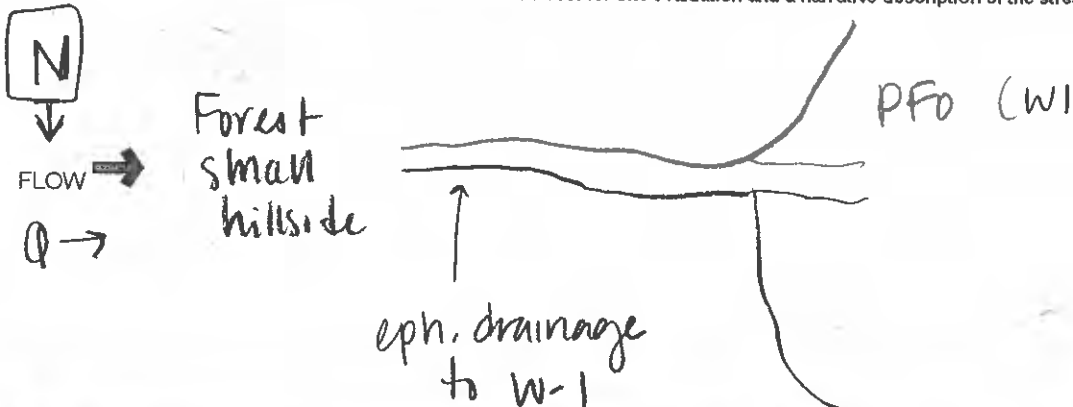
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

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

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





Primary Headwater Habitat Evaluation Form

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

Class I
PHWH

25

SITE NAME/LOCATION TRUMBULL FAMILY CENTER, LOUISIANA, OH
 SITE NUMBER S-3 RIVER BASIN MAHONING DRAINAGE AREA (mi²) <0.1
 LENGTH OF STREAM REACH (ft) 59' LAT. 41.14451 LONG. -80.85178 RIVER CODE 030103 RIVER MILE _____
 DATE 26 AUG 2016 SCORER A. GILMOKE COMMENTS _____

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

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
 MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.				HHEI Metric Points
TYPE	PERCENT	TYPE	PERCENT	Substrate Max = 40 <div style="border: 1px solid black; padding: 5px; width: 40px; text-align: center;">20</div> A + B
<input type="checkbox"/> BLDR SLABS [16 pts]		<input type="checkbox"/> SILT [3 pts]		
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u>5</u>	<input type="checkbox"/> LEAF PACK WOODY DEBRIS [3 pts]	<u>20</u>	
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]		
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>5</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pts]		
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>40</u>	<input type="checkbox"/> MUCK [0 pts]		
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<u>30</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]		
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>10</u>		(A) <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">15</div>	(B) <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">5</div>	
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:		TOTAL NUMBER OF SUBSTRATE TYPES:		
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):				Pool Depth Max = 30
<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]			<div style="border: 1px solid black; padding: 5px; width: 40px; text-align: center;">0</div>
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]			
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]			
COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">0</div>				
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):				Bankfull Width Max=30
<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]			<div style="border: 1px solid black; padding: 5px; width: 40px; text-align: center;">5</div>
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]			
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]				
COMMENTS <u>20", 19", 21"</u> AVERAGE BANKFULL WIDTH (meters): <div style="border: 1px solid black; padding: 2px; width: 30px; text-align: center;">0.5</div>				

This information must also be completed
 RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):
☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☒ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)
 COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):
☒ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >3

STREAM GRADIENT ESTIMATE
☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Mud Creek Distance from Evaluated Stream ~ 40'
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Warren NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
County: Trumbull Township / City: Lordsburg

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 08/25/16 Quantity: 0.55" semi drought conditions
Photograph Information: see attached

Elevated Turbidity? (Y/N): N Canopy (% open): 25-30

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

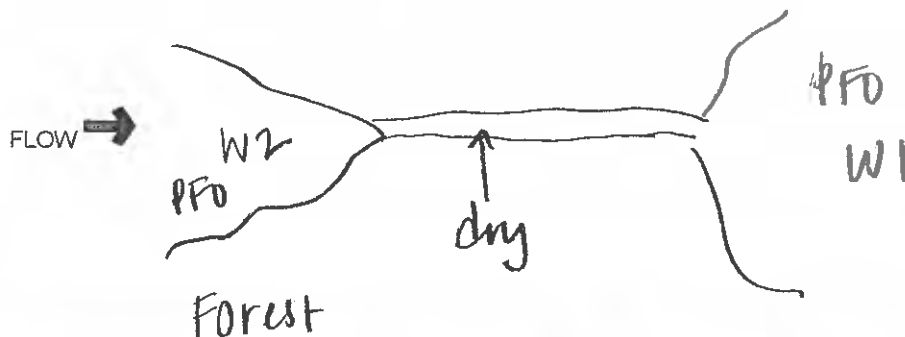
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

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

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



CLASS I
PHWH



Primary Headwater Habitat Evaluation Form

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

18

SITE NAME/LOCATION RUMBALL ENERGY CENTER, LAKESIDE, OH
 SITE NUMBER S-4 RIVER BASIN MAHONING DRAINAGE AREA (mi²) 40.1
 LENGTH OF STREAM REACH (ft) 175' LAT. 41.144967 LONG. -80.855166 RIVER CODE 05030103 RIVER MILE _____
 DATE 23 AUG 2016 SCORER A. GILMORE COMMENTS _____

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

STREAM CHANNEL ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY
 MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.				HHEI Metric Points
TYPE	PERCENT	TYPE	PERCENT	
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 pts]	<u>60</u>	Substrate Max = 40 13
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]		<input type="checkbox"/> LEAF PACKWOODY DEBRIS [3 pts]	<u>15</u>	
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]		A + B
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]		<input type="checkbox"/> CLAY or HARDPAN [0 pt]		
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>5</u>	<input type="checkbox"/> MUCK [0 pts]		Total of Percentages of Bltr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A) 9 (B) 4
<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	<u>20</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]		
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:				TOTAL NUMBER OF SUBSTRATE TYPES:
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):				Pool Depth Max = 30
<input type="checkbox"/> > 30 centimeters [20 pts]		<input type="checkbox"/> > 5 cm - 10 cm [15 pts]		0
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]		<input type="checkbox"/> < 5 cm [5 pts]		
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]		<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]		Bankfull Width Max=30 5
COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <u>0</u>				
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):				
<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]		<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]		AVERAGE BANKFULL WIDTH (meters) 0.7
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]		<input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]		
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		COMMENTS <u>26", 30", 32" X=29"</u>		

This information must also be completed
 RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

COMMENTS recent construction North of parcel

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
☒ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE
☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Mud Creek Distance from Evaluated Stream ~500'
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Warren NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
County: Trumbull Township / City: Lordstown

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 08/25/16 Quantity: 0.55" semi-drought
Photograph Information: see attached conditions regionally

Elevated Turbidity? (Y/N): N Canopy (% open): 55

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

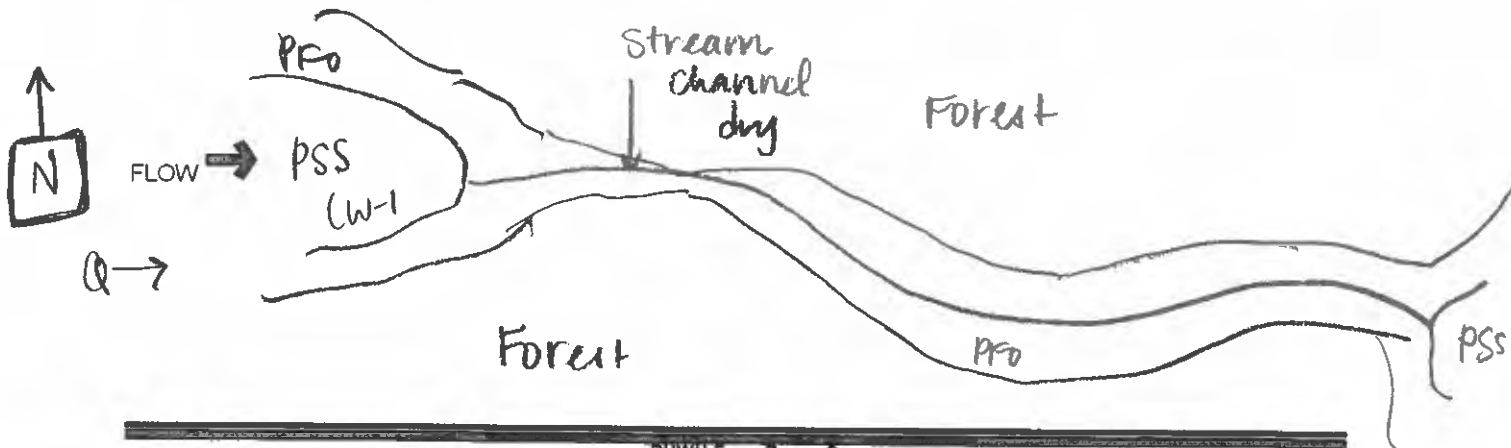
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

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

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



Attachment G – Species Documentation

- USFWS Correspondence, dated January 4, 2017
- ODNR Correspondence, dated January 3, 2017
- ODNR Correspondence, dated March 9, 2017

Bruce, Jackie

From: Gresock, Lynn
Sent: Wednesday, January 04, 2017 9:49 AM
To: Bruce, Jackie
Subject: FW: Trumbull Energy Center - Electric Generating Facility, Village of Lordstown

From: susan_zimmermann@fws.gov [mailto:susan_zimmermann@fws.gov] **On Behalf Of** Ohio, FW3
Sent: Wednesday, January 04, 2017 9:36 AM
To: Gresock, Lynn <Lynn.Gresock@tetrattech.com>
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Trumbull Energy Center - Electric Generating Facility, Village of Lordstown



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2017-TA-0415

Dear Ms. Gresock,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested

habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Female Indiana bats exhibit strong site fidelity to summer roosting and foraging areas, meaning that they return to the same area, and often the same trees, to roost, year after year. Because the project will result in a large amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal could result in significant impacts to Indiana bats. Because of this, the proposed project may result in indirect adverse effects to Indiana bats, even if tree clearing is conducted during the winter season when Indiana bats are not present. **Therefore, we recommend that a summer survey be conducted to determine presence or probable absence of Indiana bats at the project site.** The summer survey must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. In Ohio, summer surveys must be conducted between June 1 and August 15. We recommend that any Indiana bats captured, especially reproductively active females, be monitored through radio-tracking to determine roost locations.

If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are also warranted. Portal surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office.

Survey results should be coordinated with this office prior to initiation of any work. Based on the results of the survey(s), we will evaluate potential impacts to the Indiana bat from the proposed project. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied (see <http://www.fws.gov/midwest/endangered/mammals/nleeb/index.html>).

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of

this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts

.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Everson", written over a horizontal line.

Dan Everson
Field Office Sup

ervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parson, ODNR-DOW



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

3 January 2017

Lynn Gresock
Tetra Tech, Inc.
2 Lan Dr.
Westford, MA 01886

Dear Ms. Gresock,

Per your request, I have e-mailed you a set of shapefiles with our Natural Heritage Program data for the Trumbull Energy Center project, including a one mile radius, in Lordstown Township, Trumbull County, Ohio. This data will not be published or distributed beyond the scope of the project description on the data request form.

Records included in the data layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, A = recently added to inventory with a state status not yet determined, X = presumed extirpated from Ohio, FE = federal endangered, FT = federal threatened, FC = federal candidate species, and FSC = federal species of concern.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

A handwritten signature in blue ink that reads "Debbie Woischke".

Debbie Woischke
Ohio Natural Heritage Program



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldrige, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

March 9, 2017

Lynn Gresock
Tetra Tech Inc.
661 Anderson Drive
Pittsburgh, PA 15220

Re: 17-104; Threatened and Endangered Species Review Information Request, Trumbull Energy Center

Project: The proposed project involves the construction of a 940-megawatt natural gas-fired combined cycle electric generating facility.

Location: The proposed project is located in Lordstown Township, Trumbull County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: A review of the Natural Heritage Database has the following record at or within a one mile radius of the project area:

Great Blue Heron Rookery

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to wetlands and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2016), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2016) can be found at:

<http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>

The project is within the range of the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, and the mountain brook lamprey (*Ichthyomyzon greeleyi*), a state endangered fish. The DOW recommends no in-water work in perennial streams from April 15 to June 30 to

reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, the project is not likely to impact these or other aquatic species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, and that the eastern massasauga has been determined to not be present at this location, this project is not likely to impact this species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, the project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comments.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

<http://water.ohiodnr.gov/water-use-planning/floodplain-management#PUB>

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Attachment H – Transmittal Letter to Appropriate
Officials



COLUMBUS | CLEVELAND
CINCINNATI | DAYTON
MARIETTA

BRICKER & ECKLER LLP
100 South Third Street
Columbus, OH 43215-4291
MAIN: 614.227.2300
FAX: 614.227.2390

www.bricker.com
info@bricker.com

Sally W. Bloomfield
614.227.2368
sbloomfield@bricker.com

June 19, 2017

Via UPS - Ground

«Name»
«Address»
«Address»
«City», «State» «Zip»

**Re: Ohio Power Siting Board Letter of Notification
Clean Energy Future – Trumbull, LLC Trumbull Energy Center
Electrical Interconnection Lordstown, Trumbull County, Ohio
Case No. 17-819-EL-BLN**

Dear «Name»:

Enclosed please find a disk containing a copy of the Letter of Notification (“LON”) application of Clean Energy Future-Trumbull, LLC for the proposed Trumbull Energy Center Electrical Interconnection (TEC Electrical Interconnection) Village of Lordstown, Trumbull County, Ohio. The TEC Electrical Interconnection will consist of three consolidated generator leads that will extend from the Trumbull Energy Center’s on-site switchyard approximately 0.25-mile within a 100-foot wide right-of-way supported on three vertical, monopole dead-end structures; and the new 3-breaker ringbus, proposed on approximately four (4) acres of land located adjacent to the FirstEnergy 345-kV Highland-Hanna circuit into which the generator leads interconnect. The TEC Electrical Interconnection will be capable of delivering the TEC’s maximum gross 940-megawatt capacity to the FirstEnergy 345-kV Highland-Hanna circuit. You are receiving this copy as required by Ohio Administrative Code (“O.A.C.”) Rule 4906-3-07(A)(1).

You may request a paper copy of the LON by contacting Teresa Orahoad at (614) 227-4821 or torahood@bricker.com. In addition, you may access all the filings in this case at the PUCO website at <http://www.puc.state.oh.us/> and then clicking on “DIS” on the left hand column of the homepage; once the Docket Information System screen appears, type the case number for the Clean Energy Future-Trumbull, LLC Application, Case No. 17-819-EL-BLN, and follow the instructions to retrieve copies of filings.

If you have any questions, you may contact Steve Remillard of Clean Energy Future-Lordstown, LLC at (508) 579-6317 or sremillard@enervenresources.com.

Sincerely,

Sally W. Bloomfield

Enclosure: Disk Containing Copy of Application

Attachment I – Newspaper Notice

Notice of Proposed Major Utility Facility (New Interconnection Facility Construction)

Clean Energy Future-Trumbull, LLC (CEF-T) is planning to construct the Trumbull Energy Center Electrical Interconnection (TEC Electrical Interconnection) Village of Lordstown, Trumbull County, Ohio. The TEC Electrical Interconnection will consist of three consolidated generator leads that will extend from the Trumbull Energy Center's on-site switchyard approximately 0.25-mile within a 100-foot wide right-of-way supported on three vertical, monopole dead-end structures; and the new 3-breaker ringbus, proposed on approximately four (4) acres of land located adjacent to the FirstEnergy 345-kV Highland-Hanna circuit into which the generator leads interconnect. The TEC Electrical Interconnection will be capable of delivering the TEC's maximum gross 940-megawatt capacity to the FirstEnergy 345-kV Highland-Hanna circuit.

The location of the proposed TEC Electrical Interconnection is shown on the map below:



A Letter of Notification (LON) has been filed with the Ohio Power Siting Board (Board) as Case No. 17-819-EL-BLN in order to construct, operate and maintain the proposed interconnection facility described above.

The following public officials were served a complete copy of the LON:

Village of Lordstown Mayor Arno Hill; Village of Lordstown Planning & Zoning Administrator/Economic Development Director Kellie Bordner; Trumbull County Commissioners Frank S. Fuda, Mauro Cantalamessa, and Daniel E. Polivka; Trumbull County Engineer Randy L. Smith; Trumbull County Planning Commission Chairman Lewis Kostoff; Trumbull Soil & Water Conservation District Chair Peter Kepner; David Ditzler, Carol Rimedio-Righetti, Anthony Traficanti, Mahoning County Commissioners; Mahoning County Engineer, Patrick Ginnetti; Kathleen Vrable-Bryan, Mahoning Soil &

Water Conservation District; Michael O'Shaughnessy, Mahoning County Planning Commission; and Olin Harkleroad, Tom Frost and Alan Hemphill, Jackson Township Trustees.

The LON is available for public inspection at the Warren-Trumbull County Public Library, Lordstown Branch Library, 1471 Salt Springs Road, Warren, Ohio 44481.

A copy of the LON is located on CEF-T's web page at on <http://cleanenergyfuturellc.com/clean-energy-future-in-ohio/>. Copies of all filings in this case can also be located at the Ohio Power Siting Board website at <http://www.opsb.ohio.gov> by scrolling down to "Pending Cases" and selecting the case by name or docket number.

The Ohio Power Siting Board will review the Letter of Notification in accordance with Ohio Revised Code Section 4906.10(A) which states that the Board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the Board, unless it finds and determines all of the following: (1) The basis of the need for the facility; (2) The nature of the probable environmental impact; (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations; (4) In the case of an electric transmission line, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability; (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under Sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under Section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under Section 4561.341 of the Revised Code; (6) That the facility will serve the public interest, convenience, and necessity; (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility; rules adopted to evaluate impact under Division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

Affected persons may file comments or motions to intervene in accordance with Ohio Administrative Code Rule 4906-2-12 with the Board up to ten (10) days following the publication of this notice. Comments or motions should be addressed to the Ohio Power Siting Board, 180 East Broad Street, Columbus, Ohio 43215-3793 and cite Case No. 17-819-EL-BLN. Persons may contact the Ohio Power Siting Board at 1-866-270-OPSB (6772) or contactOPSB@puc.state.oh.us.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/19/2017 10:38:42 AM

in

Case No(s). 17-0819-EL-BLN

Summary: Letter of Notification of Trumbull Energy Center Electrical Interconnection - Part 3
electronically filed by Teresa Orahoud on behalf of Sally W. Bloomfield