CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: 155077 RQ- 2023-08-07-65 Project: REF STREAM

Notes: (1) Always wait for meter to stabilize before recording any readings.
(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 6/29/2023

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	F. Buten	8/23/23	7:30	23.0	760	8.6	8.60	100.1			P / F	L / F
ICV	F Buten	↓	7:36	22.9	760	8.6	8.63	100.3			P / F	L / F
CCV	NM	↓	1400	23.8	759	8.4	8.30	98.2			P / F	L / F
CCV											P / F	L / F

DO Acceptance criteria from Table ± 0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	F Buten	8/23	7:38	221213	09/24	1000	999	P / F	L / F
ICV	F. Buten	8/23	7:41	230627A	07/24	1000	995	P / F	L / F
CCV	NM	↓	1402	↓	↓	↓	104	P / F	L / F
CCV								P / F	L / F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	F. Buten	8/23	7:46	220690	8/31/24	7.0	23.2	7.01	-3.3	P / F	L / F
Calibr.	↓	↓	7:48	2504499	12/15/23	4.	23.5	4.00	174	P / F	L / F
Calibr.	F. Buten	↓	7:51	1250735	8/31/23	10.	23.4	9.99	-196.2	P / F	L / F
ICV	↓	↓	7:53	2504499	12/15/23	4.0	23.2	3.99	169.0	P / F	L / F
CCV	NM	↓	1405	220690	8/24	7.0	22.1	7.08	31.6	P / F	L / F
CCV										P / F	L / F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50; mV pH 4 Range +180 ± 50; mV pH 10 Range -180 ± 50;
If mV are recorded: slope from 7 to 10 164.7, slope from 4 to 7 174.5 (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? (YES) / NO / NA (not surf. water project)
If **YES**, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 6/29/2023
If **NO**, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	F. Buten	8/23/23	7:55	0.00	0.00	P F ✓	L F ✓

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria ± 5 % or ± 0.05m, whichever is greater.

COMMENTS: ~~33 32 02 0147~~
McCostill Mill Creek SCI 330201 47

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CHAIN OF CUSTODY FORM

Date:	8/23/2023	**Collected By:**	Frank Butera, Nathan Mulkey
Customer:	NW-DIST	**Sampling Agency:**	FDEP
RQ:	RQ-2023-08-07-65	**Project ID**:	SCIREF

PLEASE RETURN THE ORIGINAL OF THIS FORM WITH SAMPLE SUBMITTAL FORMS AND THE COOLER PACKING WORKSHEET TO THE LAB

Number of Coolers Shipped: 2 **Delivery Method:** FedEx

FIELD ID (Labels) submitted under this RQ for this collection date.

Site Location	Field ID/WIN ID
McCostill Mill Creek Below Ebeneezer Church Road	33020147
FB	FB_08232023

RELINQUISHED BY(SIGNATURE):

DATE/TIME: 8/23/2023 1600CEN

THIS SECTION TO BE COMPLETED BY LABORATORY

Rec'd/Inspected By: **Rec'd/Inspected Date**:

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

REFERENCE STREAMS FIELD SHEET

January 2022

Meter Passed End of Day CCV
Yes / No

WIN Station Name: McCostill Mill Creek Below Ebeneezer Church Date: 8/23/2023

Road WIN/Field ID: 33020147 WBID: 118 ENR: Latitude: 30.9185

County: Santa Rosa Org ID: 21FLPNS Longitude: -87.24782

Receiving Body of Water: Escambia River RQ- 2023-08-07-65

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
[x] Frank Butera	x		x		
[x] Nathan Mulkey		x		x	x
[ ]					
[ ]					

Sampling Equipment

- [x] Sample Container
- [ ] Dipper
- [x] Syringe
- [ ] Carboy
- [ ] Van Dorn
- [ ] Pole

Depth measured with: Meter
Secchi Equipment ID: 155077

Collection Method

- [x] Wading
- [ ] From Shore
- [ ] Other
- [ ] Canoe/Kayak
- [ ] Electric Motor
- [ ] Gasoline Motor

Water Level: [ ] Normal [X] Low [ ] High [ ] Dry [ ] Pooled [ ] Flooded

Meter ID# 155077 (PRODSS)

Photos: YES Flow: FLOW Tide:

Tide Times: High: Low:

Biological Samples Collected: [ ] None [X] HA [X] SCI [X] RPS [ ] Algae ID [X] LVS [ ] LVI Other:

SBIO ID Numbers: SBIO ID 87704. HA ID 18606, RPS ID 10140. Macro ID N/A, Benth ID. 45641 LIMS ID 2433420

Notes:

/ SCI COLLECTION TIME: 1030

Duplicate Sample

Time Zone: CEN Time: Field ID: N/A (WIN ID_DUP)

WIN DMT Activity ID:

Blank

Time Zone: CEN Time: 1010 Field ID: FB_08232023 (Blank Type_DDMMYYYY)

DI Source: NWROC Location: Pensacola Ice Room

DI Type: Field Blank Equipment ID:

DI Container (Name/ID): DI Container Type: Chum_Bucket

LIMS EVENT ID: **WIN Import ID:**

Enter Field Parameters, Verify Station ID In LIMS DMT: (Initials/Date) **QC Station ID, Field Parameters In LIMS DMT:** (Initials/Date)

Scan/Save Field Sheets (Initials/Date) **Migrate Data to WIN:** (Initials/Date) **Verify Data In WIN:** (Initials/Date)

RQ-2023-08-07-65
Customer: NW-DIST
Project ID: REFERENCE STREAMS

Collected By: Frank Butera, Nathan Mulkey
Field Report Prepared By: Frank Butera
Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID: 33020147

Location: McCostill Mill Creek Below Ebeneezer Church Road

Comments: Microbiology sample(s) submitted to contract laboratory.

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)
	1000 CEN	8.27	93.7	21.5	4.39	0.03	0.06 ☒ VOB (S)	0.06	46.5	0.02
8/23/2023							Central Lab please use top row for login purposes			
	CEN									

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	☒ Ice ☒ H_2SO_4*	☑ <2	1	A
	Lot # SA3013020 Exp:	01/13/2024			
Metals (P-500ML)	☒ W-ICPMS ☒ W-ICP ☒ W-HARD	☒ Ice ☒ HNO_3*	☐ <2	1	A
	Lot # NA2230040 Exp:	09/01/2023			
Filtered Nutrients (P125ML)	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice		1	A
	Filter Lot # 17460495	Syringe Lot#	136514		
Biochemical Oxygen Demand (BP-1L)	BODTEST OV-BODUNIN	ICE			
Chlorophyll (BP-1L)	☒ CHLSUITE-W	☒ Ice		1	A
Physical/Aggregate (Fresh) (P-1L)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice		1	A
Physical/Aggregate (Marine) (P-1L)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates (PJ-2L)	☐ MI-FW-QLDC Formalin Lot # -	☒ Formalin		2	B
Periphyton (PT-50ML)	☐ ALGAE-ID	☐ Ice			
Microbiology (Contract Lab Bottle)	☒ E Coli ☐ F Coli ☐ Enterococci ☒ Contract Lab	☒ Ice		1	A
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	MCAA Exp. Date		
Pesticides (BG-500ML) (BG-1L)	X W-E8321-DI X WE8321-MS X W-PSNP-TQ ☐ W-CT-CI-R ☐ W-PCL-TQ-R W-CARB-AA (5 ml of MCAA** Buffer Solution) ☐ W-TR-SQ-R ☐ W-PCB-TQ-R	☒ Ice	MCAA Lot#	5	A
Phytoplankton/Periphyton	☐ DTY-QN-C ☐ PKD-QN-BV	☐ Ice			

Name:
Frank Butera
Nathan Mulkey

Signature:

Date: **08/23/2023**

*2.0 ml of Preservative used unless noted otherwise.
**MCAA: Monochloroacetic acid buffer solution

RQ- 2023-08-07-65
Customer: WQAP
Project ID: SMP

Collected By: Frank Butera, Nathan Mulkey
Field Report Prepared By: Frank Butera, Nathan Mulkey
Sampling Agency: FDEP

BLANK

FieldID: FB_08232023

Comments:

Matrix: Field Blank

(Check one) ☐ COMPOSITE ☒ GRAB

Date	Time
8/23/2023	1010 CEN

DI Source: NWROC

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	☒ Ice ☒ H2SO4	☒ <2		
	Lot # 3013020 Exp:	01/25/2024			
Metals (P-500ML)	☒ W-ICPMS ☒ W-ICP	☒ Ice ☐ HNO3	☐ <2	1	C
	Lot # NA2230040 Exp:	09/01/2023			
Filtered Nutrients (P125ML)	☒ W-PO4-F Filter ☒ Field Filtered 0.45 µm	☒ Ice		1	C
	Filter Lot # 136514				
	Syringe Lot # 17460495				
Physical/Aggregate (Fresh) (P-1L)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-IC / TDS	☒ Ice		1	C
Physical/Aggregate (Marine) (P-1L)	☐ Alkalinity / W-BR-IC / W-F / W-TSS / TURBIDITY	☐ Ice			
Tracers (BG-500ML)	☐ W-E8321-DI ☐ W-E8321-MS	☐ Ice	MCAA Exp. Date		
Pesticides (BG-500ML) (BG-1L)	☐ W-E8321-DI ☐ WE8321-MS ☐ W-PSNP-TQ ☐ W-CT-Cl-R ☐ W-PCL-TQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution) ☐ W-TR-SQ-R ☐ W-PCB-TQ-R	☐ Ice	MCAA Lot#		

Name:
Frank Butera
Nathan Mulkey

Signature:

Date: **08/23/2023**

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

Site Name McCostill Mill Creek below Ebeneezer Church Rd

Date: 08/23/2023

WIN ID 33020147 Field ID MCSTLMLCR

Project: Eco Reg Ref Streams

Visit ID 87704

RQ: 2023-08-07-65

RPS ID 10140

LIMS ID: 2433420

Macro ID N/A

WBID: 118

HA ID 18606

Benth ID: 45641

☑ SCI

☐ RPS/LVS Only

☑ Sample Site Created in SBIO

☑ Phys/Chem in SBIO Initial FB ☑ Date and Initial QA: 8/30/23 NM

☑ HA entered in SBIO Initial FB ☑ Date and Initial QA: 8/30/23 NM

☑ RPS entered in SBIO Initial FB ☑ Date and Initial QA: 8/30/23 NM

☐ LVS entered in SBIO Initial _____ ☐ Date and Initial QA: _____

☐ ≥ 2 m² vegetation

☐ Plants getting verified Date submitted: _____

☐ Plants verified Date returned: _____

☑ RPS authorized in SBIO ☐ Date and Initial: 8/31/23 FB

☑ RPS score: 40

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ LVS Score: _____

☑ SCI complete: M. Heyn 11/15/23 SCI Score: 51

☑ Add SBIO-ID, HA-ID, RPS-ID, MACROPHYTE-ID and LIMS# to field sheet in database

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

SAMPLE ID 87704 ORG ID 21FLPNS LATITUDE 30.91825
COUNTY Santa Rosa WIN ID/STORET # 33020147 LONGITUDE 87.24782
DATE 8/23/2023 TIME 10:00 CTZ SAMPLING AGENCY FL DEP - NWROC
SITE NAME McCostill Mill Creek Below Ebeneezer Church RQ-2023-08-07-65
FIELD ID/NAME Rd. MCSTLMLCR RECEIVING BODY OF WATER. Escambia River WBID 118 Project: ECO REG REF STREAMS

RIPARIAN ZONE / STREAM FEATURES

LIMS ID: 243420

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): 1.7

Local Watershed Erosion (select one) : ☐ None ☐ Slight ☒ Moderate ☐ Heavy

Local Watershed NPS Pollution : ☐ No evidence ☒ Slight ☐ Moderate ☐ Heavy

Width of Riparian Vegetation (m) on Each Buffer Side: Left Bank : 7+ Right Bank : 7+

Hydrologic Modification Score (per FT 3101): 1-2

High Water Mark: 2.3 (m) + 0.3 (above present water level) = 2.6 (present depth) (above bed)

Artificially Impounded: ☐ Yes ☒ No

Typical Width (m) Depth (m)/Velocity (m/sec) Transect

9+ m — 3 m wide

0.2 m/s	0.4 m/s	.25 m/s
5 sec	2.5 sec	4 sec
0.2 m deep	0.2 m deep	0.1 m deep

Artificially Channelized : ☐ No ☒ Mostly recovered, more sinuous ☐ 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) :

Smothering of Substrates

	None	Slight	Moderate	Severe
Sand Smothering:	☐	☐	☐	☒
Silt Smothering:	☐	☐	☒	☐
Algae Smothering:	☒	☐	☐	☐

SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon

	% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	2.1	5	
Undercut Banks / Roots	6.8	5	
Leaf Packs or Mat	2.2	5	
Aquatic Vegetation	0.1	—	
Rock or Shell Rubble..			
Sand.....	79.1	3	88.8
Mud / Muck / Silt ..... GRAVEL	9.7	2	
Other ..... Gravel			
Other			

WATER QUALITY

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top :	0.03	26.5	4.39	8.27	93.7	46.5	0.02	0.06
Mid:								☒ VOB
Bottom								0.06 TOTAL DEPTH

Meter ID: 155077

Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐

Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ 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

	Not Obs.	Rare	Common	Abundant
Periphyton:	☐	☒	☐	☐
Fish:	☐	☒	☐	☐
Aquatic Plants:	☐	☒	☐	☐
Iron/Sulfur Bacteria:	☐	☒	☒	☐

System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐

AMBIENT FIELD CONDITIONS / NOTES:

☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM: Frank Butera, Nathan Meeks SIGNATURE : DATE : 8/23/2023

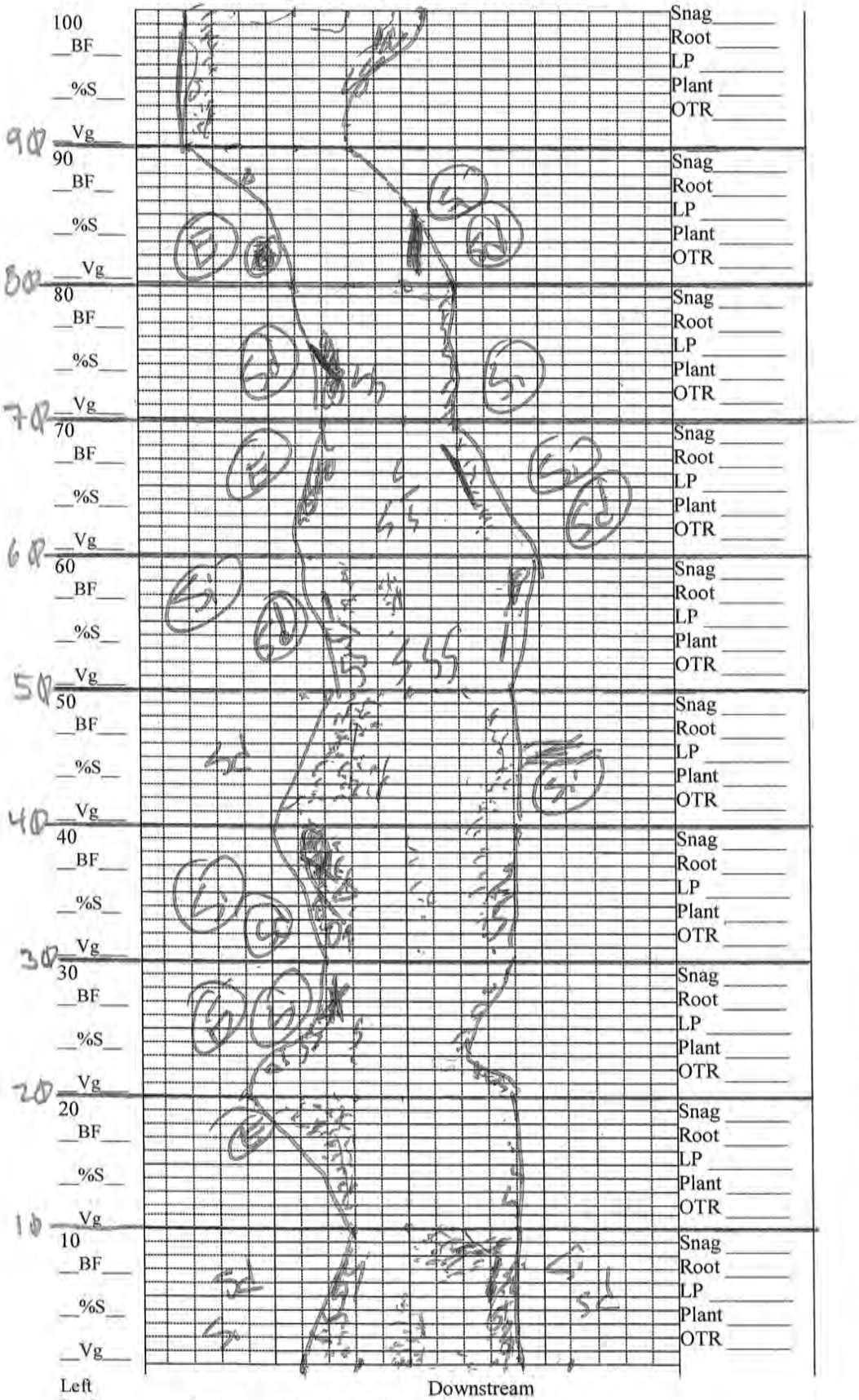
62-160.800, F.A.C.

Revision Date: March 1, 2014

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (June 1, 2001)

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

McCostill Mill Creek Below Ebeneezer Church Rd.



SBIO ID877704

WIN ID 33020147

Substrates: Code key, draw proportionate habitat abundance.

- S — Snags 4/380 = 2.1%
- R — Roots/undercut banks 25.9/380 = 6.8%
- D — Leaf Packs (or mats) 8.4/380 = 2.2%
- M — Macrophytes
- G — Gravel 37/380 = 9.7%
- BM — BM
- Sand 300/380 = 79.1%

Velocity: Note where velocity measures were taken. m

Habitat Smothering: Note areas (on map) where sand or silt is something substrates, limiting habitability.

Bank Stability: Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width: Note areas (on map) where natural vegetation is altered or eliminated.

Average width 3.8 m

Average depth 0.2 m

WQ & chemistry taken @ 10 m

Station Name:

McCostill Mill Creek Below Ebeneezer Church Rd.

Project. Eco Reg Ref Streams

Sampled By/Date: 8/23/2023

0 m Latt. 38.91778

0 m Long. 87.24866

100 m Latt 38.91818

100 m Long 87.24778

McCostill Mill Creek blw Ebeneezer Rd

0-10 meter [A]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
0m width (m) 4.7	Root 4.6		
10m width 3.3	Leaf 0.3	Slope	Slope
Avg. Depth .2	Veg —		
Max Depth .3	Gravel 7.0	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd	Other	

10-20 meter [B]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.8	Bankfull	Bankfull
20m width 4.7	Root 2.0		
	Leaf 0.4	Slope	Slope
Avg. Depth .2	Veg —		
Max Depth .3	Gravel 1.0	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd, E	Other	

20-30 meter [C]	Habitat Area (M)	Left Bank	Right Bank
	Snag 5.0	Bankfull	Bankfull
30m width 3.7	Root 3.0		
	Leaf 1.0	Slope	Slope
Avg. Depth .25	Veg 0.1		
Max Depth .3	Gravel 10	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other E, S, Sd	Other	

30-40 meter [D]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.2	Bankfull	Bankfull
40m width 3.2	Root 2.0		
	Leaf 2.0	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.1	Gravel 1.5	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd	Other	

40 - 50 meter [E]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.3	Bankfull	Bankfull
50m width 3.0	Root 0.1		
	Leaf 0.1	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.2	Gravel	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd	Other FeSu	

50-60 meter [F]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.5	Bankfull	Bankfull
60m width 4.5	Root 0.5		
	Leaf 0.1	Slope	Slope
Avg. Depth 0.2	Veg		
Max Depth 0.2	Gravel	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other FeSul	Other Sd S	

60-70 meter [G]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.3	Bankfull	Bankfull
70m width 2.5	Root 0.5		
	Leaf 3.0	Slope	Slope
Avg. Depth .2	Veg —		
Max Depth .3	Gravel	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd	Other E	

70-80 meter [H]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.3	Bankfull	Bankfull
80m width 3.5	Root 5.0		
	Leaf 0.7	Slope	Slope
Avg. Depth 0.2	Veg		
Max Depth 0.2	Gravel	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other S, Sd, E, S	Other	

80-90 meter [I]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.4	Bankfull	Bankfull
90m width 3.4	Root 1.0		
	Leaf 0.3	Slope	Slope
Avg. Depth 0.2	Veg 0.1		
Max Depth 0.2	Gravel	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other E, S, Sd	Other	

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
100m width 4.5	Root .3		
	Leaf 0.5	Slope	Slope
Avg. Depth 0.2	Veg		
Max Depth 0.2	Gravel 5.0	Veg	Veg
Rip. Buff L 718	Rock		
Rip. Buff R 718	Other Fe Sul Sd HW23	Other	

Station Name

McCostill Mill Creek blw Ebeneezer Rd

Storet: 33020147

Date 8/25/2023

0 meter (Dec Deg)
39.91778
-87.25866

100 meter (Dec Deg)
39.91810
-87.24778

Water Quality Measured at
100m

Stream Velocity and location.
0.4 m/s 90 meter mark

Number of Pools & Location
0 pools

High Water: 2.3

Silt smothering @
A-J

Sand Smothering @
A-J

Algae Smothering @
—

Degraded Banks @
B, D, G, I

Fe/Sulfur Bact. @
F, J, D

Total Habitat	Sq. Meters	Percent
Snags	8.0	2.1
Roots	26.9	6.8
Leaf	8.4	2.2
Veg	0.2	0.1
Rock		
Gravel	37.0	9.7
Sand	300.5	79.1
Other		
Sum 1° Habitat		11.2

Avg. Depth	Max. Depth	Avg. Width
0.2	0.3	3.8

Bank Stability Score. Left Bank 1.8 Right Bank 2.4 Category Left Bk Marginal Right Bk Sub-Optimal

Add all plus signs (Max. 30 possible) and Divide by 10. Scoring. **Poor:** 0.0 - 0.9 pts. **Marginal:** 1.0-1.9 pts. **Suboptimal:** 2.0 - 2.9 **Optimal:** 2.1+ 2.5

Notes.

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

SAMPLING AGENCY:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
21FLPNS. DEAR NWROC	33020147	8/23/23	Escambia R.

REMARKS:	COUNTY:	LOCATION:	FIELD ID/NAME:
WBID 118	Santa Rosa	McCostill Mill Creek Below Ebeneezer Church Rd.	MCSTMLCR

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components **Substrate Diversity** 12	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 (12) 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered 5 4 3 2 1
Substrate Availability 8	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 1
Water Velocity 20	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 14 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 17 Primary Score 47	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 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 **Artificial Channelization** 15	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. (15) 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 8 Left Bank 5	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 10	Width of vegetation greater than 18 m (10) 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank 10 Left Bank 10 Secondary Score 68	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. (10) 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

115 **TOTAL SCORE** 115/160 = 71.9%

Date:	Analyst:	Signature:
8/23/2023	F. Butler	

SBIO ID: B7704 HA ID: 18606

62-160.800, F.A.C.

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:	County:	Date:	Investigators:
McCostill Mill Creek Below Ebeneezer Church Rd.	Santa Rosa	8/23/2023	F Burton

STORET Station Number: 33020147

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
10	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
20	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
30	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
40	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
50	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
70	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
80	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		
90	1	N	N	
	2			
	3			
	4			
	5			90
	6			
	7			
	8	N		
	9	N		
100	1	N	N	
	2			
	3			
	4			
	5			96
	6			
	7			
	8	N		
	9	N		

Secchi depth	
Estimated?	N
# points ranked 4-6	0
total points assessed	90
% 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-2023-08-07-65	

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

SBIO Visit ID. 87704

RPS ID. 10140

RPS Score 0

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%.

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: McCostill Mill Creek Below Ebeneezer Church Rd.	Date: 8/24/2023	County: Santa Rosa	Storet Number: 33020147
Analyst: F. Butera		Signature:	

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m^2 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.

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle											
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans		D							1		
If no Dominant or Co-Dominant were selected, indicate with "X"	X	X	X	X	X	X	X	X	X	X	
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
4-SQ								1			

Field ID: MCSTMLCR	RPS ID 10140	SBIO ID 87704	Vascular ID N/A
LIMS ID 243342		Eco Reg Ref Streams	

REF STREAM - McCostill Mill Creek below Ebeneezer Church Rd.	WBID	Kit	Qty	Bottle Group	Bottles
McCostill Mill Creek Below Ebeneezer Church Rd. ~~32020147~~ 33020147	118	SCI Kit	1	A	
		Nutrients			3
		Ortho-Phosphate			1
		Metals			1
		Tracers: E8321-MS/DI			1
		PNSP-TQ-R, TR-SQ-R			4
		Escherichia coli	1		1
		SCI	1	B	2
		Periphyton	1		1
		HA	1		-
		RPS	1		-
		LVS	1		-
Field Blank		Nutrients w/o Chlorophyll	1	C	2
		Ortho-Phosphate	1		1
		Metals	1		1
RQ-2023-08-07-65	NEED PICS				

Field ID	WBID	WIN Description	County	Lat Long
33020147	118	McCostill Mill Creek Below Ebeneezer Church Rd.	Santa Rosa	30.91825, -87.24782

Test	Lot #	Expiration date:
UWF Bottle	L21347#....350	1/13/2025
Sulfuric Acid	SA3013020	1/25/2024
Nitric Acid	NA2230040	9/1/2023
Syringe	136514	-
PO4 Filter	17460495	-

Notes (access, boat ramp, etc.)	
~~32020147~~ 33020147	Needs Pics

McCostill Mill Creek SCI

REF STREAM - ~~Boiling Creek at Boat Ramp SCI~~				
WIN ID / Field ID	**TIME**	**Conductivity**	**pH**	DO mg-L / Temp.
33020147 ~~32020147~~ / MCSTLMLCR				
RQ-2023-08-07-65				

Field/WIN ID

FB_08232023

Location:
McCostill Mill Creek

Field/WIN ID

33020147

Location:
McCostill Mill Creek Below Ebeneezer Church Rd.

Ref:
Dep:
Date: 25Jul23
Wgt: 22.00 LBS
DV: 0.00
SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00
- Hard quality

PRIORITY OVERNIGHT Master 6484 8456 9240
TRCK: 6484 8456 9240

Ref:
Dep:
Date: 25Jul23
Wgt: 22.00 LBS
DV: 0.00
SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00
- Blank - QLDC

PRIORITY OVERNIGHT Master 6484 8456 9240
TRCK: 6484 8456 9251

2023-08-07-65

Location:
REFERENCE STREAM SCI

SAMPLE TRANSMITTAL FORM
Document Reference # 05.1.0

Project: FDEP | Laboratory: Wetlands Research Laboratory | Sampler's intials: N Mulkey

Method of transport: on ice by hand | Page 1 of 1

Samples delivered by: FB of FDEP | Date/Time: 8/23/2023 1300

Sample received by: [signature] of WRL | Date/Time: 8/23/2023 1300

Instructions: Fill in all fields except "Lab ID" on sample transport form completely. Each sample container must use a separate line. Place this form in a waterproof bag and place it with the samples for transport. If a field log or other chain of custody is attached, that information may be referenced on this form and the log or COC attached.

Lab ID	Sample ID	Matrix[1]	Type[2]	Container Type	Analyses Requested	Preservative	Sample (°C)[3]	Sampling Date/Time
23-518161	~~32020147~~. McCostill Mill Creek Below Ebeneezer Church Rd. 33020147	FW	G	Sterile plastic	Escherichia coli 18-QT	ice/$Na_2S_2O_3$	5.8	8-23-23 / 10:10 CR

Field/WIN ID

33020147

Location:
McCostill Mill Creek Below Ebeneezer Church Rd.

Comments: **Sample Container lot# L21347#** PO # C1E884 Surface water, no chlorine expected

RQ -2023-08-07-65

Contact organization FDEP | Contact name: **Stopher Slade** | Phone: 850-595-8300

Address 160 Governmental Center, suite 308, Pensacola, FL 32502 | Sampler's name: FBuster, N. Mulkey

[1]Matrix examples: SW = surface water, PW = pore water, GW = ground water, FW = Freshwater, MW = Marine Water, BW = Brackish Water, S = soil/sediment, Other X =

[2]Type codes: G = grab, C = composite, X = [3] Recorded using IRT-2