

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. Butler	8/23/23	7:38	23.0	760	8.6	8.60	100.1			P/F	L/F
ICV	F. Butler		7:36	22.9	760	8.6	8.63	100.3			P/F	L/F
CCV	MM		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 μ hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	F. Butler	8/23	7:38	2212213	09/24	1000	999	P/F	L/F
ICV	F. Butler	8/23	7:41	230627A	07/24	100	995	P/F	L/F
CCV	MM		1402				104	P/F	L/F
CCV								P/F	L/F

Conductivity Acceptance criteria $\pm 5\%$

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. Butler	8/23	7:46	110690	8/31/24	7.0	23.2	7.01	-93	P/F	L/F
Calibr.			7:48	1150499	12/15/23	4.	23.5	4.00	144	P/F	L/F
Calibr.	F. Butler		7:51	1150735	8/31/23	10.	23.4	9.99	-146.2	P/F	L/F
ICV			7:53	1150499	12/15/23	4.0	23.2	3.99	143.0	P/F	L/F
CCV	MM		1405	1110490	8/24	7.0	22.1	7.08	81.5	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 $+180 \pm 50$; 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. Butler	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 $\pm 5\%$ or ± 0.05 m, whichever is greater.

COMMENTS:

33-32020147
McCoskill Mill Creek SCH 33020147

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CHAIN OF CUSTODY FORM

Date: 8/23/2023
Customer: NW-DIST
RQ: RQ-2023-08-07-65

Collected By: Frank Butera, Nathan Mulkey
Sampling Agency: FDEP
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 Ebenezer 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 Ebenezer 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
☒	Frank Butera	x		x		
☒	Nathan Mulkey		x		x	x
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Meter	
Secchi Equipment ID: 155077	
Collection Method	
☒ Wading	☐ Canoe/Kayak
☐ From Shore	☐ Electric Motor
☐ Other	☐ Gasoline Motor

Water Level: ☐ Normal ☒ Low ☐ High ☐ Dry ☐ Pooled ☐ Flooded						Meter ID# 155077 (ProDSS)					
Photos: YES		Flow: FLOW		Tide:		Tide Times: High: Low:					
Biological Samples Collected: ☐ None ☒ HA ☒ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:											
SBIO ID Numbers: SBIO ID 87704. HA ID 18606, RPS ID 10140. Macro ID N/A, Benth ID.						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:

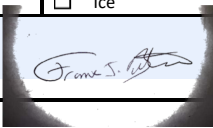
Enter Field Parameters, Verify Station ID In LIMS DMT: QC Station ID, Field Parameters In LIMS DMT:

Scan/Save Field Sheets Migrate Data to WIN: Verify Data In WIN:



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 Ebenezer 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 (PPT _h)
	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 ☒ H2SO4*		☒ <2	1	A
		Lot #	SA3013020		Exp:	01/13/2024				
Metals (P-500ML)		☒ W-ICPMS ☒ W-ICP ☒ W-HARD				☒ Ice ☒ HNO3*		☐ <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)		☒ W-E8321-DI ☒ WE8321-MS		☒ W-PSNP-TQ		W-CT-Cl-R		MCAA Lot#	5	A
		W-PCL-TQ-R		W-CARB-AA (5 ml of MCAA** Buffer Solution)		W-TR-SQ-R				
Phytoplankton/Periphyton		W-PCB-TQ-R		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

Collected By: Frank Butera, Nathan Mulkey

Customer: WQAP

Field Report Prepared By: Frank Butera, Nathan Mulkey

Project ID: SMP

Sampling Agency: FDEP

BLANK



Field ID: FB 08232023

Comments:

Matrix: Field Blank

(Check one) ☐ COMPOSITE ☒ GRAB

Date

Time

DI Source: NWROC

8/23/2023

1010

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 ☒ 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-CI-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-CI-R	☐ Ice	MCAA Lot#		
	☐ W-PCL-TQ-R ☐ W-CARB-AA ☐ W-TR-SQ-R				
	☐ W-PCB-TQ-R (5 ml of MCAA** Buffer Solution)				
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 Ebenezer 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

☒ 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: 10

☐ Macro authorized in SBIO

☐ Date and Initial: _____

☐ LVS Score: _____

☐ SCI complete: _____

SCI Score: _____

☒ 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 Ebenezer Church **RQ-2023-08-07-65**
 FIELD ID/NAME MCSTLMCLR RECEIVING BODY OF WATER Escambia River WBID 118 Project: ECO REG REF STREAMS

RIPARIAN ZONE / STREAM FEATURES

LIMS ID: 2433420

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) <u>1.7</u>
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 <u>90m</u> <u>3</u> m wide <u>0.2</u> m/s <u>0.4</u> m/s <u>0.25</u> m/s <u>5 sec</u> <u>2.5 sec</u> <u>4 sec</u> <u>0.2</u> m deep <u>0.2</u> m deep <u>0.1</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank : <u>718</u> Right Bank : <u>718</u>		Hydrologic Modification Score (per FT 3101) <u>1-2</u>				
High Water Mark: <u>2.3</u> + <u>0.3</u> = <u>2.6</u> (m) (above present water level) (present depth) (above bed)		Artificially Impounded ☐ Yes ☒ No				
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

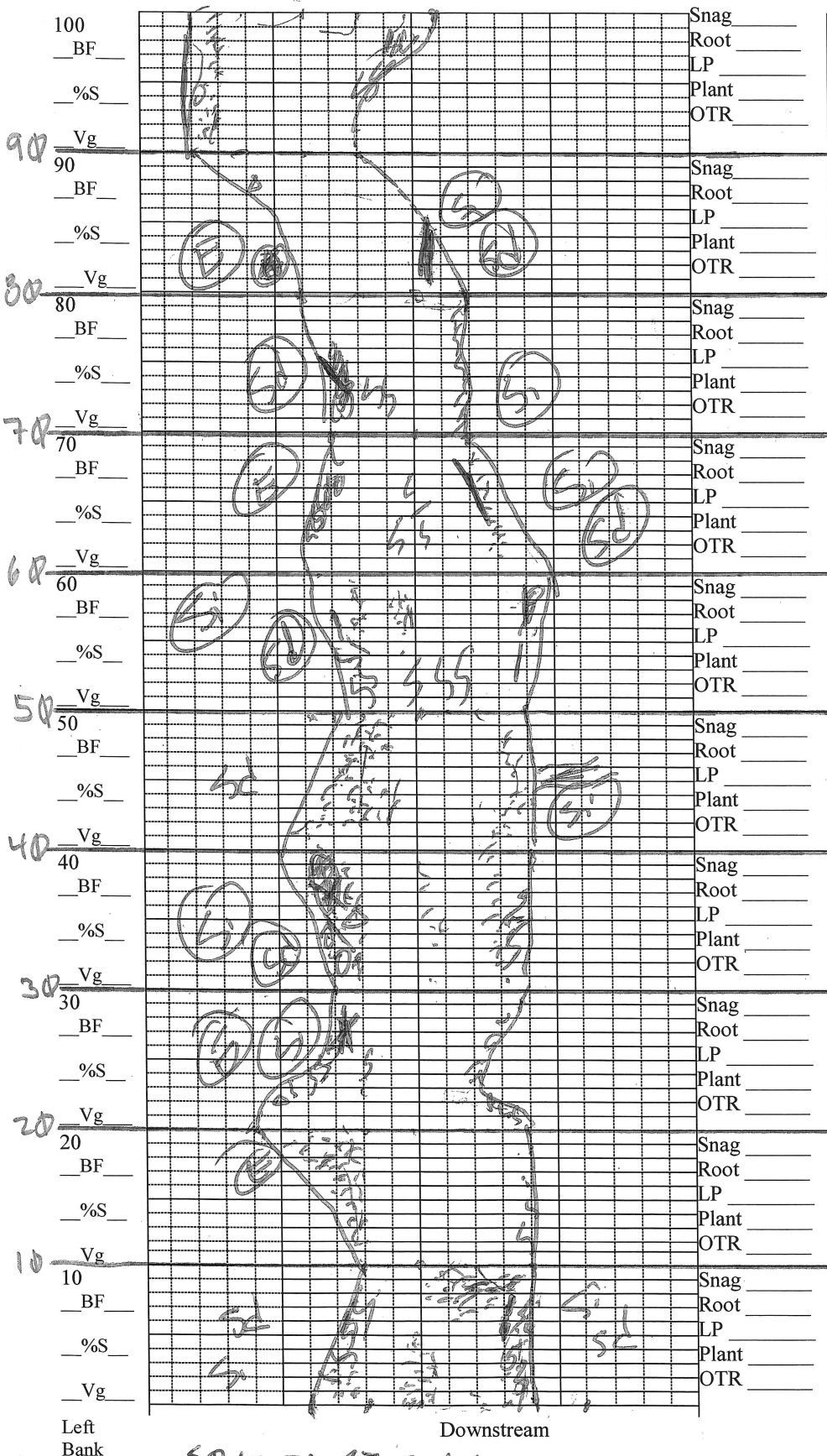
Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify) : _____		Smothering of Substrates Sand Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒ Silt Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Algae Smothering: None ☒ 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><u>2.1</u></td> <td><u>5</u></td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td><u>6.8</u></td> <td><u>5</u></td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td><u>2.2</u></td> <td><u>5</u></td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td><u>0.1</u></td> <td><u>—</u></td> <td></td> </tr> <tr> <td>Rock or Shell Rubble..</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Sand.....</td> <td><u>79.1</u></td> <td><u>3</u></td> <td><u>82.8%</u></td> </tr> <tr> <td>Mud / Muck / Silt.....</td> <td><u>9.7</u></td> <td><u>2</u></td> <td><u>1</u></td> </tr> <tr> <td>Other <u>Gravel</u></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)	<u>2.1</u>	<u>5</u>		Undercut Banks / Roots	<u>6.8</u>	<u>5</u>		Leaf Packs or Mat	<u>2.2</u>	<u>5</u>		Aquatic Vegetation	<u>0.1</u>	<u>—</u>		Rock or Shell Rubble..				Sand.....	<u>79.1</u>	<u>3</u>	<u>82.8%</u>	Mud / Muck / Silt.....	<u>9.7</u>	<u>2</u>	<u>1</u>	Other <u>Gravel</u>				Other				WATER QUALITY <table border="1"> <thead> <tr> <th></th> <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 :</td> <td><u>0.03</u></td> <td><u>26.5</u></td> <td><u>4.39</u></td> <td><u>8.27</u></td> <td><u>93.7</u></td> <td><u>46.5</u></td> <td><u>0.02</u></td> <td><u>0.06</u></td> </tr> <tr> <td>Mid:</td> <td></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> <td><u>0.06</u></td> </tr> </tbody> </table> Meter ID: <u>155077</u> Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____					Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top :	<u>0.03</u>	<u>26.5</u>	<u>4.39</u>	<u>8.27</u>	<u>93.7</u>	<u>46.5</u>	<u>0.02</u>	<u>0.06</u>	Mid:								☒ VOB	Bottom								<u>0.06</u>
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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, <u>Nathan Muller</u>		SIGNATURE: <u>[Signature]</u>		DATE: <u>8/23/2023</u>																																																																													

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 Ebenezer Church Rd.



WIN ID 33020147

Substrates: Code key,
draw proportionate habitat
abundance.

- ☒ Snags $\frac{75}{380} = 2.1\%$
- ☒ Roots/undercut banks $\frac{25.9}{380} = 6.8\%$
- ☒ Leaf Packs (or mats) $\frac{8.4}{380} = 2.2\%$
- ☒ Macrophytes
- ☒ Gravel $\frac{37}{380} = 9.7\%$
- ☒ BAR
- ☒ Sand $\frac{300}{380} = 79.1\%$

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 @ 100 m

Station Name:

McCostill Mill Creek Below

Ebenezer Church Rd.

Project. Eco Reg Ref Streams

Sampled By/Date: 8/23/2023

0 m Latt. 30.91778

0 m Long. 87.24866

100 m Latt 30.91818

100 m Long 87.24778

SBID 87704

McCostill Mill Creek blw Ebenezer Rd

0-10 meter [A]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.2	Bankfull	Bankfull
0m width (m) 4.7	Root 4.0	+	+
10m width 3.3	Leaf 0.3	Slope	Slope
Avg. Depth 1.2	Veg -	+	+
Max Depth 1.2	Gravel 7.0	Veg +	Veg +
Rip. Buff L 718	Rock -	+	+
Rip. Buff R 718	S. sd		

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 1.2	Veg -	+	+
Max Depth 1.3	Gravel 1.0	Veg +	Veg +
Rip. Buff L 718	Rock -	+	+
Rip. Buff R 718	S. sd		

20-30 meter [C]	Habitat Area (M)	Left Bank	Right Bank
	Snag 5.0	Bankfull	Bankfull
30m width 3.7	Root 2.3	-	-
	Leaf 1.0	Slope	Slope
Avg. Depth 1.25	Veg 0.1	+	+
Max Depth 1.3	Gravel 1.0	Veg +	Veg +
Rip. Buff L 718	Rock -	+	+
Rip. Buff R 718	(E) (G) (I) (K)		

30-40 meter [D]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.2	Bankfull	Bankfull
40m width 5.2	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	(S) (SL)		

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	(S) (SL) (FSu)		

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	FSu		

60-70 meter [G]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.3	Bankfull	Bankfull
70m width 2.5	Root 6.5	+	-
	Leaf 3.0	Slope	Slope
Avg. Depth 1.2	Veg -	+	+
Max Depth 1.2	Gravel -	Veg +	Veg +
Rip. Buff L 718	Rock -	+	+
Rip. Buff R 718	(S) (SL) (E)		

70-80 meter [H]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.5	Bankfull	Bankfull
80m width 3.0	Root 6.5	+	+
	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	(S) (SL) (E) (K)		

80-90 meter [I]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.4	Bankfull	Bankfull
90m width 3.0	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	(E) (S) (SL) (K)		

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
100m width 4.5	Root 1.3	-	-
	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	(FSu) (S) (SL) (K) HW23		

Station Name

McCostill Mill Creek blw Ebenezer Rd

Storet: 33020147

Date 8/23/2023

0 meter (Dec Deg)

30.91778

87.24866

100 meter (Dec Deg)

30.91818

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 @

A-J

Degraded Banks @

B, C, G, I, J

Fe/Sulfur Bact. @

F, J, E

Total Habitat	Sq. Meters	Percent
Snags	8.0	2.1
Roots	25.9	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 st Habitat		11.2

Avg. Depth	Max. Depth	Avg. Width
0.2	0.3	2.8

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+

Notes.

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

SAMPLING AGENCY: 21FLPNS. DEAR NWROC		STORET STATION NUMBER: 33020147	DATE (MM/DD/YY): 8/23/23	RECEIVING BODY OF WATER: Escambia R.
REMARKS: WBID 118	COUNTY: Santa Rosa	LOCATION: McCostill Mill Creek Below Ebenezer Church Rd.	FIELD ID/NAME: MCSTMLCR	

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>12</u>	20 19 18 17 16	15 14 13 <u>12</u> 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>8</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 <u>8</u> 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>2.4</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 <u>20</u> 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 <u>7</u> ----- Primary Score <u>47</u>	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 <u>7</u> 6	<u>Stable pools are absent.</u> Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components Artificial Channelization <u>15</u>	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. <u>15</u> 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 <u>8</u> Left Bank <u>5</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull 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 <u>14</u> Left Bank <u>14</u>	Width of vegetation greater than 18 m <u>10</u> 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 <u>14</u> Left Bank <u>14</u> ----- Secondary Score <u>68</u>	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. <u>10</u> 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 $\frac{115}{160} = 71.9\%$

Date: 8/23/2023	Analyst: F. Buter	Signature: 
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SBIO ID: 87704

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: McCostill Mill Creek Below Ebenezer Church Rd.					County: Santa Rosa		Date: 8/23/2013		Investigators: F. Butler	
					STORET Station Number: 33020147					
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	
0	1	N	N	96	60	1	N	N	96	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
10	1	N	N	96	70	1	N	N	96	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
20	1	N	N	96	80	1	N	N	96	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
30	1	N	N	96	90	1	N	N	96	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
40	1	N	N	96	100	1	N	N	96	
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									
50	1	N	N	96		1	N	N		
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									

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	
Estimated?	N

# points ranked 4-6	0
total points assessed	9
% 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
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RPS ID.	10140
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REF STREAM - McCostill Mill Creek below Ebenezer Church Rd.	WBID	Kit	Qty	Bottle Group	Bottles
McCostill Mill Creek Below Ebenezer 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
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 Ebenezer 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 33020147 / MCSTLMLCR				
RQ-2023-08-07-65				

Field/WIN ID



FB_08232023

Location:

McCostill Mill Creek

Field/WIN ID



33020147

Location:

McCostill Mill Creek Below Ebenezer Church Rd.

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

PRIORITY OVERNIGHT Master 6484 8456 9240
TRK: 6484 8456 9240

- H2O
Quality

Location:

REFERENCE STREAM SCI



2023-08-07-65

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

PRIORITY OVERNIGHT Master 6484 8456 9240
TRK: 6484 8456 9240

- Blank
- a/c

Document Reference # 05.1.0

Laboratory: Wetlands Research Laboratory

Sampler's initials :

Dr. Miller

Page 1 of 1

Date/Time: 8/23/2023 1300

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.

[illegible]

PO # C1E884

Surface water, no chlorine expected

RQ -2023-08-07-65

Contact name: **Stopher Slade**

Phone: 850-595-8300

Sampler's name: F. B. B. N. M. M. M.

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

²Type codes: G = grab, C = composite, X =

³ Recorded using IRT-2