



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2020

Meter Passed End
of Day CCV
☒ Yes / ☐ No

WIN Station Name: Sand Creek @ 100m Us Of Cr 415 **Date:** 11/23/2020
WIN/Field ID: G5CE0094 **WBID:** 2675 **ENR:** **Latitude:** 29.0729
County: VOLUSIA **Org ID:** 21FLCEN **Longitude:** -81.0692
Receiving Body of Water: Upper East Coast **RQ:** 2020-11-30-12

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Natalie Ayala		x		x	x
☒	Elizabeth Bates	x		x		
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☐ Syringe	☐ Pole
Depth measured with: Secchi	
Secchi Equipment ID: Knothead	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other _____	☐ Gasoline Motor

Water Level: ☒ Normal ☐ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# CRAW DADDY			
Photos: YES		Flow: FLOW		Tide: TR		Tide Times: High: Low:			
Biological Samples Collected: ☐ None ☐ HA ☒ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:									
SBIO ID Numbers: SBIO 81798 RPS 9645				<2 SQ FT MACROPHYTES		LIMS 2209069			
Notes:									

Duplicate Sample

Time Zone: EST	Time: N/A	Field ID: N/A	(WIN ID_DUP)
WIN DMT Activity ID: _____			

Blank

Time Zone: _____	Time: N/A	Field ID: N/A	(Blank Type_DDMMYYYY)
DI Source: N/A		Location: N/A	
DI Type: N/A		Equipment ID: N/A	

LIMS EVENT ID: CEN-DIST-2020-11-24-03 WIN Import ID: 24022
Enter Field Parameters, Verify Station ID In LIMS DMT: KWM 12/4/20 QC Station ID, Field Parameters In LIMS DMT: TR 12/8/2020
(Initials/Date) (Initials/Date)
Scan/Save Field Sheets KWM 2/17/21 Migrate Data to WIN: KWM 2/17/21 Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)



RQ-2020-11-30-12

Customer: WQAP

Project ID: SMP

Collected By: Natalie Ayala, Elizabeth Bates

Field Report Prepared By: Natalie Ayala

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



G5CE0094

Location: Sand Creek @ 100m Us Of Cr 415

Comments: Bioassessments completed separately from water chemistry, will be sampled different dates. Please add macroinvertebrates (MI-FW-QLDC) to bottle group b

Matrix: Fresh

(Check one)

☒ GRAB☐ COMPOSITE

Date	Time	DO (mg/L)	DO (%SAT)	Temp. (C°)	pH	Sample Depth (m)	Secchi Disk (m)	Total Depth (m)	Sp COND (µmhos/cm)	Salinity (PPTH)
11/23/2020 11/21/2020 EB	14:23 13:23 EB EST	5.7	63.1	20.3	3.82	0.125	0.25 ☒ VOB (S)	0.25	108.2	0.05

Central Lab please use top row for login purposes

EST										
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Parameter Suite	Parameter Methods	Preservation	pH Check	# Bottles sent to Lab	Bottle Group
Preserved Nutrients (P-500ML)	☐ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP Lot # _____ Exp: _____	☐ Ice ☐ H2SO4*	☐ <2		
Metals (P-500ML)	☐ W-ICPMS ☐ W-ICP ☐ W-HARD Lot # _____ Exp: _____	☐ Ice ☐ HNO3*	☐ <2		
Filtered Nutrients (P125ML)	☐ W-PO4-F ☐ Field Filtered 0.45 µm Filter Filter Lot # _____ Syringe Lot # _____	☐ Ice			
Chlorophyll (BP-1L)	☐ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh) (P-1L)	☐ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W-TDS	☐ Ice			
Physical/Aggregate (Marine) (P-1L)	☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates (PJ-2L)	☒ MI-FW-QLDC	☒ Formalin		2	
Periphyton (PT-50ML)	☐ ALGAE-ID	☐ Ice			
Microbiology (Contract Lab Bottle)	☐ E Coli ☐ F Coli ☐ Enterococci ☐ Contract Lab	☐ Ice			
Molecular (QPCR-P-500ML)	☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GULL2 ☐ PCR-GFD	☐ Ice			
Tracers (BG-500ML)	☐ W-E8321-DI ☐ W-E8321-MS	☐ Ice			
Pesticides (BG-500ML) (BG-1L)	☐ W-E8321-DI ☐ WE8321-MS ☐ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☐ Ice			
		☐ Ice			

Name:
Natalie Ayala
Elizabeth Bates

Signature:

Date:

11/21/2020

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

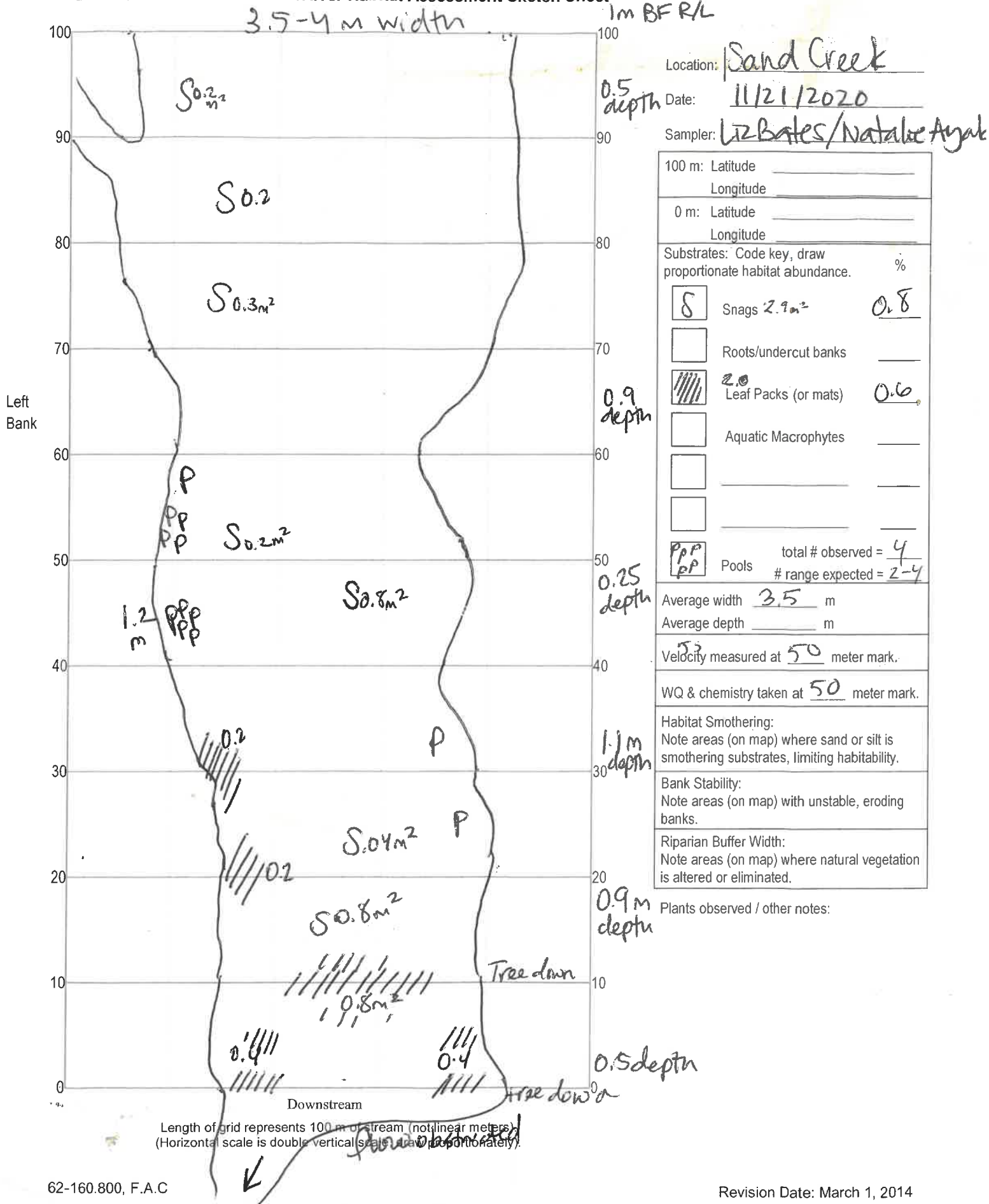
SAMPLING AGENCY: <u>21PLCEN</u>		STORET STATION NUMBER:	DATE (MM/DD/YYYY): <u>11/21/2020</u>	RECEIVING BODY OF WATER: <u>Upper East Coast</u>
REMARKS:	COUNTY: <u>Volusia</u>	LOCATION: <u>Sand Creek</u>		FIELD ID/NAME: <u>GSCE0094</u>

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>8</u>	20 19 18 17 16	15 14 13 12 11	10 9 <u>8</u> 7 6	5 4 3 2 1
Substrate Availability <u>1</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 <u>1</u>
Water Velocity <u>14</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 <u>14</u> 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>18</u> ----- Primary Score <u>41</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 <u>18</u> 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>18</u>	20 19 <u>18</u> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas.
Right Bank <u>8</u> Left Bank <u>8</u>	10 9	<u>8</u> 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>9</u> Left Bank <u>9</u> ----- Secondary Score <u>72</u>	10 9	8 7 6	5 4	3 2 1

113 **TOTAL SCORE**

Date: <u>11/21/2020</u>	Analyst: <u>Natalie Ayala / Elizabeth Bates</u>	Signature:
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Sand Creek</u>					County: <u>Volusia</u>		Date: <u>11/21/2020</u>		Investigators: <u>Elizabeth Bates/Natalie Ayala</u>	
Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	STORET Station Number: <u>65CE0094</u>
0	1	2		90	60	1	2		86	
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								
10	1	2		72	70	1	2		88	
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								
20	1	2		76	80	1	2		90	
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								
30	1	2		90	90	1	2		96	
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								
40	1	2		90	100	1	2		95	
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								
50	1	2		71		1	2			
	2	2								
	3	2								
	4	2								
	5	2								
	6	2								
	7	2								
	8	2								
	9	2								

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

Secchi depth 0.3
Estimated? N

points ranked 4-6 0
total points assessed 99
% points ranked 4-6 0

Check accompanying data collected at same site/date.

Algal mat sample	
Linear Veg Survey	☒
Habitat Assessment	☒
SCI/Biorecon	☒
Water sample	

RQ-

Algal Thickness Rank

N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Waterbody: Sand Creek	Date: 11/21/20	County: Volusia	Storet Number: GSC0094
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Store Number: **G5CE0094**

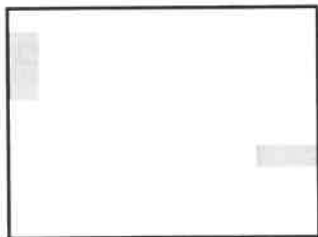
Signature: EB

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

> 50% Macrophyte Coverage

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

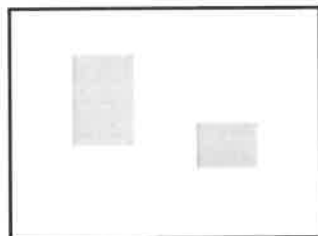
5% Macrophyte Coverage



5% Macrophyte Coverage



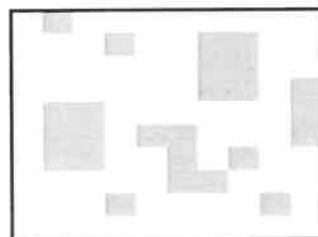
10% Macrophyte Coverage



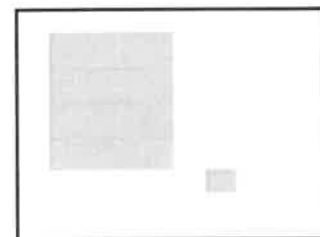
10% Macrophyte Coverage



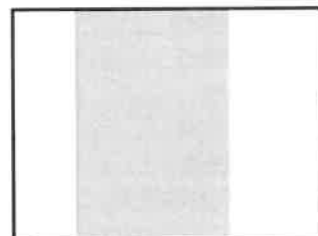
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage



DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID 95CE0094 ORG ID ZIFLLEN LATITUDE 29.0729
 COUNTY JOHNSIA STORET # _____ LONGITUDE -81.06923
 DATE 11/21/2020 TIME 13:23 SAMPLING AGENCY ZIFLLEN/DEP
 SITE NAME Sand Creek @ 100m US of CR 415
 FIELD ID/NAME 95CE0094 RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐							Landscape Development Intensity Index (LDI) ☐
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy							Typical Width (m) Depth (m)/Velocity (m/sec) Transect ☐ m wide
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) ☐		☒ m/s ☐ 0.2 m/s ☒ m/s	
High Water Mark: <u>0.5</u> + <u>0.5</u> = <u>1.0</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No		☐ m deep ☐ 0.25 m deep ☒ m deep	
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☒ Heavily Shaded ☐ Moderate Shaded (46-80%)			

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify): <u>ab</u>		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐																																																																									
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon <table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th>INVERT # Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr><td>Woody Debris (Snags)</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Undercut Banks / Roots</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Leaf Packs or Mat</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Aquatic Vegetation</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Rock or Shell Rubble..</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Sand.....</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Mud / Muck / Silt</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Other</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Other</td><td>☐</td><td>☐</td><td>☐</td></tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)	☐	☐	☐	Undercut Banks / Roots	☐	☐	☐	Leaf Packs or Mat	☐	☐	☐	Aquatic Vegetation	☐	☐	☐	Rock or Shell Rubble..	☐	☐	☐	Sand.....	☐	☐	☐	Mud / Muck / Silt	☐	☐	☐	Other	☐	☐	☐	Other	☐	☐	☐	WATER QUALITY <u>0.125</u> <table border="1"> <thead> <tr> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top: <u>0.25</u></td> <td><u>20.3</u></td> <td><u>3.82</u></td> <td><u>5.70</u></td> <td><u>63.1</u></td> <td><u>108.2</u></td> <td><u>0.05</u></td> <td><u>0.25</u></td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Meter ID: _____			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top: <u>0.25</u>	<u>20.3</u>	<u>3.82</u>	<u>5.70</u>	<u>63.1</u>	<u>108.2</u>	<u>0.05</u>	<u>0.25</u>	Mid:							☒ VOB	Bottom:							
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Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐																																																																										
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐																																																																										
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐																																																																										
ABUNDANCE <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr><td>Periphyton:</td><td>☐</td><td>☒</td><td>☐</td><td>☐</td></tr> <tr><td>Fish:</td><td>☒</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Aquatic Plants:</td><td>☐</td><td>☒</td><td>☐</td><td>☐</td></tr> <tr><td>Iron/Sulfur Bacteria:</td><td>☒</td><td>☐</td><td>☐</td><td>☐</td></tr> </tbody> </table>				Not Obs.	Rare	Common	Abundant	Periphyton:	☐	☒	☐	☐	Fish:	☒	☐	☐	☐	Aquatic Plants:	☐	☒	☐	☐	Iron/Sulfur Bacteria:	☒	☐	☐	☐	System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐																																																	
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Iron/Sulfur Bacteria:	☒	☐	☐	☐																																																																									
AMBIENT FIELD CONDITIONS / NOTES: Bioassessments completed separately from water chemistry (d.f. deutes). ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																																																													

SAMPLING TEAM

rahe Ayala / Elizabeth Bates

SIGNATURE :

Makay

DATE :

11/21/2020