

Stream & Location: Chagrin River vs miles Rd

RM: 29.00 Date: 8/18/22

Mark Matheson Jeff Harrison

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 15-001-000 STORET #: 001511 Lat./Long.: 41.426 -81.3989

Office verified location ☐1) SUBSTRATE Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

- | BEST TYPES | POOL RIFFLE | OTHER TYPES | POOL RIFFLE |
|--|-------------------------------------|---|-------------------------------------|
| ☐ BLDR /SLABS [10] | ☒ | ☐ HARDPAN [4] | ☒ |
| ☐ BOULDER [9] | ☒ | ☐ DETRITUS [3] | ☐ |
| ☒ COBBLE [8] | ☒ | ☐ MUCK [2] | ☐ |
| ☒ GRAVEL [7] | ☒ | ☐ SILT [2] | ☒ |
| ☐ SAND [6] | ☒ | ☐ ARTIFICIAL [0] | ☐ |
| ☐ BEDROCK [5] | ☐ | | |

- | ORIGIN |
|--|
| ☐ LIMESTONE [1] |
| ☐ TILLS [1] |
| ☐ WETLANDS [0] |
| ☐ HARDPAN [0] |
| ☐ SANDSTONE [0] |
| ☐ RIP/RAP [0] |
| ☐ LACUSTURINE [0] |
| ☐ SHALE [-1] |
| ☐ COAL FINES [-2] |

- | QUALITY |
|---|
| ☐ HEAVY [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ FREE [1] |
| ☐ EXTENSIVE [-2] |
| ☐ MODERATE [-1] |
| ☐ NORMAL [0] |
| ☐ NONE [1] |

SILT

EMBEDDEDNESS

Substrate

Maximum 20

NUMBER OF BEST TYPES: ☒ 4 or more [2] sludge from point-sources
☐ 3 or less [0]

Comments

15+2+1-0.5

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.

AMOUNT

Check ONE (Or 2 & average)

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

- | |
|---|
| ☐ EXTENSIVE >75% [11] |
| ☒ MODERATE 25-75% [7] |
| ☐ SPARSE 5-<25% [3] |
| ☐ NEARLY ABSENT <5% [1] |

Comments

Cover
Maximum 20

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

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

Comments

2.5+5+6+2.5

Channel
Maximum 20

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

River right looking downstream

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

Comments

3+3+2

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

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

- | | |
|--|---|
| ☒ > 1m [6] | ☐ POOL WIDTH > RIFFLE WIDTH [2] |
| ☐ 0.7-<1m [4] | ☒ POOL WIDTH = RIFFLE WIDTH [1] |
| ☐ 0.4-<0.7m [2] | ☐ POOL WIDTH < RIFFLE WIDTH [0] |
| ☐ 0.2-<0.4m [1] | |
| ☐ < 0.2m [0] | |

- | | |
|--|--|
| ☐ TORRENTIAL [-1] | ☒ SLOW [1] |
| ☐ VERY FAST [1] | ☐ INTERSTITIAL [-1] |
| ☒ FAST [1] | ☐ INTERMITTENT [-2] |
| ☒ MODERATE [1] | ☐ EDDIES [1] |

Indicate for reach - pools and riffles.

Comments

6+1+3

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)Pool /
Current
Maximum 12Indicate 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 | RUN DEPTH | RIFFLE / RUN SUBSTRATE | RIFFLE / RUN EMBEDDEDNESS |
|---|--|--|---|
| ☒ BEST AREAS > 10cm [2] | ☒ MAXIMUM > 50cm [2] | ☒ STABLE (e.g., Cobble, Boulder) [2] | ☐ NONE [2] |
| ☐ BEST AREAS 5-10cm [1] | ☐ MAXIMUM < 50cm [1] | ☒ MOD. STABLE (e.g., Large Gravel) [1] | ☐ LOW [1] |
| ☐ BEST AREAS < 5cm [metric=0] | | ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0] | ☐ MODERATE [0] |
| | | | ☐ EXTENSIVE [-1] |

Comments

2+2+1.5+1

Riffle /
Run
Maximum 86) GRADIENT (32.6 ft/mi)
DRAINAGE AREA (56 mi²)

- | |
|---|
| ☐ VERY LOW - LOW [2-4] |
| ☐ MODERATE [6-10] |
| ☒ HIGH - VERY HIGH [10-6] 7 Very high |

%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.

AJ SAMPLED REACH

Check ALL that apply

METHOD

- ☐ BOAT
☐ WADE
☐ L. LINE
☐ OTHER
- STAGE**
- 1st-sample pass-- 2nd
- ☐ 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/CTB
☐ SECCHI DEPTH

meters

CANOPY

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

CJ RECREATION

- AREA DEPTH
POOL: ☐ >100ft² ☐ >3ft

BJ AESTHETICS

- ☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/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
ARMOURED / SLUMPS
ISLANDS / SCoured
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

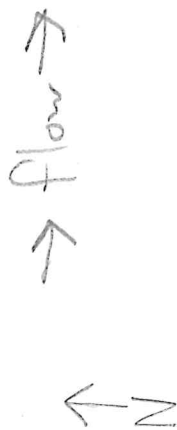
EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H₂O / TILE / H₂O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

- $\bar{x}$ width
 $\bar{x}$ depth
max. depth
 $\bar{x}$ bankfull width
bankfull $\bar{x}$ depth
W/D ratio
bankfull max. depth
floodprone $\bar{x}$ width
entrench. ratio
Legacy Tree:

Stream Drawing:



Stream & Location: Chagrin River, US Willey Creek / S. Chagrin RM: 26.7 Date: 8/18/22
Reservation Mark M. Hosen NEARBY Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District
River Code: 13-001-000 STORET #: DP01P03 Lat./Long.: 41.4267 -81.4174 Office verified location ☐

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

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES		ORIGIN		QUALITY	
	POOL RIFFLE		POOL RIFFLE				
☒ BLDR / SLABS [10]	☒	☐ HARDPAN [4]	☐	☐ LIMESTONE [1]	☐	☐ HEAVY [-2]	Substrate 18 Maximum 20
☐ BOULDER [9]	☒	☐ DETRITUS [3]	☐	☒ TILLS [1]	☐	☐ MODERATE [-1]	
☐ COBBLE [8]	☒	☐ MUCK [2]	☐	☐ WETLANDS [0]	☐	☐ NORMAL [0]	
☐ GRAVEL [7]	☒	☐ SILT [2]	☐	☐ HARDPAN [0]	☐	☐ FREE [1]	
☐ SAND [6]	☒	☐ ARTIFICIAL [0]	☐	☐ SANDSTONE [0]	☐	☐ EXTENSIVE [-2]	
☐ BEDROCK [5]	☒			☐ RIP/RAP [0]	☐	☐ MODERATE [-1]	
				☐ LACUSTURINE [0]	☐	☐ NORMAL [0]	
				☐ SHALE [-1]	☐	☐ NONE [1]	
				☐ COAL FINES [-2]	☐		

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

Comments: 15 + 2 + 1 + 0

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.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☐ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☐ MODERATE 25-75% [7]
☐ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☐ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments: 6 + 7

Cover
Maximum
20

13

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

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

Comments: 2 + 5 + 6 + 3

Channel
Maximum
20

16

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

River right looking downstream

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

Comments: 3 + 4 + 2

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

9

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] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☒ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact
(circle one and comment on back)

Pool / Current
Maximum
12

10

Comments: 6 + 1 + 3

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

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

- ☒ BEST AREAS > 10cm [2] ☒ MAXIMUM > 50cm [2] ☒ STABLE (e.g., Cobble, Boulder) [2]
☐ BEST AREAS 5-10cm [1] ☐ MAXIMUM < 50cm [1] ☐ MOD. STABLE (e.g., Large Gravel) [1]
☐ BEST AREAS < 5cm [metric=0] ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

- ☐ NONE [2]
☒ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]

Riffle / Run
Maximum
8

7

Comments: 2 + 2 + 2 + 1

6) **GRADIENT** (31.04 ft/mi)

DRAINAGE AREA

(122 mi²)

☐ VERY LOW - LOW [2-4]

☐ MODERATE [6-10]

☐ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

%RUN:

%RIFFLE:

Gradient
Maximum
10

4

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

STAGE

- 1st sample pass-- 2nd
- HIGH ☐ UP ☐ NORMAL ☐ LOW ☐ DRY ☐

CLARITY

- 1st sample pass-- 2nd
- < 20 cm ☐ 20-40 cm ☐ 40-70 cm ☐ > 70 cm/CTB ☐
- SECCHI DEPTH ☐

meters

CANOPY

- > 85% - OPEN ☐ 55% - 85% ☐ 30% - 55% ☐ 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 ☐ CSOs/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 / SCOURD ☐ IMPOUNDED / DESICCATED ☐ FLOOD CONTROL / DRAINAGE ☐

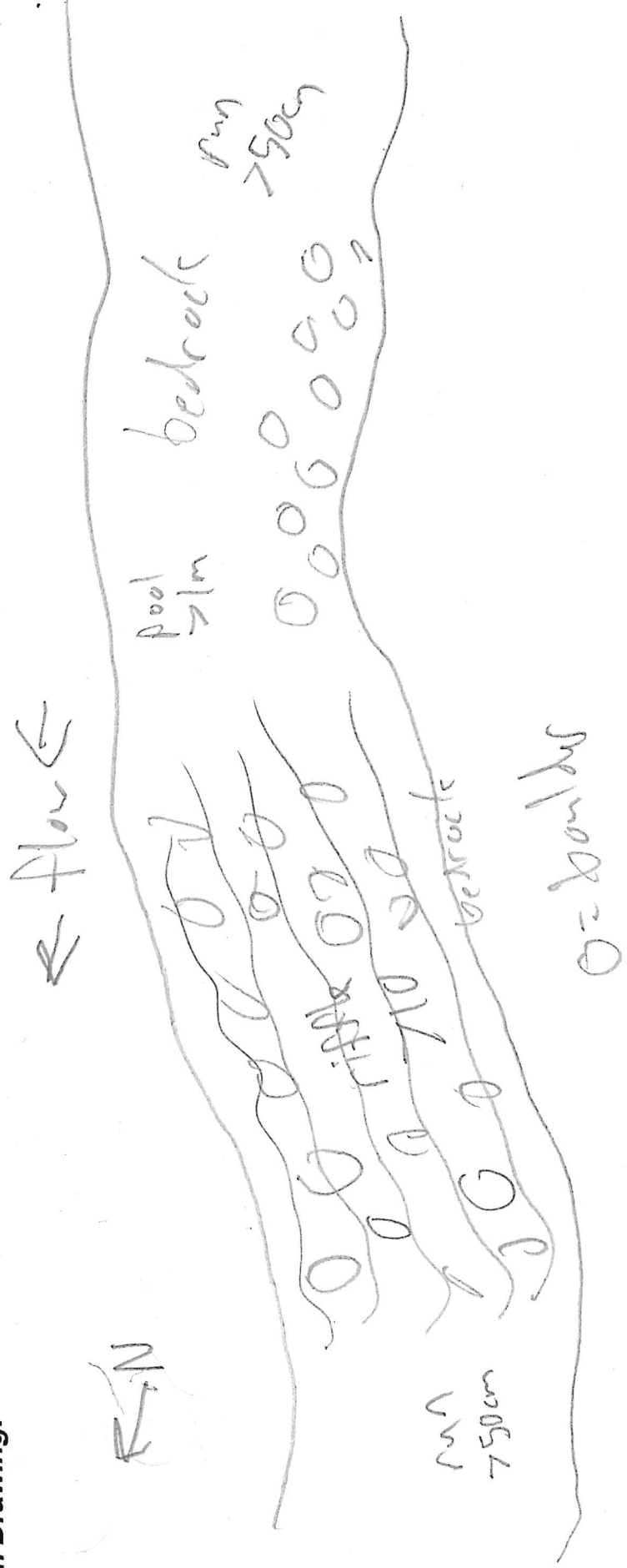
EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY ☐ HARDENED / URBAN / DIRT&GRIME ☐ CONTAMINATED / LANDFILL ☐ BMPs-CONSTRUCTION-SEDIMENT ☐ LOGGING / IRRIGATION / COOLING ☐ BANK / EROSION / SURFACE ☐ FALSE BANK / MANURE / LAGOON ☐ WASH H₂O / TILE / H₂O TABLE ☐ ACID / MINE / QUARRY / FLOW ☐ NATURAL / WETLAND / STAGNANT ☐ PARK / GOLF / LAWN / HOME ☐ ATMOSPHERE / DATA PAUCITY ☐

FJ MEASUREMENTS

- $\bar{x}$ width ☐ $\bar{x}$ depth ☐ max. depth ☐ $\bar{x}$ bankfull width ☐ bankfull $\bar{x}$ depth ☐ W/D ratio ☐ bankfull max. depth ☐ floodprone $\bar{x}^2$ width ☐ entrench. ratio ☐ Legacy Tree: ☐

Stream Drawing:



Stream & Location: Chagrin River, DS Pepper-Luce CreekRM: 22.6 Date: 8/19/22

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 15-001-000 STORET #: 301454 Lat./Long.: 41.4713 181.4944Office verified location ☐

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

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY		Substrate 17 Maximum 20
☐	BLDR/SLABS [10]	☒	☒	☐	HARDPAN [4]	☐	☐	☐	LIMESTONE [1]	☐	HEAVY [-2]	
☐	BOULDER [9]	☒	☒	☐	DETRITUS [3]	☐	☐	☒	TILLS [1]	☐	MODERATE [-1]	
☒	COBBLE [8]	☒	☒	☐	MUCK [2]	☐	☐	☐	WETLANDS [0]	☒	NORMAL [0]	
☐	GRAVEL [7]	☒	☒	☐	SILT [2]	☐	☒	☐	HARDPAN [0]	☐	FREE [1]	
☒	SAND [6]	☒	☒	☐	ARTIFICIAL [0]	☐	☐	☐	SANDSTONE [0]	☐	EXTENSIVE [-2]	
☐	BEDROCK [5]	☐	☐	☐		☐	☐	☐	RIP/RAP [0]	☐	MODERATE [-1]	
				(Score natural substrates; ignore sludge from point-sources)				☐	LACUSTURINE [0]	☒	NORMAL [0]	
								☐	SHALE [-1]	☐	NONE [1]	
								☐	COAL FINES [-2]			

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

Comments

8+6+2+1

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.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☒ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☐ MODERATE 25-75% [7]
☒ SHALLOWS (IN SLOW WATER) [1]	☒ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☒ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments

1+2+1+1+3

Cover
Maximum
20
8

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

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

Comments

Course substrates that seem to shift riffle/run position.

3+6+6+2

Channel
Maximum
20
17

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

River right looking downstream

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

Comments

2.5+4+2.5

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum
10
9

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☒ > 1m [6]	☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ 0.7-<1m [4]	☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ 0.4-<0.7m [2]	☐ POOL WIDTH < RIFFLE WIDTH [0]
☐ 0.2-<0.4m [1]	
☐ < 0.2m [0]	

☐ TORRENTIAL [-1]	☒ SLOW [1]
☒ VERY FAST [1]	☐ INTERSTITIAL [-1]
☒ FAST [1]	☐ INTERMITTENT [-2]
☒ MODERATE [1]	☒ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
 (circle one and comment on back)

Comments

6+2+5

Pool /
Current
Maximum
12
12

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

Comments

2+2+2+1

Riffle /
Run
Maximum
8
76] GRADIENT (12.66 ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA ☐ MODERATE [6-10]
(153 mi²) ☐ HIGH - VERY HIGH [10-6]%POOL: **30** %GLIDE: **10**
%RUN: **20** %RIFFLE: **40**Gradient
Maximum
10
8

A) SAMPLED REACH

Check ALL that apply

METHOD

☐ BOAT
☒ WADE
☐ L. LINE
☐ OTHER

STAGE
 1st - sample pass-- 2nd
☐ 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/CTB
☐ SECCHI DEPTH

meters

CANOPY

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

CJ RECREATION

POOL: ☒ >100ft² ☐ >3ft

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

Pools of sand mostly and silty along edges of river. Either artificial boulder or natural boulder lining river left pool along a slumping bank. A few pieces of woody debris, but most is likely washed out with winter ice jams. Riffle current velocity was impressive, as gravel bars restrict flows through a narrow channel.

BJ AESTHETICS

☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/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
☐ ARMORED / SLUMPS
☐ ISLANDS / SCOURED
☐ IMPOUNDED / DESICCATED
☐ FLOOD CONTROL / DRAINAGE

EJ ISSUES

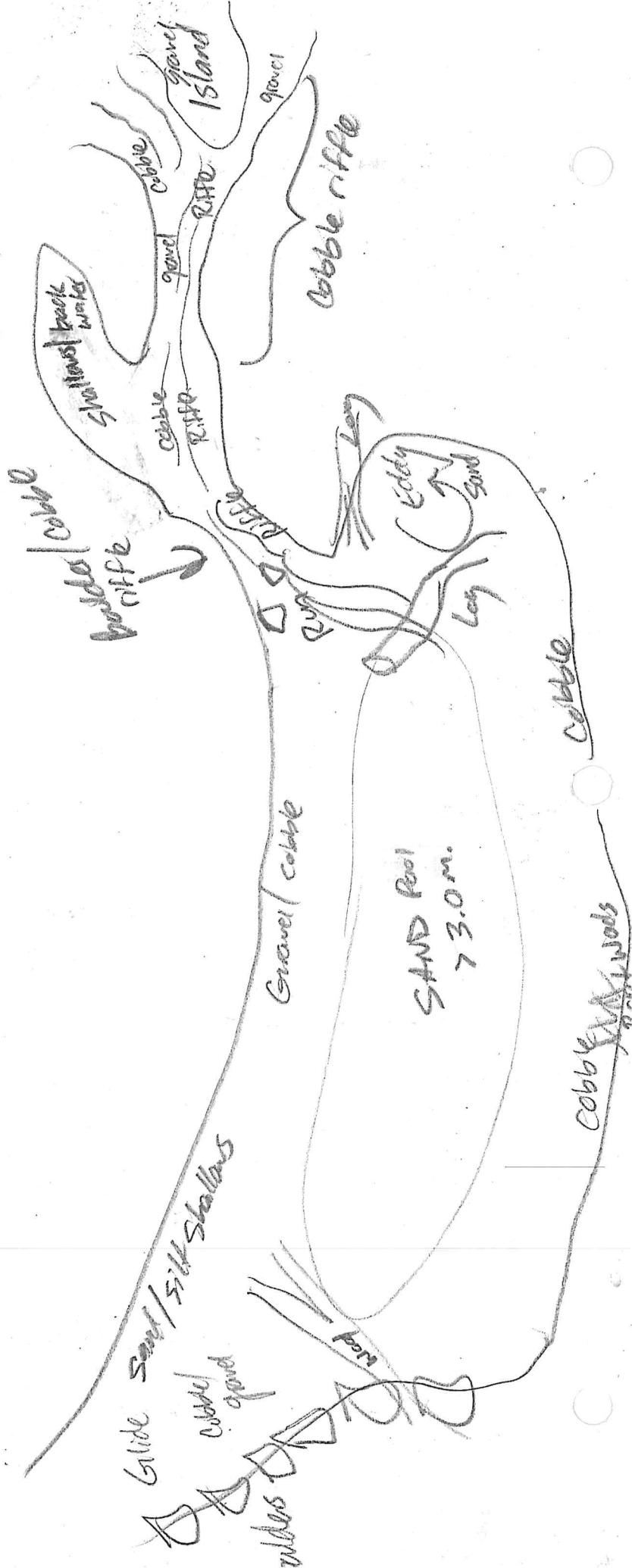
WWTP / CSO / NPDES / INDUSTRY
 HARDENED / URBAN / DIRT&GRIME
 CONTAMINATED / LANDFILL
 BMPs-CONSTRUCTION-SEDIMENT
 LOGGING / IRRIGATION / COOLING
 BANK / EROSION / SURFACE
 FALSE BANK / MANURE / LAGOON
 WASH H₂O / TILE / H₂O TABLE
 ACID / MINE / QUARRY / FLOW
 NATURAL / WETLAND / STAGNANT
 PARK / GOLF / LAWN / HOME
 ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENTS

☐ width
☐ depth
☐ max. depth
☐ bankfull width
☐ bankfull x depth
☐ W/D ratio
☐ bankfull max. depth
☐ floodprone x² width
☐ entrench. ratio

Legacy Tree:

Stream Drawing: Flow ←



Stream & Location: Pepper - Live Creek, DS creekside WWTP RM: 3.2 Date: 6/30/22

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer District

River Code: 15-001-008 STORET #: 301455 Lat./ Long.: 41.4703-81.4396 (NAD 83 - decimal °) Office verified location ☐

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

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY		Substrate 15.5
☐	BLDR /SLABS [10]	☒	☒	☐	HARDPAN [4]	☐	☐	☐	LIMESTONE [1]	☐	HEAVY [-2]	
☐	BOULDER [9]	☒	☒	☐	DETRITUS [3]	☐	☐	☒	TILLS [1]	☒	MODERATE [-1]	
☒	COBBLE [8]	☒	☒	☐	MUCK [2]	☐	☐	☐	WETLANDS [0]	☐	NORMAL [0]	
☐	GRAVEL [7]	☒	☒	☐	SILT [2]	☒	☐	☐	HARDPAN [0]	☐	FREE [1]	
☐	SAND [6]	☒	☐	☐	ARTIFICIAL [0]	☐	☐	☐	SANDSTONE [0]	☒	EXTENSIVE [-2]	
☐	BEDROCK [5]	☐	☐	(Score natural substrates; ignore sludge from point-sources)				☐	RIP/RAP [0]	☒	MODERATE [-1]	
NUMBER OF BEST TYPES: <u>8+7+2+1-1-1.5</u>		☐ 4 or more		☐ 3 or less				☐	LACUSTURINE [0]	☐	NORMAL [0]	
Comments								☐	SHALE [-1]	☐	NONE [1]	
								☐	COAL FINES [-2]			

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.

AMOUNT

Check ONE (Or 2 & average)

☐ UNDERCUT BANKS [1]	☐ POOLS > 70cm [2]	☐ OXBOWS, BACKWATERS [1]	☐ EXTENSIVE >75% [11]
☐ OVERHANGING VEGETATION [1]	☐ ROOTWADS [1]	☐ AQUATIC MACROPHYTES [1]	☒ MODERATE 25-75% [7]
☒ SHALLOWS (IN SLOW WATER) [1]	☐ BOULDERS [1]	☐ LOGS OR WOODY DEBRIS [1]	☐ SPARSE 5-<25% [3]
☐ ROOTMATS [1]			☐ NEARLY ABSENT <5% [1]

Comments

1+2+1+1+1+7

Cover
Maximum
20

13

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

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

Comments

3+3+6+2

Channel
Maximum
20

14

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

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

Comments

1.75+4+1

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

6.75

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☒ > 1m [6]	☐ POOL WIDTH > RIFFLE WIDTH [2]	☐ TORRENTIAL [-1]	☒ SLOW [1]
☐ 0.7-<1m [4]	☒ POOL WIDTH = RIFFLE WIDTH [1]	☐ VERY FAST [1]	☒ INTERSTITIAL [-1]
☐ 0.4-<0.7m [2]	☐ POOL WIDTH < RIFFLE WIDTH [0]	☐ FAST [1]	☐ INTERMITTENT [-2]
☐ 0.2-<0.4m [1]		☒ MODERATE [1]	☐ EDDIES [1]
☐ < 0.2m [0]		Indicate for reach - pools and riffles.	

Comments

No functional riffle
6+2+1Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)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	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☐ LOW [1]
☐ BEST AREAS < 5cm [metric=0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☒ EXTENSIVE [-1]

Comments

Riffles generally < 5cm & Interstitial

Riffle /
Run
Maximum
8
6] GRADIENT (ft/mi) 9.62
DRAINAGE AREA (mi²) 1.5
☐ VERY LOW - LOW [2-4]
☒ MODERATE [6-10]
☐ HIGH - VERY HIGH [10-6]%POOL: 60%GLIDE: 30%RUN: 10%RIFFLE: 10Gradient
Maximum
10

6

Stream & Location: Willey Creek, DS Jackson Valley WWTPRM: 1.0 Date: 7/7/22

JUSTIN TELEP

Scorers Full Name & Affiliation: Northeast Ohio Regional Sewer DistrictRiver Code: 15-004-000 STORET #DPOIP24 Lat./Long.: 41.436 -81.4242Office verified location ☐1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES	
POOL RIFFLE		POOL RIFFLE	
☐ BLDG / SLABS [10]	☐	☐ HARDPAN [4]	☒
☐ BOULDER [9]	☒	☐ DETRITUS [3]	☐
☒ COBBLE [8]	☒	☐ MUCK [2]	☐
☒ GRAVEL [7]	☒	☐ SILT [2]	☒
☐ SAND [6]	☒	☐ ARTIFICIAL [0]	☐
☐ BEDROCK [5]	☒		

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

Comments

8+7+2+1=1

ORIGIN

☐ LIMESTONE [1]
☒ TILLS [1]
☐ WETLANDS [0]
☐ HARDPAN [0]
☐ SANDSTONE [0]
☐ RIP/RAP [0]
☐ LACUSTURINE [0]
☐ SHALE [-1]
☐ COAL FINES [-2]

QUALITY

☐ HEAVY [-2]
☒ MODERATE [-1]
☐ NORMAL [0]
☐ FREE [1]
☐ EXTENSIVE [-2]
☒ MODERATE [-1]
☒ NORMAL [0]
☐ NONE [1]

SILT

EMBEDDEDNESS

Substrate

17
Maximum
202] **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.

AMOUNT

Check ONE (Or 2 & average)

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

☐ EXTENSIVE >75% [11]
☒ MODERATE 25-75% [7]
☐ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Comments

6+7

Cover
Maximum
20**13**3] **CHANNEL MORPHOLOGY** Check ONE in each category (Or 2 & average)

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

Comments

3+5+6+3

Heavy Rock armoring

Channel
Maximum
20**17**4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

RIPARIAN WIDTH

FLOOD PLAIN QUALITY

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

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

Comments

2.5+3.5+2

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

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

☐ > 1m [6]
☒ 0.7-<1m [4]
☐ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☒ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Comments

4+2+3

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)Pool /
Current
Maximum
12**9**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

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

☐ BEST AREAS > 10cm [2]
☒ BEST AREAS 5-10cm [1]
☐ BEST AREAS < 5cm
[metric=0]☐ MAXIMUM > 50cm [2]
☒ MAXIMUM < 50cm [1]☒ STABLE (e.g., Cobble, Boulder) [2]
☐ MOD. STABLE (e.g., Large Gravel) [1]
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]☐ NONE [2]
☒ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]Riffle /
Run
Maximum
8

Comments

1+1+2+1

56] **GRADIENT** (83.3 ft/mi)

DRAINAGE AREA

(3.7 mi²)☐ VERY LOW - LOW [2-4]
☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]

%POOL:

%GLIDE:

Gradient
Maximum
10

%RUN:

%RIFFLE:

4

