

**Stream & Location:** Euclid Creek Ust of St. Clair **RM:** L.65 **Date:** 06/21/18

Seth Nothen Justin Teke **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District

**River Code:** - - **STORET #:** - - **Lat./ Long.:** 41.5732 181.5420 **Office verified location**

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

<p><b>BEST TYPES</b></p> <input type="checkbox"/> BLDR / SLABS [10] <input type="checkbox"/> BOULDER [9] <input type="checkbox"/> GOBBLE [8] <input type="checkbox"/> GRAVEL [7] <input type="checkbox"/> SAND [6] <input checked="" type="checkbox"/> BEDROCK [5]	<p><b>POOL RIFFLE</b></p> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<p><b>OTHER TYPES</b></p> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> MUCK [2] <input type="checkbox"/> SILT [2] <input type="checkbox"/> ARTIFICIAL [0]	<p><b>POOL RIFFLE</b></p> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p><b>ORIGIN</b></p> <input type="checkbox"/> LIMESTONE [1] <input type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LAGUSTURINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	<p><b>QUALITY</b></p> <input type="checkbox"/> HEAVY [-2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] <input type="checkbox"/> EXTENSIVE [2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1]
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**NUMBER OF BEST TYPES:**  4 or more [2]  3 or less [0]

**Comments**

**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.)

<p><input type="checkbox"/> UNDERCUT BANKS [1]  <input type="checkbox"/> OVERHANGING VEGETATION [1]  <input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]  <input type="checkbox"/> ROOTMATS [1]</p>	<p><input type="checkbox"/> POOLS &gt; 70cm [2]  <input type="checkbox"/> ROOTWADS [1]  <input type="checkbox"/> BOULDERS [1]</p>	<p><input type="checkbox"/> OXBOWS, BACKWATERS [1]  <input type="checkbox"/> AQUATIC MACROPHYTES [1]  <input type="checkbox"/> LOGS OR WOODY DEBRIS [1]</p>	<p><b>AMOUNT</b>                  Check ONE (Or 2 &amp; average)  <input type="checkbox"/> EXTENSIVE &gt;75% [1]  <input type="checkbox"/> MODERATE 25-75% [1]  <input type="checkbox"/> SPARSE 5-25% [3]  <input type="checkbox"/> NEARLY ABSENT &lt;5% [1]             </p>
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**Comments**

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

<p><b>SINUOSITY</b></p> <input type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	<p><b>DEVELOPMENT</b></p> <input type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<p><b>CHANNELIZATION</b></p> <input type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> REGENT OR NO RECOVERY [1]	<p><b>STABILITY</b></p> <input type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]
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**Comments**

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

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

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<p><b>MAXIMUM DEPTH</b>                  Check ONE (ONLY)  <input type="checkbox"/> &gt; 1m [8]  <input type="checkbox"/> 0.7-1m [4]  <input type="checkbox"/> 0.4-0.7m [2]  <input type="checkbox"/> 0.2-0.4m [1]  <input type="checkbox"/> &lt; 0.2m [0]             </p>	<p><b>CHANNEL WIDTH</b>                  Check ONE (Or 2 &amp; average)  <input type="checkbox"/> POOL WIDTH &gt; RIFFLE WIDTH [2]  <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]  <input type="checkbox"/> POOL WIDTH &lt; RIFFLE WIDTH [0]             </p>	<p><b>CURRENT VELOCITY</b>                  Check ALL that apply  <input type="checkbox"/> TORRENTIAL [-1]  <input type="checkbox"/> VERY FAST [1]  <input type="checkbox"/> FAST [1]  <input type="checkbox"/> MODERATE [1]  <input type="checkbox"/> SLOW [1]  <input type="checkbox"/> INTERSTITIAL [-1]  <input type="checkbox"/> INTERMITTENT [-2]  <input type="checkbox"/> EDDIES [1]             </p>	<p><b>Recreation Potential</b>  <input checked="" type="checkbox"/> Primary Contact  <input type="checkbox"/> Secondary Contact                  (circle one and comment on back)</p>
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**Comments**

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:  NO RIFFLE [metric=0]

<p><b>RIFFLE DEPTH</b></p> <input type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5-10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric=0]	<p><b>RUN DEPTH</b></p> <input type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	<p><b>RIFFLE / RUN SUBSTRATE</b></p> <input type="checkbox"/> STABLE (e.g., Gobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<p><b>RIFFLE / RUN EMBEDDEDNESS</b></p> <input type="checkbox"/> NONE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]
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**Comments**

**6] GRADIENT** (16.2 ft/ml)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-6]

**DRAINAGE AREA** (2.18 mi<sup>2</sup>)

**% POOL:**  **% GLIDE:**  **% RUN:**  **% RIFFLE:**

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
  - WADE
  - LINE
  - OTHER
- STAGE**
- HIGH
  - UP
  - NORMAL
  - LOW
  - DRY

**DISTANCE**

- 0.6 Km
  - 0.2 Km
  - 0.15 Km
  - 0.12 Km
  - OTHER
- CLARITY**
- 1st --sample pass-- 2nd
- < 20 cm
  - 20-40 cm
  - 40-70 cm
  - > 70 cm
  - SECCHI DEPTH

**CANOPY**

- > 85% - OPEN
  - 65% - 85%
  - 30% - 65%
  - 10% - 30%
  - < 10% - CLOSED
- 1st \_\_\_\_\_ cm
- 2nd \_\_\_\_\_ cm

**CJ RECREATION**

AREA DEPTH

POOL:  >100ft<sup>2</sup>  >3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- GROWTHS / OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

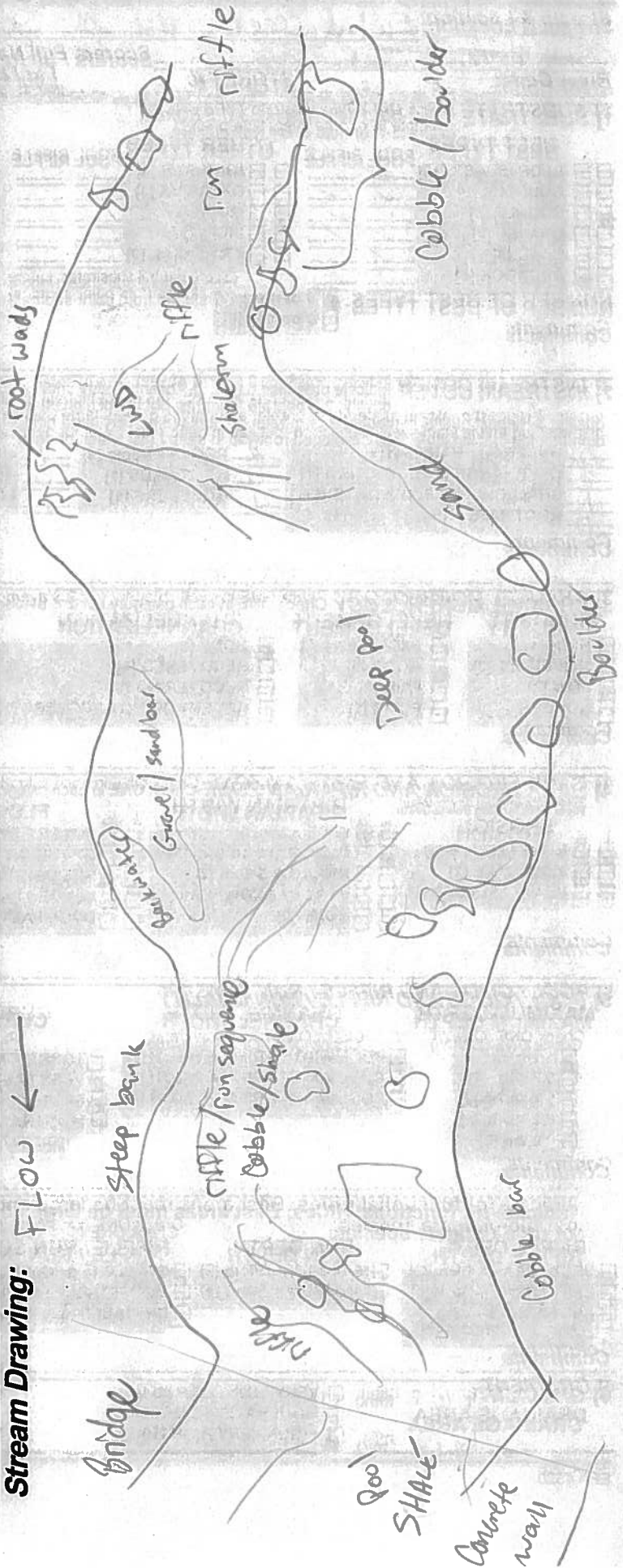
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- width
- depth
- max. depth
- bankfull width
- bankfull x depth
- W/D ratio
- bankfull max. depth
- flood prone x width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**





Stream & Location: Euclid Creek Dst of Lakeshore Boulevard RM: 0.55 Date: 06/21/18

Scorers Full Name & Affiliation: Seth Hothem, Justin Teke, Mario Meany Northeast Ohio Regional Sewer District

River Code: - STORET #: - Lat./ Long.: 41.5833 181.84358 Office verified location

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

<b>BEST TYPES</b>		<b>OTHER TYPES</b>		<b>ORIGIN</b>		<b>QUALITY</b>	
<input type="checkbox"/> BLDG/SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<b>Substrate</b> <span style="border: 1px solid black; border-radius: 10px; padding: 5px;">135</span> Maximum 20
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> COBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/>	<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/>	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/>	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>			<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/>	<input type="checkbox"/> MODERATE [-1]	

Check ONE (Or 2 & average)

NUMBER OF BEST TYPES:  4 or more [2]  3 or less [0]

Comments: \_\_\_\_\_

**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.

<u>1</u> UNDERCUT BANKS [1]	<u>3</u> POOLS > 70cm [2]	<u>1</u> OXBOWS, BACKWATERS [1]	<b>AMOUNT</b> Check ONE (Or 2 & average)
<u>2</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<u>1</u> AQUATIC MACROPHYTES [1]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>1</u> LOGS OR WOODY DEBRIS [1]	
<u>1</u> ROOTMATS [1]			

Comments: \_\_\_\_\_

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

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> REGENT OR NO RECOVERY [1]	

Comments: No riffles, but two good pools

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

<b>EROSION</b>	<b>RIPARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>
<input checked="" type="checkbox"/> NONE/LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY/SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

Comments: 0.75

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b> Check ONE (ONLY)	<b>CHANNEL WIDTH</b> Check ONE (Or 2 & average)	<b>CURRENT VELOCITY</b> Check ALL that apply	<b>Recreation Potential</b> <b>Primary Contact</b> <b>Secondary Contact</b> (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]	
<input type="checkbox"/> 0.7-1m [4]	<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> SLOW [1]	<b>Pool / Current</b> Maximum 12
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> VERY FAST [1]	
<input type="checkbox"/> 0.2-0.4m [1]		<input type="checkbox"/> FAST [1]	<b>Pool / Current</b> Maximum 12
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> MODERATE [1]	

Comments: Backflow from Lake Erie.

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

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

Comments: \_\_\_\_\_

**6] GRADIENT** ( 5.9 ft/ml)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-6]

**DRAINAGE AREA** ( 23 mi<sup>2</sup>)

% POOL:  % GLIDE:

% RUN:  % RIFFLE:

Gradient Maximum 10

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

**A) SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
- WADE
- L. LINE
- OTHER

**STAGE**

- HIGH
- UP
- NORMAL
- LOW
- DRY

**DISTANCE**

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / O.T.B.
- SECCHI DEPTH

**CANOPY**

- > 65% - OPEN
- 55% - 65%
- 30% - 55%
- 10% - 30%
- < 10% - CLOSED

**CJ) RECREATION**

AREA DEPTH  
POOL:  > 100ft<sup>2</sup>  > 3ft

**BJ) AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MAGNOPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SOUM
- OIL / SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSO/SOCS/OUTFALLS

**DJ) MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMoured / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ) ISSUES**

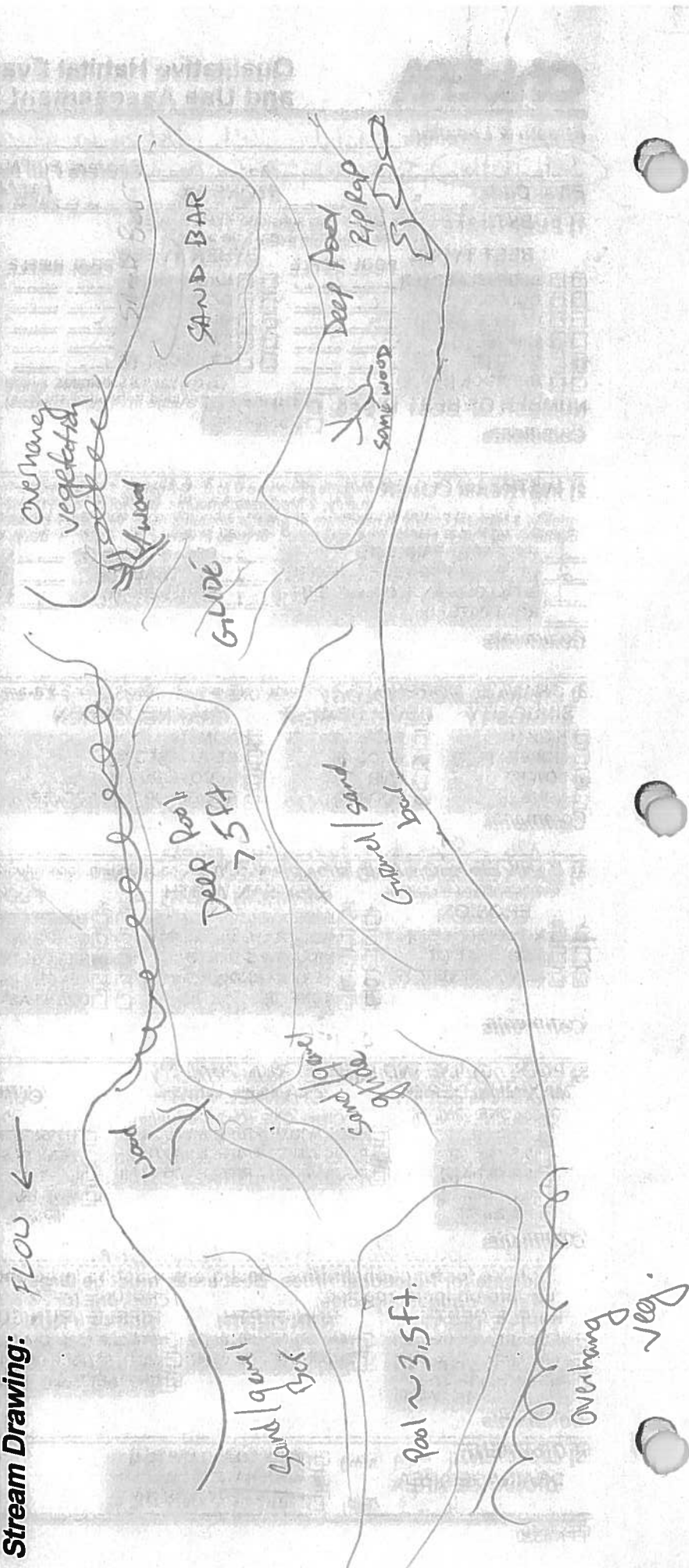
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ) MEASUREMENTS**

- width
- depth
- max. depth
- bankfull width
- bankfull depth
- W/D ratio
- bankfull max. depth
- floodprone % width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**





# Lake / Lacustrary (Lentic) QHEI Field Sheet Ohio Environmental Protection Agency QHEI Score: 45.75

RIVERCODE \_\_\_\_\_ RIVERMILE 0.55 WATERBODY Euclid Creek DISTANCE ASSESSED (m): 200  
 DATE 6/21/18 LOCATION Downstream of Lakeshore Boulevard  
 SCORER Seth Hoffman LAT. 41.5833 LONG. -81.84358 COMMENT \_\_\_\_\_  
Justin Telep

1) SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % or note every type present); LAKE: \_\_\_\_\_ LACUSTRARY: \_\_\_\_\_

TYPE		SHORE	BOTTOM	SHORE		BOTTOM	SUBSTRATE ORIGIN		SUBSTRATE QUALITY		Substrate <span style="border: 1px solid black; border-radius: 50%; padding: 5px; font-size: 24px;">13</span> Max 20
<input type="checkbox"/> BLD/SLABS [7]				<input type="checkbox"/> HARDPAN [4]			<input type="checkbox"/> LIMESTONE [1]	SLT	<input type="checkbox"/> SILT HEAVY [-2]	SLT ORIGIN:	
<input type="checkbox"/> BOULDER [10]		X		<input type="checkbox"/> BEDROCK [3]			<input checked="" type="checkbox"/> TILLS [1]		<input type="checkbox"/> SILT MODERATE [-1]		
<input type="checkbox"/> COBBLE [8]		X		<input type="checkbox"/> DETRITUS [3]			<input type="checkbox"/> WETLANDS [1]	<input type="checkbox"/> SILT NORMAL [0]	<input type="checkbox"/> SILT FREE [1]		
<input type="checkbox"/> GRAVEL [7]		X		<input type="checkbox"/> SILT [2]			<input type="checkbox"/> LACUSTRARINE [1]	<input type="checkbox"/> CLAY [-2]	<input type="checkbox"/> INDUSTRIAL [-1]		
<input type="checkbox"/> SAND [6]		X		<input type="checkbox"/> MUCK [2]		X	<input type="checkbox"/> SANDSTONE [1]	<input type="checkbox"/> ORGANIC [1]	<input type="checkbox"/> NONE [1]		
							<input type="checkbox"/> RIP/RAP [1]				
							<input type="checkbox"/> HARDPAN [0]				
							<input type="checkbox"/> SHALE [-1]				
							<input type="checkbox"/> COAL/ORE [-2]				

NOTE: Ignore sludge that originates from point-sources; score on natural substrates  
 NUMBER OF SUBSTRATE TYPES:  - 5 or More [2]  - 4 or Less [0]

COMMENTS \_\_\_\_\_

2) COVER TYPES TYPE: (Check A# That Apply) AMOUNT: (Check ONLY One or check 2 and AVERAGE)

<input type="checkbox"/> OFF-SHORE SAND BARS [4]	<input type="checkbox"/> DEEPWATER > 1 M [1]	<input type="checkbox"/> WETLAND POOLS [1]	Cover <span style="border: 1px solid black; border-radius: 50%; padding: 5px; font-size: 24px;">8</span> Max 20
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> SUBMERGED AQUATIC VEG. [4]	
<input type="checkbox"/> SHALLOWS (ON BEACH) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]	
<input type="checkbox"/> ROOTMATS [1]	<input type="checkbox"/> SAND BEACH [1]	<input type="checkbox"/> GRAVEL BEACH [1]	
<input type="checkbox"/> EXTENSIVE > 75% [9]			
<input type="checkbox"/> MODERATE 25-75% [7]			
<input type="checkbox"/> SPARSE 5-25% [3]			
<input type="checkbox"/> NEARLY ABSENT < 5% [1]			

COMMENTS \_\_\_\_\_

3) SHORELINE MORPHOLOGY (Check ONLY one PER category or check 2 and AVERAGE) MODIFICATIONS OF SAMPLED SHORELINE

SHORE SNUOSITY	DEVELOPMENT	MODIFICATION	STABILITY	ShoreLine <span style="border: 1px solid black; border-radius: 50%; padding: 5px; font-size: 24px;">20</span> Max 20
<input type="checkbox"/> HIGH [2] <input type="checkbox"/> MODERATE [4] <input type="checkbox"/> LOW [3] <input type="checkbox"/> NONE [1]	<input type="checkbox"/> EXCELLENT [6] <input type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	<input type="checkbox"/> NONE [7] <input type="checkbox"/> RECOVERED [5] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	<input type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]	
SHORE to BOTTOM SLOPE MORPHOLOGIES		AVERAGE DEPTH (of 5 measures)		
<input type="checkbox"/> SLOPE < 15 deg [0] <input type="checkbox"/> SLOPE > 45 deg [2]		<input type="checkbox"/> < 50 cm [0] <input type="checkbox"/> > 400 - 500 cm [4]		
<input type="checkbox"/> SLOPE < 25 deg [1] <input type="checkbox"/> SLOPE 90 deg [0]		<input type="checkbox"/> 50 - < 100 cm [1] <input type="checkbox"/> > 500 - 900 cm [2]		
<input type="checkbox"/> SLOPE > 25 deg [3]		<input type="checkbox"/> ≥ 100 - 200 cm [2] <input type="checkbox"/> > 900 cm [1]		
		<input type="checkbox"/> > 200 - 400 cm [3]		
MODIFICATIONS OF SAMPLED SHORELINE <input type="checkbox"/> CEMENTED [-1] <input type="checkbox"/> STEEL BULKHEADS [-2] <input type="checkbox"/> RIP RAPPED [1] <input type="checkbox"/> ISLANDS [1] <input type="checkbox"/> RAILROAD TIES [-1] <input type="checkbox"/> DIKES [-1] <input type="checkbox"/> DREDGED [-1] <input type="checkbox"/> BANK SHAPING [-1] <input type="checkbox"/> TWO SIDE CHANNEL <input type="checkbox"/> WOOD PILINGS [1] MODIFICATIONS [-1] <input type="checkbox"/> SHIP CHANNEL [-2]				

COMMENTS: Slope 725° and < 45° on shore left, 745° on shore right

4) RIPARIAN ZONE AND BANK EROSION (Check ONE box PER bank or 2 and AVERAGE) ★ Shore Right Looking East or South on Lake ★  
 ★ Shore Right Looking Toward Lake in Lacustrary ★

RIPARIAN WIDTH		SHORE LINE QUALITY (PAST 100 FOOT RIPARIAN)		BANK EROSION		Riparian <span style="border: 1px solid black; border-radius: 50%; padding: 5px; font-size: 24px;">4.75</span> Max 10
L	R (Per Bank)	L	R (Most Predominant Per Bank)	L	R (Per Bank)	
<input type="checkbox"/> WIDE > 50 m [4]		<input type="checkbox"/> FOREST, WETLAND, LAKE [3]		<input type="checkbox"/> CONSERVATION TILLAGE [1]	<input type="checkbox"/> NONELITTLE [3]	Max 10
<input type="checkbox"/> MODERATE 10-50 m [3]		<input type="checkbox"/> SHRUB OR OLD FIELD [2]		<input type="checkbox"/> URBAN OR INDUSTRIAL [0]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> NARROW 5-10 m [2]		<input type="checkbox"/> VINEYARD, ORCHARD [2]		<input type="checkbox"/> OPEN PASTURE, ROW CROP [0]	<input type="checkbox"/> HEAVY/SEVERE [-3]	
<input type="checkbox"/> VERY NARROW < 5 m [1]		<input type="checkbox"/> FENCED PASTURE [1]		<input type="checkbox"/> MINING CONSTRUCTION [0]		
<input type="checkbox"/> NONE [0]		<input type="checkbox"/> RESIDENTIAL PARK, NEW FIELD [1]		<input type="checkbox"/> DIKED WETLAND [0]		

COMMENTS \_\_\_\_\_

5) AQUATIC VEGETATION QUALITY: PLANT SPECIES OBSERVED (Sum All Scores) (Score all for observed abundance. ABUNDANT = [3], COMMON = [5], FEW = [1], UNCOMMON = [0])  NO AQUATIC VEGETATION = 0

<input type="checkbox"/> Pond Lilies (NYMPHAEA)	<input type="checkbox"/> Sedge (CYPERACEAE)	<input type="checkbox"/> Wild Celery (VALLISNERIA)	Vegetation <span style="border: 1px solid black; border-radius: 50%; padding: 5px; font-size: 24px;">0</span> Max 30
<input type="checkbox"/> Pond Weed (POTAMOGETON)	<input type="checkbox"/> Bulrush (SCIRPUS)	<input type="checkbox"/> Waterweed (ELODEA)	
<input type="checkbox"/> Wild Rice (ZIZANIA)			
<input type="checkbox"/> Purple Loosestrife	<input type="checkbox"/> Reed Grass	<input type="checkbox"/> Eurasian Milfoil	
<input type="checkbox"/> Cattails	<input type="checkbox"/> Algae (mats)	<input type="checkbox"/> Algae (planktonic)	

COMMENTS \_\_\_\_\_

Is the Sampling Reach Representative of Area Habitat? (Y/N) Y If Not, Explain: \_\_\_\_\_

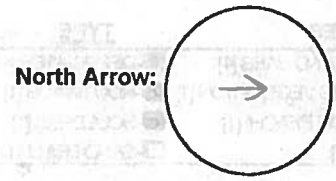
Depth measures: 200cm 200cm 50cm 50cm 75cm  
 Zebra Mussel/Quagga Mussel Coverage  >60%  60->25%  25->10%  <10->1%  1-0%

First Sampling Pass:	Gear <u>Longline</u>	Distance <u>200m</u>	Water Clarity <u>Clear</u>	Wave Height <u>0</u>	<input type="checkbox"/> Subjective Rating (1-10) <input type="checkbox"/> Aesthetic Rating (1-10)
Second Sampling Pass:	_____	_____	_____	_____	
Third Sampling Pass:	_____	_____	_____	_____	

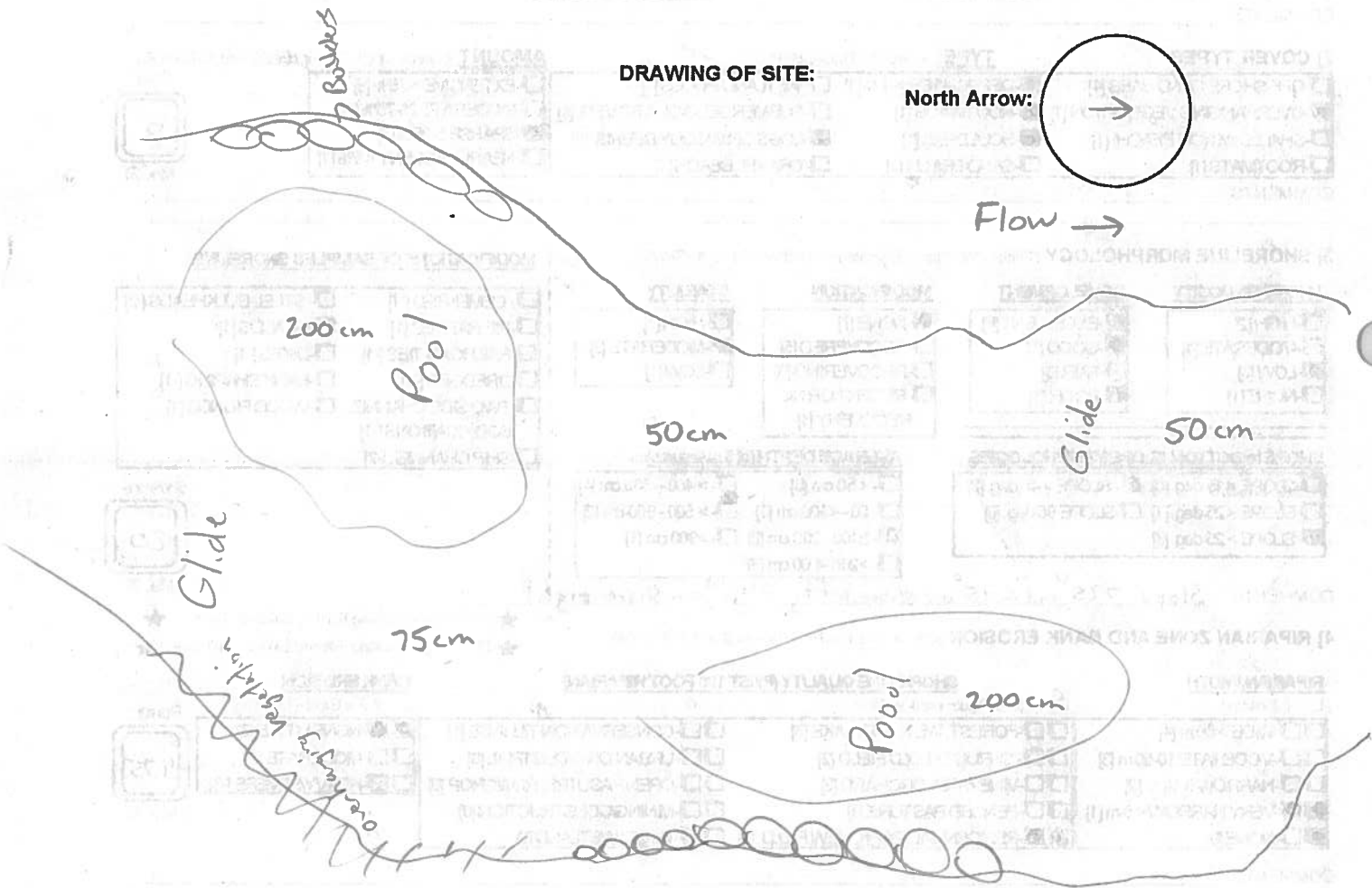
Photos: \_\_\_\_\_

WATERBODY MEASUREMENTS: AVERAGE WIDTH: 14m AVERAGE DEPTH: 115cm Maximum Depth: 200cm

**DRAWING OF SITE:**



Flow →



**Stream & Location:** Euclid Creek Ust. Villa Angela Dr. **RM:** 0.40 **Date:** 6/15/18

**River Code:** Materson **Scorers Full Name & Affiliation:** Northeast Ohio Regional Sewer District  
**STORST #:** \_\_\_\_\_ **Lat./ Long.:** 41.5857/81.5622 **Office verified location**

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

<b>BEST TYPES</b>		<b>OTHER TYPES</b>		<b>ORIGIN</b>		<b>QUALITY</b>	
<input type="checkbox"/> BLDR / SLABS [10]	<input checked="" type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARDPAN [4]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> SILT	<input type="checkbox"/> HEAVY [-2]	<b>Substrate</b> <span style="border: 1px solid black; border-radius: 15px; padding: 5px; font-size: 24px;">55</span> Maximum 20
<input type="checkbox"/> BOULDER [9]	<input checked="" type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input checked="" type="checkbox"/>	<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> MODERATE [-1]	
<input type="checkbox"/> GOBBLE [8]	<input checked="" type="checkbox"/>	<input type="checkbox"/> MUCK [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/>	<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> FREE [1]	
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/>	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/> LAGUSTURINE [0]	<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> EXTENSIVE [-2]	
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>			<input type="checkbox"/> GOAL FINES [-2]	<input type="checkbox"/> MODERATE [-1]	<input type="checkbox"/> NORMAL [0]	
				<b>EMBEDDEDNESS</b>			
				<input type="checkbox"/> NONE [1]			

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

**Comments** \_\_\_\_\_

**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.

<u>1</u> UNDERCUT BANKS [1]	<u>2</u> POOLS > 70cm [2]	<u>1</u> OXBOWS, BACKWATERS [1]	<b>AMOUNT</b> Check ONE (Or 2 & average) <input type="checkbox"/> EXTENSIVE >75% [11] <input checked="" type="checkbox"/> MODERATE 25-75% [7] <input type="checkbox"/> SPARSE 5-<25% [3] <input type="checkbox"/> NEARLY ABSENT <5% [1]
<u>2</u> OVERHANGING VEGETATION [1]	<u>1</u> ROOTWADS [1]	<u>1</u> AQUATIC MACROPHYTES [1]	
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>1</u> BOULDERS [1]	<u>2</u> LOGS OR WOODY DEBRIS [1]	
<u>1</u> ROOTMATS [1]			

**Comments** \_\_\_\_\_

**Cover**  
Maximum 20 15

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

<b>SINUOSITY</b>	<b>DEVELOPMENT</b>	<b>CHANNELIZATION</b>	<b>STABILITY</b>
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

**Comments** wetland area still recovering from restoration.

**Channel**  
Maximum 20 15

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

<b>EROSION</b>	<b>RIPARIAN WIDTH</b>	<b>FLOOD PLAIN QUALITY</b>
<input checked="" type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]
<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]
	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]

**Comments** \_\_\_\_\_

**Riparian**  
Maximum 10 6

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

<b>MAXIMUM DEPTH</b> Check ONE (ONLY)	<b>CHANNEL WIDTH</b> Check ONE (Or 2 & average)	<b>CURRENT VELOCITY</b> Check ALL that apply	<b>Recreation Potential</b> <span style="border: 1px solid black; border-radius: 15px; padding: 5px; font-size: 18px;">Primary Contact</span> <span style="border: 1px solid black; border-radius: 15px; padding: 5px; font-size: 18px;">Secondary Contact</span> (circle one and comment on back)
<input checked="" type="checkbox"/> > 1m [6]	<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [1]	
<input type="checkbox"/> 0.7-1m [4]	<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]	<b>Pool / Current</b> Maximum 12 <span style="border: 1px solid black; border-radius: 15px; padding: 5px; font-size: 24px;">9</span>
<input type="checkbox"/> 0.4-0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]	
<input type="checkbox"/> 0.2-0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]	
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> SLOW [1]	
		<input type="checkbox"/> INTERSTITIAL [-1]	
		<input type="checkbox"/> INTERMITTENT [-2]	
		<input type="checkbox"/> EDDIES [1]	

**Comments** \_\_\_\_\_

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

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

**Comments** \_\_\_\_\_

**Riffle / Run**  
Maximum 8 0

**6] GRADIENT** (5.9 ft/m)  VERY LOW - LOW [2-4]  MODERATE [6-10]  HIGH - VERY HIGH [10-5]

**DRAINAGE AREA** (2312 mi<sup>2</sup>)

**% POOL:**    **% GLIDE:**   

**% RUN:**    **% RIFFLE:**   

**Gradient**  
Maximum 10 6



Comment RE: Reach consistency/Is reach typical of stream?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.

**AJ SAMPLED REACH**

Check ALL that apply

**METHOD**

- BOAT
- WADE
- L. LINE
- OTHER

**STAGE**

- HIGH
- UP
- NORMAL
- LOW
- DRY

**DISTANCE**

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
- 20-40 cm
- 40-70 cm
- > 70 cm / O.T.B.
- SECCI DEPTH

meters

**CANOPY**

- > 85% - OPEN
- 65% - 80%
- 30% - 65%
- 10% - 30%
- < 10% - CLOSED

**CJ RECREATION**

- AREA DEPTH
- POOL:  > 100ft?  > 3ft

**BJ AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSO / SSOs / OUTFALLS

**DJ MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURD / SLUMPS
- ISLANDS / SCoured
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

**EJ ISSUES**

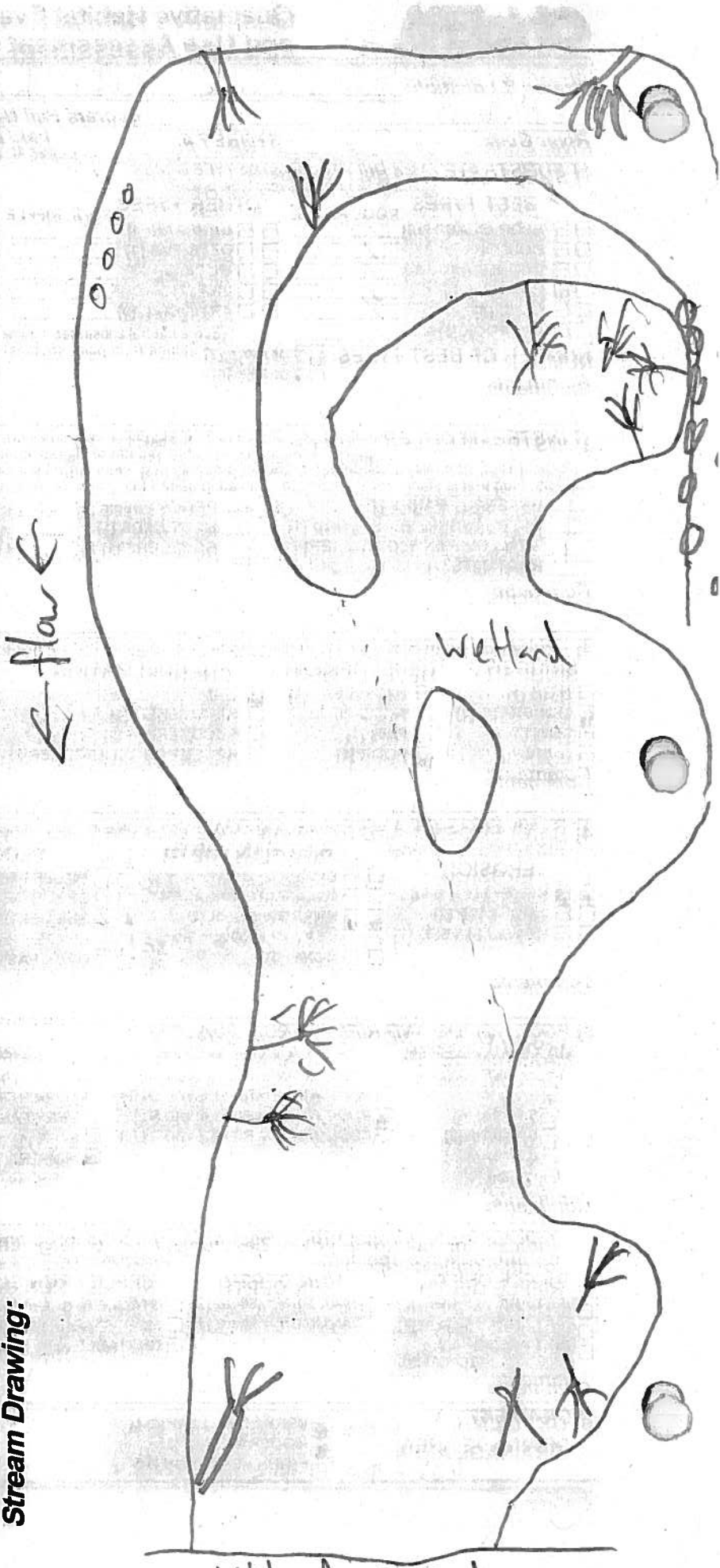
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT & GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**FJ MEASUREMENTS**

- width
- max. depth
- bankfall width
- bankfall & depth
- W/D ratio
- bankfall max. depth
- floodprone & width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**





# Lake / Lacustrary (Lentic) QHEI Field Sheet



Environmental Protection Agency

QHEI Score:

**54.5**

RIVERCODE \_\_\_\_\_ RIVERMILE 0.40 WATERBODY Enclid Creek DISTANCE ASSESSED (m): 500  
 DATE 6/15/18 LOCATION 1st Wildwood Dr. bridge  
 SCORER M. J. Jenson LAT. 41.5857 LONG. 81.5622 COMMENT \_\_\_\_\_

1] SUBSTRATE (Check ONLY Two Substrate TYPE BOXES; Estimate % or note every type present); LAKE: \_\_\_\_\_ LACUSTUARY: \_\_\_\_\_

TYPE		SHORE	BOTTOM	SHORE		BOTTOM	SUBSTRATE ORIGIN		SUBSTRATE QUALITY		Substrate <b>11.5</b> Max 20	
							Check ONE (or 2 & AVERAGE)		Check ONE (or 2 & AVERAGE)			
<input type="checkbox"/>	ELDRSLABS [7]			<input type="checkbox"/>	HARDPAN [4]			<input type="checkbox"/>	LIMESTONE [1]	SLT:	<input type="checkbox"/>	SILT HEAVY [-2]
<input type="checkbox"/>	BOULDER [10]	<input checked="" type="checkbox"/>		<input type="checkbox"/>	BEDROCK [3]			<input checked="" type="checkbox"/>	TILLS [1]		<input checked="" type="checkbox"/>	SILT MODERATE [-1]
<input type="checkbox"/>	COBBLE [8]		<input checked="" type="checkbox"/>	<input type="checkbox"/>	DETRITUS [3]			<input type="checkbox"/>	WETLANDS [1]		<input type="checkbox"/>	SILT NORMAL [0]
<input type="checkbox"/>	GRAVEL [7]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	SILT [2]		<input checked="" type="checkbox"/>	<input type="checkbox"/>	LACUSTUARINE [1]	SLT ORIGIN:	<input type="checkbox"/>	SILT FREE [1]
<input checked="" type="checkbox"/>	SAND [6]	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MUCK [2]		<input checked="" type="checkbox"/>	<input type="checkbox"/>	SANDSTONE [1]		<input type="checkbox"/>	CLAY [-2]
								<input type="checkbox"/>	SANDSTONE [1]		<input type="checkbox"/>	INDUSTRIAL [-1]
								<input type="checkbox"/>	RIPRAP [1]		<input checked="" type="checkbox"/>	ORGANIC [1]
								<input type="checkbox"/>	HARDPAN [0]		<input type="checkbox"/>	NONE [1]
								<input type="checkbox"/>	SHALE [-1]			
								<input type="checkbox"/>	COALORE [-2]			

NOTE: Ignore sludge that originates from point-sources; score on natural substrates  
 NUMBER OF SUBSTRATE TYPES:  5 or More [2]  4 or Less [0]

COMMENTS: \_\_\_\_\_

2] COVER TYPES TYPE: (Check A# That Apply) AMOUNT: (Check ONLY One or check 2 and AVERAGE)

<input type="checkbox"/>	OFF-SHORE SAND BARS [4]	<input checked="" type="checkbox"/>	DEEPWATER > 1M [1]	<input type="checkbox"/>	WETLAND POOLS [1]	<input type="checkbox"/>	EXTENSIVE > 75% [9]
<input checked="" type="checkbox"/>	OVERHANGING VEGETATION [1]	<input type="checkbox"/>	ROOTWADS [1]	<input checked="" type="checkbox"/>	SUBMERGED AQUATIC VEG. [4]	<input checked="" type="checkbox"/>	MODERATE 25-75% [7]
<input checked="" type="checkbox"/>	SHALLOWS (ON BEACH) [1]	<input type="checkbox"/>	BOULDERS [1]	<input type="checkbox"/>	LOGS OR WOODY DEBRIS [1]	<input type="checkbox"/>	SPARSE 5-25% [3]
<input type="checkbox"/>	ROOTMATS [1]	<input type="checkbox"/>	SAND BEACH [1]	<input type="checkbox"/>	GRAVEL BEACH [1]	<input type="checkbox"/>	NEARLY ABSENT < 5% [1]

COMMENTS: \_\_\_\_\_

3] SHORELINE MORPHOLOGY (Check ONLY one PER category or check 2 and AVERAGE)

SHORE SLOPE	DEVELOPMENT	MODIFICATION	STABILITY	MODIFICATIONS OF SAMPLED SHORELINE		ShoreLine <b>16.5</b> Max 20					
<input type="checkbox"/>	HIGH [2]	<input type="checkbox"/>	EXCELLENT [6]	<input type="checkbox"/>	NONE [7]		<input type="checkbox"/>	HIGH [3]	<input type="checkbox"/>	CEMENTED [-1]	<input type="checkbox"/>
<input checked="" type="checkbox"/>	MODERATE [4]	<input type="checkbox"/>	GOOD [5]	<input checked="" type="checkbox"/>	RECOVERED [5]	<input checked="" type="checkbox"/>	MODERATE [2]	<input checked="" type="checkbox"/>	RIP RAPPED [1]	<input type="checkbox"/>	ISLANDS [1]
<input type="checkbox"/>	LOW [3]	<input type="checkbox"/>	FAIR [3]	<input type="checkbox"/>	RECOVERING [3]	<input type="checkbox"/>	LOW [1]	<input type="checkbox"/>	RAILROAD TIES [-1]	<input type="checkbox"/>	DIKES [-1]
<input type="checkbox"/>	NONE [1]	<input checked="" type="checkbox"/>	POOR [1]	<input type="checkbox"/>	RECENT OR NO RECOVERY [1]			<input type="checkbox"/>	DREDGED [-1]	<input type="checkbox"/>	BANK SHAPING [-1]
SHORE to BOTTOM SLOPE MORPHOLOGIES		AVERAGE DEPTH (of 5 measures)		MODIFICATIONS OF SAMPLED SHORELINE							
<input type="checkbox"/>	SLOPE < 15 deg. [0]	<input type="checkbox"/>	SLOPE > 45 deg. [2]	<input type="checkbox"/>	< 50 cm [0]	<input type="checkbox"/>	> 400 - 500 cm [4]	<input type="checkbox"/>	TWO SIDE CHANNEL	<input type="checkbox"/>	WOOD PILING [1]
<input type="checkbox"/>	SLOPE < 25 deg. [1]	<input type="checkbox"/>	SLOPE 90 deg. [0]	<input checked="" type="checkbox"/>	50 - < 100 cm [1]	<input type="checkbox"/>	> 500 - 900 cm [2]	<input type="checkbox"/>	SHIP CHANNEL [-2]		
<input checked="" type="checkbox"/>	SLOPE > 25 deg. [3]			<input type="checkbox"/>	> 100 - 200 cm [2]	<input type="checkbox"/>	> 900 cm [1]				
				<input type="checkbox"/>	> 200 - 400 cm [3]						

COMMENTS: \_\_\_\_\_

4] RIPARIAN ZONE AND BANK EROSION (Check ONE box PER bank or 2 and AVERAGE)

RIPARIAN WIDTH		SHORELINE QUALITY (PAST 100 FOOT RIPARIAN)				BANK EROSION		Riparian <b>6.5</b> Max 10
L	R (Per Bank)	L	R (Most Predominant Per Bank)	L	R	L	R (Per Bank)	
<input type="checkbox"/>	WIDE > 50m [4]	<input checked="" type="checkbox"/>	FOREST, WETLAND, LAKE [3]	<input type="checkbox"/>	CONSERVATION TILLAGE [1]	<input type="checkbox"/>	NONE/LITTLE [3]	
<input checked="" type="checkbox"/>	MODERATE 10-50 m [3]	<input type="checkbox"/>	SHRUB OR OLD FIELD [2]	<input type="checkbox"/>	URBAN OR INDUSTRIAL [0]	<input checked="" type="checkbox"/>	MODERATE [-1]	
<input type="checkbox"/>	NARROW 5-10 m [2]	<input type="checkbox"/>	VINEYARD, ORCHARD [2]	<input type="checkbox"/>	OPEN PASTURE, ROW/CROP [0]	<input type="checkbox"/>	HEAVY/SEVERE [-3]	
<input type="checkbox"/>	VERY NARROW < 5 m [1]	<input type="checkbox"/>	FENCED PASTURE [1]	<input type="checkbox"/>	MINING/CONSTRUCTION [0]			
<input type="checkbox"/>	NONE [0]	<input checked="" type="checkbox"/>	RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/>	DIKED WETLAND [0]			

★ Shore Right Looking East or South on Lake  
 ★ Shore Right Looking Toward Lake in Lacustrary

COMMENTS: \_\_\_\_\_

5] AQUATIC VEGETATION QUALITY: PLANT SPECIES OBSERVED (Sum All Scores)  
 (Score all for observed abundance: ABUNDANT = [3]; COMMON = [5]; FEW = [1]; UNCOMMON = [0]) NO AQUATIC VEGETATION = 0

<u>1</u>	-Pond Lilies (NYMPHAEA)	<u>1</u>	-Sedge (CYPERACEAE)	<u>0</u>	-Wild Celery (VALLISNERIA)
<u>1</u>	-Pond Weed (POTAMOGETON)	<u>1</u>	-Bulrush (SCIRPUS)	<u>1</u>	-Waterweed (ELODEA)
<u>0</u>	-Wild Rice (ZIZANIA)				

(Score all for observed abundance: ABUNDANT = [-2]; COMMON = [-1]; FEW = [0])

<u>0</u>	-Purple Loosestrife	<u>0</u>	-Reed Grass	<u>0</u>	-Eurasian Milfoil	<u>1</u>	-Cattails	<u>0</u>	-Algae (mats)	<u>1</u>	-Algae (planktonic)
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COMMENTS: \_\_\_\_\_

Is the Sampling Reach Representative of Area Habitat? (Y/N) Y If Not, Explain: \_\_\_\_\_

Depth measures: \_\_\_\_\_  
 Zebra Mussel/Quagga Mussel Coverage  >60%  60-25%  25-10%  <10-1%  1-0%

	Gear	Distance	Water Clarity	Wave Height
First Sampling Pass:	_____	_____	_____	_____
Second Sampling Pass:	_____	_____	_____	_____
Third Sampling Pass:	_____	_____	_____	_____

Subjective Rating (1-10)

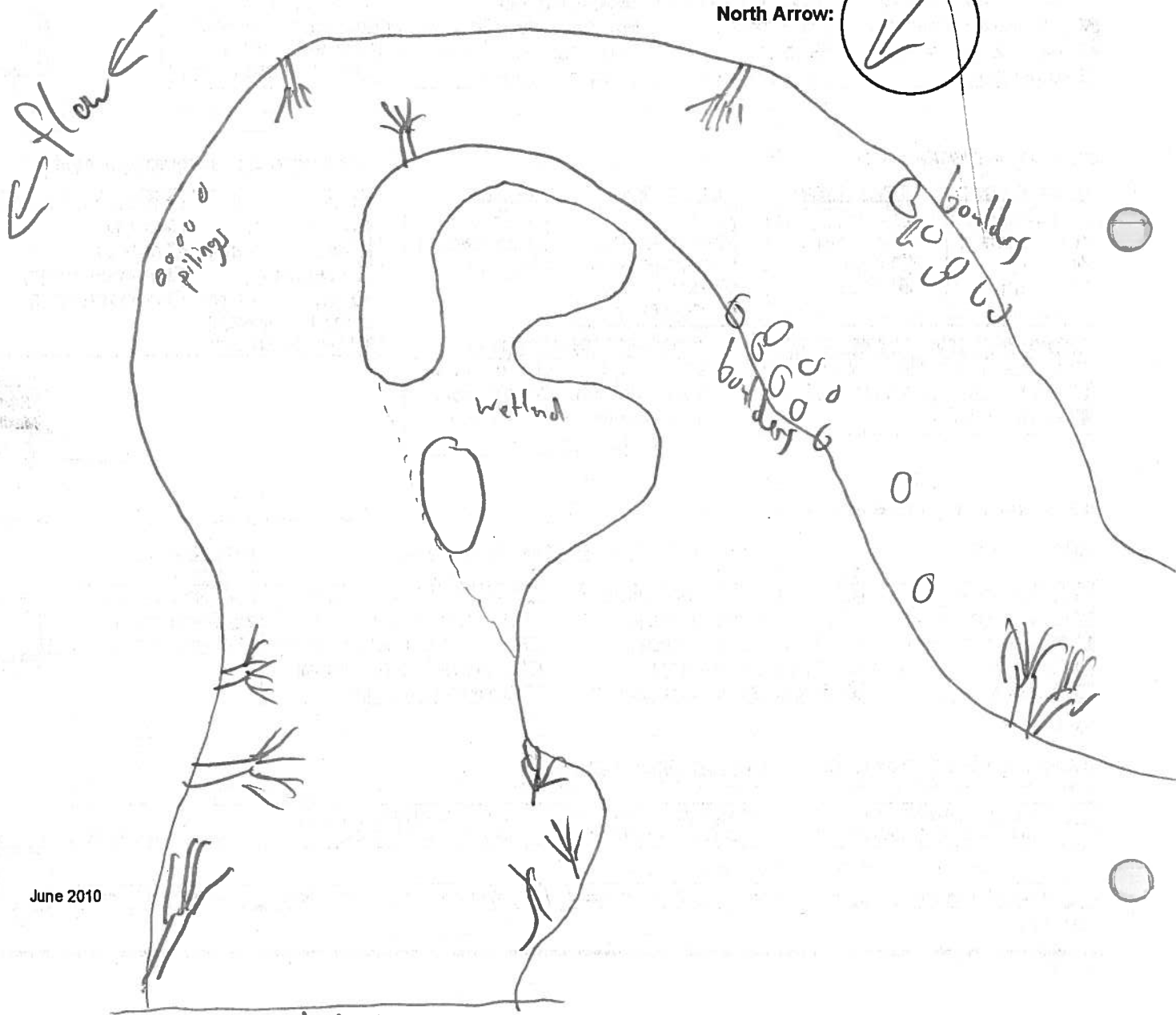
Aesthetic Rating (1-10)

Photos: \_\_\_\_\_

WATERBODY MEASUREMENTS: AVERAGE WIDTH: \_\_\_\_\_ AVERAGE DEPTH: \_\_\_\_\_ Maximum Depth: \_\_\_\_\_

**DRAWING OF SITE:**

North Arrow: 



June 2010

Wildwood Bridge