

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

Only if this box is checked are qualified data on this log.

Meter ID: 1550 77

RQ- 2021-08-02-73

Project: REF SEC

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 06/1/2021

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.	MIKE KING	8/3/21	0730	26.1	759.3	8.1	8.12	100.4			P/F	L/F
ICV	M	8/3	0732	26.1	759.3	8.1	8.15	100.7			P/F	L/F
CCV	Frank Butler	8/3	16:48	23.5	758.2	8.5	9.31	109.8			P/F	L/F
CCV			23.6								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 mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	MK	8/3	0735	210525D	06/22	10000	10004	P/F	L/F
ICV	MK	8/3	0736	210525C	04/22	1000	1032	P/F	L/F
CCV	FB	8/3	16:54	201003A	10/21	100	97	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.	MK	8/3	0740	202114	5/22	7.00	26.3	7.0	-41.4	P/F	L/F
Calibr.			0741	205283	10/22	4.01	26.4	4.01	138.7	P/F	L/F
Calibr.			0742	204473	5/22	10.0	26.1	10.99	-220.8	P/F	L/F
ICV			0743	205283	10/22	4.0	26.3	4.02		P/F	L/F
CCV		8/3	17:00	202114	5/22	7.0	24.6	7.04	-44.9	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 10 179.4, slope from 4 to 7 180.1 (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: 06/1/21

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	M	8/3	0745	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:

McCostill Mill CK Below Ebenezer Rd
33020147, Bioassessment.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REFERENCE STREAMS FIELD SHEET

January 2020

Meter Passed End
of Day CCV
Yes / No **X**

WIN Station Name: 33020147

Date: 8/3/2021

WIN/Field ID: McCostill Mill Creek Below
Ebenezer Church Rd

WBID: 118

ENR:

Latitude: 30.91828

County: Santa Rosa

Org ID: 21FLPNS

Longitude: 87.247833

Receiving Body of Water: Escambia River

RQ- 2021-08-02-73

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
☒	Frank Butera	x	x	x	x	x
☒	Alicia Hogue					
☐						
☐						

Sampling Equipment	
☒ Sample Container	☐ Carboy
☐ Dipper	☐ Van Dorn
☒ Syringe	☐ Pole
Depth measured with: Meter	
Secchi Equipment ID:	
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: NA			Tide:		Tide Times: High: Low:						
Biological Samples Collected: ☐ None ☒ HA ☒ SCI ☒ RPS ☐ Algae ID ☒ LVS ☐ LVI Other:												
SBIO ID Numbers: Visit ID 82867. HA ID 16950. RPS ID 9755. Benth ID 45375.												
Notes: ALICIA HOGUE ON SAMPLING TEAM												

Duplicate Sample

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

Blank

Time Zone:	Time:	Field ID:	(Blank Type_DDMMYYYY)
DI Source:	Location:		
DI Type:	Equipment ID:		
DI Container (Name/ID):		DI Container Type:	

LIMS EVENT ID: 2267047 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 FB / 08-12-2021 Migrate Data to WIN: (Initials/Date) Verify Data In WIN: (Initials/Date)



RQ-2021-08-02-73

Customer: WQAP

Project ID: SMP

Collected By: Frank Butera,

Field Report Prepared By: Frank Butera

Sampling Agency: FDEP

Place Label Here

WIN ID/Field ID:



McCosh Mill Creek

Location: 33020147

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

Macroinvertebrates NOT preserved. On ice only

Dissolved Oxygen on YSI failed Post Verification check.

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)		
	1100 CEN	9.13	104.6	22	4.3	0.15	0.3 ☒ VOB (S)	0.3	40.2	0.02		
8/3/2021												
	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 #	SA0353110		Exp:	01/11/2022						
Metals (P-500ML)		☒ W-ICPMS ☒ W-ICP ☒ W-HARD				☒ Ice ☒ HNO3*		☐ <2	1	A		
		Lot #	NA0344060		Exp:	01/04/2022						
Filtered Nutrients (P125ML)		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter				☒ Ice			1	A		
		Filter Lot #	17236199									
		Syringe Lot #	1005533									
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-BR-IC / W-F / W-TSS / TURBIDITY				☒ Ice			1	A		
Macroinvertebrates (PJ-2L)		☒ MI-FW-QLDC	Formalin Lot #	N/A		☒ Ice			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						
Pesticides (BG-500ML) (BG-1L)		☒ W-E8321-DI	☒ WE8321-MS	☒ W-PSNP-TQ	☒ W-CT-CL-R	☒ Ice			9	A		
Phytoplankton/Periphyton		☐ W-PCL-TQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution) ☐ DTY-QN-C ☐ PKD-QN-BV				☐ Ice						
Name: Frank Butera, Alicia Hogue					Signature:				Date: 08/03/2021			

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

Site Name: McCostill Mill Cr Below Ebenezer Church Rd

Date: 08/03/2021

Storet 33020147 Field ID MCSTMLCR

Project: EcoReg Ref Streams

Visit ID 82867

RQ: 2021-08-02-73

RPS ID 9755

LIMS ID: 2267047

Macro ID _____

WBID: 118

HA ID 16950

☒ SCI

☐ RPS/LVS Only

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO Initial FB, 8/12/21 ☒ Date and Initial QA: 8/17/21, SS HA Score 115

☒ RPS entered in SBIO Initial FB, 8/12/21 ☒ Date and Initial QA: 8/17/21, SS

☐ 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: 8/17/21, FB

☒ RPS score: 1.01

☐ Macro authorized in SBIO ☐ Date and Initial: _____

☐ LVS Score: _____

☒ SCI complete: M. Heyn 8/20/2021 SCI Score: 47

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

☒ E. coli samples shipped to Tallahassee Lab for analysis.

Notes. Elmid search. Reference Stream.

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

SAMPLE ID 32867 ORG ID 21FLPNS LATITUDE 30.91828
 COUNTY Santa Rosa WIN ID/STORET # 33020147 LONGITUDE 87.247833
 DATE 8/03/2021 TIME 11:00 CTZ SAMPLING AGENCY FL DEP - NWROC
 SITE NAME McCostill Mill Cr Below Ebenezer Church Rd **RQ-2021-08-02-73**
 FIELD ID/NAME MCSTLMCLR RECEIVING BODY OF WATER: Escambia River WBID 118 Project: EcoReg Ref Streams

RIPARIAN ZONE / STREAM FEATURES

LIMS ID: 2267447

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 SBIO 2015
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>0</u> m <u>4</u> m wide <u>.33</u> m/s <u>.33</u> m/s <u>.25</u> m/s
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>710</u> Right Bank: <u>710</u>				Hydrologic Modification Score (per FT 3101) <u>4</u>			
High Water Mark: <u>2.2</u> + <u>0.4</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 Invert PERI % # Times # Times Coverage Sampled Sampled Woody Debris (Snags) <u>2.0</u> <u>5</u> Undercut Banks / Roots <u>5.1</u> <u>5</u> Leaf Packs or Mat <u>0.8</u> <u>5</u> Aquatic Vegetation <u>N/A</u> <u>1</u> Reek or Shell Rubble... <u>0.3</u> <u>1</u> Sand <u>0.3+9.8</u> <u>92.1</u> Mud / Muck / Silt Other <u>Gravel</u> <u>9.8</u> <u>3</u> Other			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.5</u> <u>22.4</u> <u>4.3</u> <u>9.13</u> <u>104.6</u> <u>40.2</u> <u>0.02</u> <u>0.3</u> Mid: <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> Bottom: <u>0.3</u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> <u></u> Meter ID: <u>155077</u> <u>0.3</u>		
Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐		Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐		Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐	
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____		Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____		Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐	
System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐					
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐					
AMBIENT FIELD CONDITIONS / NOTES: <u>Rain prev. week 0.5". Sand sedimentation prevalent throughout reach.</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.					

SAMPLING TEAM: Frank Butera, Mike King, Alicia Hogue

SIGNATURE: [Signature]

DATE: 08/03/2021

(Horizontal scale is double vertical scale, draw proportionately).

Substrates: Code key, draw
proportionate habitat abundance

	Snags $\frac{8.8}{430} = 2.4$
	Roots $\frac{2.1}{430} = 5.1$
	Leaf Packs $\frac{3.3}{430} = 0.8$
	Plants $\frac{0.1}{430} = 0.01$
	Gravel $\frac{42}{430} = 9.8$

total # observed	17
Pools. Total # expect	2

Note where velocity measures were taken. 0 m

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

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

Note areas (on map) where natural vegetation is altered or eliminated.

WQ & chemistry CD m

Station Name: McCostill
Mill Cr. Ebenezer Ch. Rd
Project. EcoReg Ref Streams
Sampled By/Date: FD/8-3/21

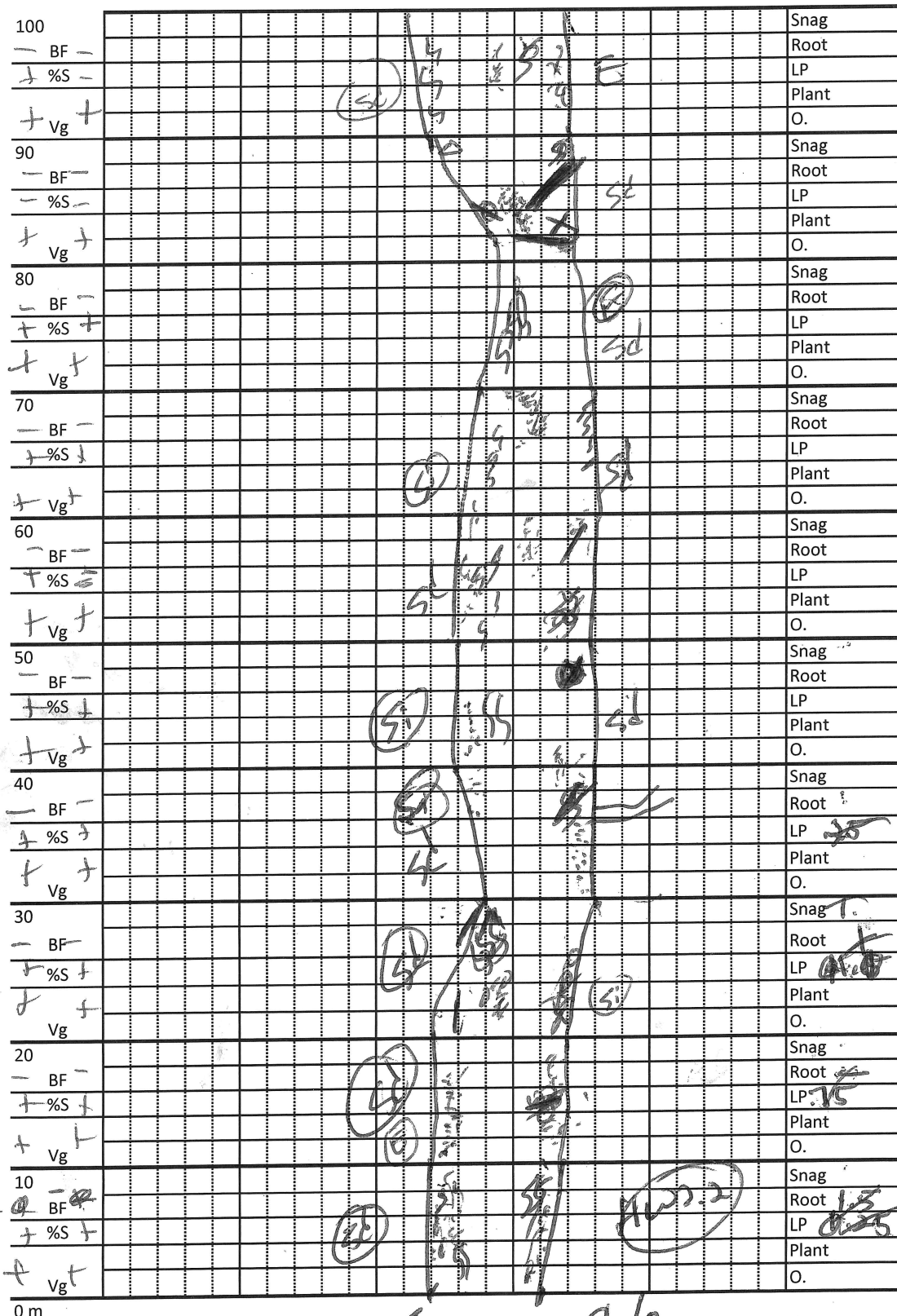
0 m Latt.
34.91822

0 m Long.
97.24703

100 m Latt
30. 21776

100 m Long

87.2423



L R S G/O
~~||||~~ |||| |||| ||||

0-10 meter [A]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
0m width (m) 4	Root 0.5		
10m width 4	Leaf 0.2	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.2	Gravel 0.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other SL		

10-20 meter [B]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
20m width 5	Root 1.0		
	Leaf 1.4	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.3	Gravel 0.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other SL		

20-30 meter [C]	Habitat Area (M)	Left Bank	Right Bank
	Snag 3.0	Bankfull	Bankfull
30m width 3.5	Root 1.0		
	Leaf 1.0	Slope	Slope
Avg. Depth 0.2	Veg		
Max Depth 0.3	Gravel 4.0	Veg	Veg
Rip. Buff L	Rock		
Rip. Buff R	Other foam		

30-40 meter [D]	Habitat Area (M)	Left Bank	Right Bank
	Snag -	Bankfull	Bankfull
40m width 5.0	Root -		
	Leaf -	Slope	Slope
Avg. Depth 0.2	Veg -		
Max Depth 0.3	Gravel 3.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other (SL) (S)		

40 - 50 meter [E]	Habitat Area (M)	Left Bank	Right Bank
	Snag -	Bankfull	Bankfull
50m width 5.0	Root 0.5		
	Leaf 0.3	Slope	Slope
Avg. Depth 0.3	Veg		
Max Depth 0.3	Gravel 0.3	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other (SL) (S)		

50-60 meter [F]	Habitat Area (M)	Left Bank	Right Bank
	Snag 1.5	Bankfull	Bankfull
60m width 5.0	Root 0.2		
	Leaf 0.3	Slope	Slope
Avg. Depth 0.2	Veg		
Max Depth 0.3	Gravel 0.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other SL		

60-70 meter [G]	Habitat Area (M)	Left Bank	Right Bank
	Snag 0.1	Bankfull	Bankfull
70m width 4.0	Root 0.5		
	Leaf 0.1	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.3	Gravel 3.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other (SL) (S)		

70-80 meter [H]	Habitat Area (M)	Left Bank	Right Bank
	Snag -	Bankfull	Bankfull
80m width 3.0	Root 3.5		
	Leaf 0.3	Slope	Slope
Avg. Depth 0.1	Veg		
Max Depth 0.3	Gravel 1.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other SL E		

80-90 meter [I]	Habitat Area (M)	Left Bank	Right Bank
	Snag 4.0	Bankfull	Bankfull
90m width 4.0	Root 1.0		
	Leaf 0.5	Slope	Slope
Avg. Depth 0.2	Veg 0.1		
Max Depth 0.3	Gravel 2.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other SL		

90 - 100 meter [J]	Habitat Area (M)	Left Bank	Right Bank
	Snag -	Bankfull	Bankfull
100m width 5.0	Root 0.5		
	Leaf 0.5	Slope	Slope
Avg. Depth 0.3	Veg		
Max Depth 0.3	Gravel 2.0	Veg	Veg
Rip. Buff L 713	Rock		
Rip. Buff R 713	Other E SL		

McCostill Mill Cr. Ebenezer Road

Storet: 33020147

Date 8/03/2021

0 meter (Dec Deg)

30.91776

87.24873

100 meter (Dec Deg)

30.91822

87.24783

Water Quality Measured at

Stream Velocity and location.

0.33 m/s 0 meter mark

Number of Pools & Location

High Water: 2.2

Silt smothering @

A, E, F, D, G

Sand Smothering @

A-J

Algae Smothering @

NONE

Degraded Banks @

B, H, J

Fe/Sulfur Bact. @

NONE

Total Habitat	Sq. Meters	Percent
Snags	8.8	20.0
Roots	22.0	50.1
Leaf	3.3	0.8
Veg	0.1	<0.1
Rock		
Gravel	42	9.8
Sand	353.8	82.3
Other		
Sum 1° Habitat		8.0

Avg. Depth	Max. Depth	Avg. Width
0.2	0.3	4.3

Bank Stability Score. Left Bank 5.6 Right Bank 0.63 Category Left Bk Marginal Right Bk Sub-Optimal
Add all plus signs (Max. 30 possible) and Divide by 3. Scoring. Poor: 0.0 - 3.7 pts. Marginal: 3.8-5.7 pts. Suboptimal: 5.8 - 8.6 Optimal: 8.7 +

Notes.

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

SAMPLING AGENCY: 21FLPNS		STORET STATION NUMBER: 33020147	DATE (MM/DD/YY): 8/3/21	RECEIVING BODY OF WATER: Escambia River
REMARKS: WBID 118	COUNTY: Santa Rosa	<i>McCoskill Mill Creek</i> <i>Below Ebenezer Church Rd</i>		FIELD ID/NAME: MCSTLMLLCR

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>11</u>	20 19 18 17 16	15 14 13 12 <u>11</u>	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>2.0</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>6</u> ----- Primary Score <u>45</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 7 <u>6</u>	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 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>19</u>	20 <u>19</u> 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>6</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 <u>6</u>	Only meets 1 of the 3 requirements for optimal bank stability. <u>5</u> 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>10</u> Left Bank <u>10</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>10</u> Left Bank <u>10</u> ----- Secondary Score <u>70</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

115/100 = 71.9%

Date: <u>8/3/2021</u>	Analyst: <u>F. Butera</u>	Signature: <u>[Signature]</u>
SBIO ID: <u>02867</u>	HA ID: <u>16954</u>	

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: McCostill Mill Creek below Ebenezer Church Road

County: Santa Rosa

Date: 8/3/2011

Investigators: F. B. W. A. Hogue

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	No		60	1	N	No		
	2					2				
	3					3				
	4					4				
	5			96		5			96	
	6					6				
	7					7				
	8					8				
	9					9				
10	1	N	No		70	1	N	No		
	2					2				
	3					3				
	4			96		4			94	
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N	No		80	1	N	No		
	2					2				
	3					3				
	4			96		4			96	
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N	No		90	1	N	No		
	2					2				
	3					3				
	4			96		4			96	
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N	No		100	1	N	No		
	2					2				
	3					3				
	4			96		4			94	
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N	No			1	N	No		
	2					2				
	3					3				
	4			96		4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					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 densitometer 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%.

STORET Station Number: 33020147

Secchi depth 1.05
Estimated?

points ranked 4-6 1
total points assessed 99
% points ranked 4-6 1

Check accompanying data collected at same site/date.
Algal mat sample
Linear Veg Survey
Habitat Assessment
SCI/Biorecon
Water sample
RQ-2021-08-02-73

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. 82867

RPS ID. 9755

RPS Score. 1.01

[illegible]

2/A

Revision Date: March 1, 2014

McCostill Mill Creek Below Ebenezer Church Rd.

Sample Date 08/03/2021

SBIO ID 82867

Project Eco Reg Ref Streams

Storet 33020147

Benthic ID 45375

LIMS ID 2267047

County: Santa Rosa

WBID 118

Lat/Long 30.91828 x 87.24783

RQ-2021-08-02-73

Phylum	Class	Order	Family	Taxon Name	Taxa	Rep 1	Rep 2
Arthropoda	Insecta	Ephemeroptera	Baetidae	Baetidae	0	1	1
				Labiobaetis propinquus	1	2	1
			Heptageniidae	Heptageniidae	1	0	2
			Leptophlebiidae	Leptophlebiidae	1	1	0
		Plecoptera	Leuctridae	Leuctra	1	46	52
			Perlidae	Acroneuria arenosa/evoluta	1	0	1
				Acroneuria lycorias	1	2	0
				Acroneuria	0	1	2
				Perlidae	0	0	1
		Trichoptera	Calamoceratidae	Anisocentropus pyraloides	1	1	1
			Hydropsychidae	Cheumatopsyche	1	1	0
				Diplectrona	1	17	16
				Hydropsyche	1	2	3
				Hydropsychidae	0	0	1
			Hydroptilidae	Hydroptila	1	3	2
			Leptoceridae	Triaenodes	1	2	0
		Coleoptera	Elmidae	Ancyronyx variegatus	1	0	1
				Gonielmis dietrichi	1	8	6
				Microcylloepus pusillus	1	0	3
				Oulimnius nitidulus	1	2	2
				Oulimnius	0	0	1
				Stenelmis	1	17	21
				Elmidae	0	2	1
			Psephenidae	Ectopria thoracica	1	3	2
		Heteroptera	Veliidae	Rhagovelia	1	1	0
		Megaloptera	Corydalidae	Nigronia serricornis	1	1	0
		Odonata	Calopterygidae	Calopteryx	1	0	1
			Aeshnidae	Aeshnidae	1	1	0
			Cordulegastridae	Cordulegaster	1	0	1
			Corduliidae	Neurocordulia alabamensis	1	1	0
		Diptera	Ceratopogonidae	Atrichopogon	1	1	0
			Empididae	Hemerodromia	1	11	8
				Neoplasta	1	1	2
			Simuliidae	Simulium	1	2	0
			Tabanidae	Tabanidae	1	0	1
			Chironomidae	Orthocladius lignicola	1	1	1
				Parachaetocladius abnobaesus	1	0	2
				Parametriocnemus	1	3	0
				Polypedilum fallax	1	0	2
				Polypedilum flavum	1	1	0
				Polypedilum illinoense grp.	1	4	1
				Polypedilum scalaenum grp.	1	0	1
				Rheotanytarsus pellucidus	1	0	1
				Stenochironomus	1	2	2
				Thienemannimyia grp.	1	0	1
				Tvetenia tshernovskii	1	1	0
				Xylotopus par	1	0	1
				Chironomidae	0	1	1
	Crustacea	Decapoda	Cambaridae	Cambaridae	1	2	0
Total					42	145	146

McCostill Mill Cr Below Ebenezer Church Rd.

Sample Date 08/03/2021

SBIO ID 82867

Project: EcoReg Ref Streams

Storet 33020147

Benth ID 45375

WBID 118

County: Santa Rosa

LIMS ID 2267047

Latt/Long 30.91828 x 87.24783

RQ-2021-08-02-73

Variable Name	Rep 1	Rep 2	Pooled/Average
AmphipodPct	0	0	0
ChironPct	8.97	8.9	8.935
ChironTaxa	6	9	15
ClingerTaxa	9	9	18
ColeopteraPct	22.07	25.34	23.705
DecapodaPct	1.38	0	0.69
DipteraPct	19.31	16.44	17.875
DominantPct	31.72	35.62	33.67
Dominant Taxa	Leuctra	Leuctra	Leuctra
EPTTaxa	10	8	18
EphemPct	2.76	2.74	2.75
EphemTaxa	2	2	4
FFBrowGrazPct	0	0	0
FFEpiColDepPct	35.17	36.64	35.905
FFParasitePct	0	0	0
FFPIPiercePct	2.07	1.37	1.72
FFPredCarnPct	13.79	12.33	13.06
FFScavPct	0.69	0	0.345
FFScrapePct	12.41	14.04	13.225
FFShredPct	20.69	21.23	20.96
FFSubColDepPct	0	0	0
FFSuspFiltPct	15.17	14.38	14.775
FFUnknownPct	0	0	0
GastropodaPct	0	0	0
IsopodaPct	0	0	0
LongLivedTaxa	4	3	7
OdonataPct	1.38	1.37	1.375
OligocPct	0	0	0
OligocTaxa	0	0	0
PelecypodaPct	0	0	0
PlecopPct	33.79	38.36	36.075
PolychaetePct	0	0	0
PolychaeteTaxa	0	0	0
SCI_2012_Rep	48.36494	45.48601	46.92547512
SensitiveTaxa	9	7	16
TanytarsiniPct	0	0.68	0.34
TotalDBar	0	0	0
TotalDensity	0	0	0
TotalNind	145	146	291
TotalTaxa	29	28	57
TrichopPct	17.93	15.75	16.84
TrichopTaxa	6	4	10
TrombidPct	0	0	0
VeryTolerantPct	3.45	0.68	2.065

SCI 2021	47
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Photo Log

Win ID / Storet: 33020147

Station Name: McCostill Mill Cr. Ebenezer Church Rd.

Date: 8/03/2021

Samplers: F. Buty, A. Mosne

- 1 N
- 2 E
- 3 S
- 4 W
- 5 up
- 6 Down
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17

Notes.

Document Reference # 05.1.0

Laboratory: Wetlands Research Laboratory

Sampler's initials : FB

Page 1 of 1

Date/Time: 7/3/2021, 14:44

Date/Time: 08/03/21 11444

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]

Comments: **Sample Container lot#** L20020*..021 **Expiration** 02/ 15/ 2023

RQ -2021-08-02-73

Contact name: Mike King

Phone: 850 595-0605

Sampler's name: Frank Butera

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

³ Recorded using IRT-2

REFERENCE STREAMS	WBID	Kit	Qty	Bottle Group
McCostill Mill Cr Below Ebenezer Church Rd 33020147	118	SCI Kit	1	A
		Metals	1	
		Pesticides	1	
		Tracers	1	
		Escherichia coli	1	
		SCI	1	B
		HA	1	
		RPS	1	
		LVS	1	
RQ-2021-08-02-73				

Field ID	WBID	WIN Description	County	Lat Long
32020147	118	McCostill Mill Cr Below Ebenezer Church Rd	Santa Rosa	30.91828, 87.247833

	Lot #	Expiration date:
UWF E. coli Bottle	L20020*..021	2/15/2023
Sulfuric Acid	SA 0353110	1/11/2022
Nitric Acid	NA0344060	1/4/2022
Syringe	1005533	-
PO4 Filter	17236199	-

Field ID	TIME	Conductivity	pH

Notes (access, boat ramp, etc.)



Coolers delivered TLH 08/04/2021