



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2020

Meter Passed End
of Day CCV
Yes ☒ No ☐

WIN Station Name: Wakulla River At Boat Tram

Date: 07/20/2020
(mm/dd/yyyy)

WIN/ Field ID: 44059

WBID: 1006

Latitude: 30.23458
(Decimal Degrees)

County: Wakulla

ORG ID: 21FLWQA Longitude: -84.29447
(Decimal Degrees)

Receiving Body of Water: St. Marks River

RQ-2020- 04-20-U3

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Blake Spencer	☒	☒	☒	☒	☒
Avril Wood-McGrath	☒	☒	☒	☒	☒
	☒	☒	☒	☒	☒
	☒	☒	☒	☒	☒

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

Water Level: Dry/ Pooled/ Low ☒ Normal / High / Flooded		Water ID# <u>Exo #1</u>	
Photos: Yes / ☒ No	Flow: No Flow / ☒ Flowing / NA	Tide: Rising/ Falling/ Slack/ ☒ NA	Tide Times: High _____ Low _____
Biological Samples Collected: None ☒ HA ☒ SCI ☒ RPS ☒ Algae ID ☒ LVS ☐ LVI Other: _____			
SBIO ID Numbers:	SBIO-ID: <u>81204</u>	HA-ID: <u>16640</u>	RPS-ID: <u>9578</u>
Macrophyte-ID: <u>11688</u>		LIMS#: <u>2K4204</u>	
Notes:			

Duplicate Sample	
Time Zone: EST CEN Time: _____	Field ID: _____ (WIN ID_DUP)
WIN DMT Activity ID: _____	

Blank	
Time Zone: EST CEN Time: _____	Field ID: _____ (Blank Type_DDMYYYY)
DI Source: _____	Location: _____
☐ Field Blank ☐ Equipment Blank ☐ Field Cleaned Equipment Blank	Equipment ID: _____

LIMS EVENT ID: CEN-DIST-2020-WAS-SECT-2020-07-20-01 WIN Import ID: _____
Enter Field Parameters, Verify Station ID In LIMS DMT: AWM 7/22/20 QC Station ID, Field Parameters In LIMS DMT: AWM 12/10/20 ✓
(Initials/Date) (Initials/Date)

Scan/Save Field Sheets SBS 10/6/2020 Migrate Data to WIN: _____ Verify Data In WIN: _____
(Initials/Date) (Initials/Date) (Initials/Date)



RQ-2020- 04-20-03

Customer: WAS

Project ID: Wakulla BMAP

Collected By: Blake Spencer & Avril Wood-McGra

Field Report Prepared By: Avril Wood-McGrath

Sampling Agency: FDEP

Place Label Here
If label is not available write Field ID

Field ID: 44059

NITRIC ACID
20-70%
THERMOPHILIC SCIENTIFIC
1201 W. 14th Street
Miami, FL 33134
1-800-858-2771

Contains 1.1 HNO₃

Lot No: NA9354050
Expires: 12/20/20
See Safety Data Sheet (SDS)

Sulfuric Acid
18M
THERMOPHILIC SCIENTIFIC
1201 W. 14th Street
Miami, FL 33134
1-800-858-2771

Contains 1.1 H₂SO₄

Lot No: NA9354050
Expires: 12/20/20
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Contains 1.1 H₂SO₄

Lot No: NA9354050
Expires: 12/20/20
See Safety Data Sheet (SDS)

Matrix: Fresh / Marine

(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)
1/20	1150	3.48	39.4%	21.61	7.56	0.3	VOB (S)	0.8	322.4	0.15
	EST / CST									

Central Lab please use top row for login purposes

	EST / CST									

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 ☒ H2SO ₄ *	☒ <2	1	A
	Lot # SA9354050 Exp: 12/20/20				
Metals (P-500ML)	☒ W-ICPMS ☒ W-ICP ☒ W-HARD	☒ Ice ☒ HNO ₃ *	☒ <2	1	A
	Lot # NA9354060 Exp: 12/20/20				
Filtered Nutrients (P125ML)	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice		1	A
	Filter Lot # 16969882 Syringe Lot # 9240133				
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			
Macroinvertebrates (PJ-2L)	☒ MI-FW-QLDC	☒ Formalin		1	B
Periphyton (PT-50ML)	☒ ALGAE-ID	☒ Ice		1	B
Microbiology (Contract Lab Bottle)	☐ E Coli ☐ F Coli ☐ Enterococci	☐ Ice			
Molecular (QPCR-P-500ML)	☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-DG3 ☐ PCR-GULL2 ☐ PCR-GFD ☐ See Notes	☐ Ice			
Tracers (BG-500ML)	☒ W-E8321-DI ☒ W-E8321-MS	☒ Ice		1	A
Pesticides (BG-500ML) (BG-1L)	☐ W-E8321-DI ☐ W-E8321-MS ☒ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-PCL-SQ-R ☐ W-CARB-AA (5 ml of MCAA** Buffer Solution)	☒ Ice		4	A

Name:

Blake Spencer

Signature:

Date:

7/20/20

*2.0 ml of Preservative used unless noted otherwise.

**MCAA: Monochloroacetic acid buffer solution

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

SAMPLE ID 81204 ORG ID 2111 W08A LATITUDE 30.23488
 COUNTY Arkansas STORET # 44059 LONGITUDE -84.29447
 DATE 7/20/20 TIME 1150 SAMPLING AGENCY DEP
 SITE NAME St. Marks River
 FIELD ID/NAME 44059 RECEIVING BODY OF WATER St. Marks River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>78</u> Silviculture <u>0</u> Field/Pasture <u>2</u> Agricultural <u>0.9</u> Residential <u>17</u> Commercial <u>0.7</u> Industry <u>0.9</u> Other (Specify) <u>water</u>								Landscape Development Intensity Index (LDI) <u>1.17</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>85</u> m wide <u>0.5</u> m/s <u>0.5</u> m/s <u>0.5</u> m/s <u>0.8</u> m deep <u>0.8</u> m deep <u>0.8</u> m deep
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) <u>3-4</u>				
High Water Mark: <u>0.8</u> + <u>0.8</u> = <u>1.6</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		WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Mid: <u>0.5</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Bottom: <u>0.8</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Meter ID: <u>Exp #1</u>			
Woody Debris (Snags) <u>10%</u> <u>HHH</u> Undercut Banks / Roots <u>0%</u> <u>HHH</u> Leaf Packs or Mat <u>0%</u> <u>HHH</u> Aquatic Vegetation <u>20%</u> <u>HHH</u> Rock or Shell Rubble <u>0%</u> <u>HHH</u> Sand <u>0%</u> <u>HHH</u> Mud / Muck / Silt <u>0%</u> <u>HHH</u> Other <u>0%</u> <u>HHH</u> Other <u>0%</u> <u>HHH</u>		Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐		Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐	
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☐ ☒ Fish: ☐ ☐ ☐ ☒ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐		Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>See Field</u> Exp: <u>Sheet</u>		Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐	
		Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>Ice</u> Exp:		Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐	
System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Spring Run</u>		AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.			
SAMPLING TEAM <u>Blake Spencer + Avril Wood-McGloth</u>		SIGNATURE: <u>[Signature]</u>		DATE: <u>7/20/20</u>	

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

SAMPLE ID 8/204 ORG ID 21FLWQA LATITUDE 30.23458
 COUNTY Walkeila STORET # 44059 LONGITUDE -84.29447
 DATE 7/20/20 TIME 1150 SAMPLING AGENCY FDEP
 SITE NAME Walkeila River at Boat Team
 FIELD ID/NAME 44059 RECEIVING BODY OF WATER St. Marks River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>78</u> Silviculture <u>0</u> Field/Pasture <u>2</u> Agricultural <u>0.9</u> Residential <u>17</u> Commercial <u>0.7</u> Industry <u>0.9</u> Other (Specify) <u>water</u>								Landscape Development Intensity Index (LDI) <u>1.17</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>85</u> m wide <u>0.5</u> m/s <u>0.5</u> m/s <u>0.5</u> m/s <u>0.8</u> m deep <u>0.8</u> m deep <u>0.8</u> m deep
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) <u>3-4</u>				
High Water Mark: <u>0.8</u> + <u>0.8</u> = <u>1.6</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially Channelized: ☒ No ☐ Some recovery ☐ Mostly recovered, more sinuous ☐ 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		WATER QUALITY			
% Coverage Woody Debris (Snags) <u>10%</u> Undercut Banks / Roots <u>10%</u> Leaf Packs or Mat <u>10%</u> Aquatic Vegetation <u>73%</u> Rock or Shell Rubble <u>10%</u> Sand <u>10%</u> Mud / Muck / Silt <u>10%</u> Other <u>10%</u> Other <u>10%</u>		Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Mid: <u>0.3</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Bottom: <u>0.3</u> <u>21.61</u> <u>7.56</u> <u>3.48</u> <u>39.4</u> <u>322.4</u> <u>0.15</u> Meter ID: <u>Exp #1</u> Water Odors: Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>See Field Exp: Sheet</u> Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>Ice</u> Exp: <u>Sheet</u> Water Surface Oils: Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color: Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ 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) ☒ <u>Spring Run</u> AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.			
SAMPLING TEAM <u>Blake Spencer + Arril Wood-McGloth</u>		SIGNATURE: <u>Blake Spencer</u>		DATE: <u>7/20/20</u>	

Entered by: ~~BB~~ 7/20/20

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

SBI0:81204

SAMPLING AGENCY: <u>DEP</u>		STORET STATION NUMBER: <u>44059</u>	DATE (MM/DD/YY): <u>07/20/20</u>	RECEIVING BODY OF WATER: <u>St. Marks River</u>
REMARKS: <u>HA: 16640</u>	COUNTY: <u>Wakulla</u>	LOCATION: <u>Wakulla River @ Boat Turn</u>	FIELD ID/NAME: <u>44059</u>	

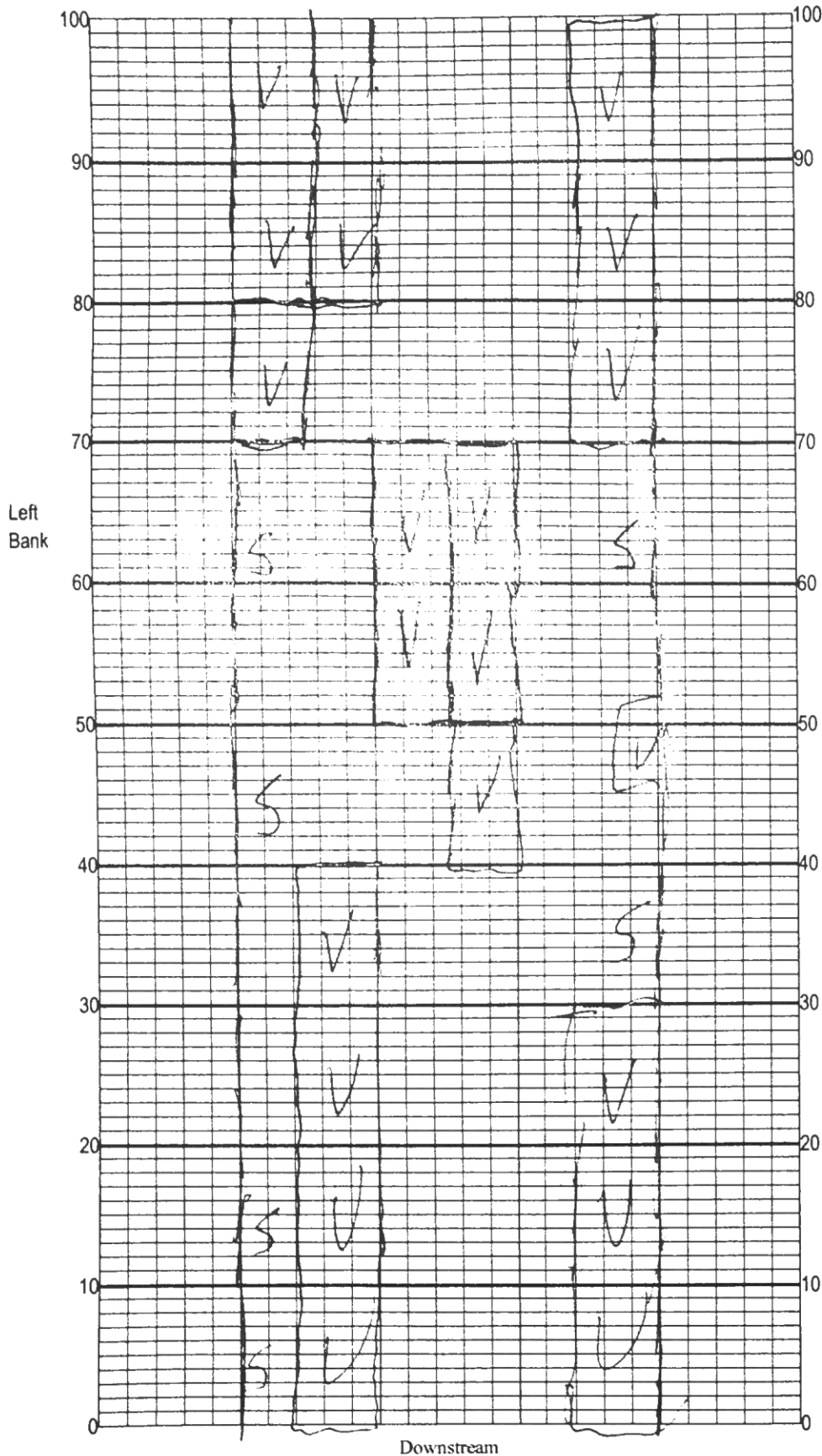
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>10</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>20</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 1
Water Velocity <u>20</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 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>11</u> ----- Primary Score <u>61</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 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>20</u>	20 19 18 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>10</u> Left Bank <u>10</u>	10 9	8 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>10</u> Left Bank <u>10</u> ----- Secondary Score <u>80</u>	10 9	8 7 6	5 4	3 2 1

TOTAL SCORE

141

Date: <u>7/20/20</u>	Analyst: <u>Blake Sporer</u>	Signature: <u>Blake Sporer</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



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

Location: Wakulla River @ Boat Trum
Date: 7/20/70
Sampler: Blake Spencer

100 m: Latitude <u>30.234248</u>	
Longitude <u>-84.294304</u>	
0 m: Latitude <u>30.23458</u>	
Longitude <u>-84.29447</u>	
Substrates: Code key, draw proportionate habitat abundance. %	
☐ S	Snags <u>19%</u>
☐ R	Roots/undercut banks <u> </u>
☐ L	Leaf Packs (or mats) <u> </u>
☐ M	Aquatic Macrophytes <u>230%</u>
☐	<u> </u>
☐	<u> </u>
☐	<u> </u>
Pools total # observed = <u> </u>	
# range expected = <u> </u>	
Average width <u>85</u> m	
Average depth <u>1.5</u> m	
Velocity measured at <u>50</u> meter mark.	
WQ & chemistry taken at <u>50</u> meter mark.	
Habitat Smothering: Note areas (on map) where sand or silt is smothering 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.	

Plants observed / other notes:

SBIO: 8/20/4

RPS-9578

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Wakulla River at Boat Tram</u>					County: <u>Wakulla</u>		Date: <u>7/20/20</u>		Investigators: <u>Blake Spencer / Amir Wood - MCGarth</u>	
Transect t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect t (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
7 0 4	1	X	yes		7 60 4	1	X	yes		
	2	N				2	N			
	3	N				3	N			
	4	N				4	N			
	5	N		0		5	N		0	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	N				9	N			
7 10 6	1	X	yes		7 70 4	1	X	yes		
	2	N				2	N			
	3	N				3	N			
	4	N				4	N			
	5	N		0		5	N		0	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	N				9	N			
7 20 6	1	X	yes		8 80 6	1	N	yes		
	2	N				2	N			
	3	N				3	N			
	4	N				4	N			
	5	N		0		5	N		0	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	N				9	N			
7 30 5	1	X	yes		7 90 6	1	X	yes		
	2	N				2	N			
	3	N				3	N			
	4	N				4	N			
	5	N		0		5	N		0	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	N				9	N			
7 40 5	1	X	yes		7 100 3	1	X	yes		
	2	N				2	N			
	3	N				3	N			
	4	N				4	N			
	5	N		0		5	N		0	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	N				9	N			
7 50 4 2	1	X	yes		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 densimeter 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%.					
	2	N								
	3	N								
	4	N								
	5	N		0						
	6	N								
	7	N								
	8	N								
	9	N								

STORET Station Number:

44059

 Secchi depth 0.8 WOB
 Estimated? NO

 # points ranked 4-6 28 51
 total points assessed 78
 % points ranked 4-6 65%

Check accompanying data collected at same site/date.

 Algal mat sample ☒
 Linear Veg Survey ☒
 Habitat Assessment ☒
 SCI/Biorecon ☒
 Water sample ☒
RQ- 2020-04-20-03

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

SBTO: 81204 Macrophyte: 11688

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

Waterbody: <u>Wakulla River @ Boat Tram</u>	Date: <u>7/20/11</u>	County: <u>Wakulla</u>	Store Number: <u>44059</u>
Analyst: <u>Blake Spencer / April Wood - McEachern</u>	Signature: <u>[Signature]</u>		

Comments:

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.

[illegible]

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: 2102

RQ: 2020-04-20 03

Project: W. L. B. MAP

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

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.	Blake Spencer	7/20/20	0729	22.2	759.1	8.71	8.69	100.1	—	1.085	(P) F	(L) F
ICV	Blake Spencer	7/20/20	0735	22.39	758.3	9.68	9.66	100.0	—	—	(P) F	(L) F
CCV	Blake Spencer	7/20/20	1427	27.23	756.9	7.89	7.93	99.9	—	—	(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 mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	Blake Spencer	7/20/20	0740	191120A	12/2020	1000	1000	(P) F	(L) F
ICV	Blake Spencer	7/20/20	0741	191120A	12/2020	1000	1001	(P) F	(L) F
CCV	Blake Spencer	7/20/20	1431	2908C81	08/2021	100	104.5	(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.	Blake Spencer	7/20/20	0745	191120A	06/2021	4.00	22.2	4.00	159.7	(P) F	(L) F
Calibr.	Blake Spencer	7/20/20	0748	200407B	10/2021	7.01	22.1	7.01	-14.8	(P) F	(L) F
Calibr.	Blake Spencer	7/20/20	0750	191120C	06/2021	10.03	22.3	10.03	-185.6	(P) F	(L) F
ICV	Blake Spencer	7/20/20	0752	191120A	06/2021	4.00	22.1	4.02	159.2	(P) F	(L) F
CCV	Blake Spencer	7/20/20	1433	191120C	06/2021	10.03	22.9	10.01	-155.5	(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 _____, slope from 4 to 7 _____ (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: _____

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						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:

Wakulla BMAP

Customer: WAS-SECT

Project ID: BMAP

Requester: Curtis Musson

Field Report Prepared By:

Collected By:

Sampling Agency:

Field/WIN ID	Location	Field ID	WIN/STORET #	Latitude	Longitude	Collection (comp begin or grab)		Composite end		Bottle Group(s)
						Comp Grab	Date	Time	Central	
44059	WAKULLA RIVER AT BOAT TRAM					☐ Comp	☒ Grab	7/20/20	11:50	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen	30.4	
						Temp (C)		pH	7.56	
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		pH		
						Salinity (ppt)		Comments		
						☐ Comp	☒ Grab	7/20/20	11:15	
						Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		
						Temp (C)		p		

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
Paul Wood-McGowan	7/20/20 14:09	Hand Delivered	1		7/22/2020 1414

Group: A	Bottle Type:	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	ALKALINITY					
	TURBIDITY					
	W-CL-IC					
	W-COLOR					
	W-F					
	W-SO4-IC					
	W-TDS					
	W-TSS					
Group: A	Bottle Type:	BP-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	CHLSUITE-W					
Group: A	Bottle Type:	P-250ML-WO-THI	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	ECOLI-18QT					
Group: A	Bottle Type:	BG-500ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	W-E8321-DI					
	W-E8321-MS					
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	HNO3	Enter Number of Bottles Sent to Lab
	W-HARD				HNO3	
	W-ICP				LOT# NH9354063	
	W-ICPMS				F-Exp: 12/20/2020	
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab
	W-NH3					
	W-NO2NO3				H2SO4	
	W-S-A-TP				LOT# SH9354063	
	W-TKN				Exp: 12/20/2020	
	W-TOC					
Group: A	Bottle Type:	P-125ML	# of Bottles: 1	Preservative:	FILTER-ICE	Enter Number of Bottles Sent to Lab
	W-PO4-F					
Group: A	Bottle Type:	BG-1L	# of Bottles: 4	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	W-PSNP-TQ					
Group: B	Bottle Type:	PT-50ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab
	ALGAL_ID					

Group: B

Bottle Type:

PJ-2L

of Bottles: 2

Preservative:

Formalin

Enter Number of Bottles Sent to Lab

MI-FW-QLDC

Cooler Packing Worksheet for Request: RQ-2020-04-20-03

Wakulla BMAP

Ship Cooler On: 5/6/2020

Customer/Project: WAS-SECT/BMAP

Assigned To: KLUG_K

Requester: Curtis Musson

Priority: 3

850-245-8453

2600 Blair Stone Rd

Tallahassee, FL 32399

Attn: Curtis Musson

Comments:

No preservatives needed.

Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ

Group B: SCI, Algae_ID

Packing Notes:

No FedEx Labels

No Trash Bag

No Bubblewrap

Requested Analyses:

Bottle Group: A

of Sites: 1

Container ID: P-1L

Qty: 1 Preservation: ICE

Lot # 00676640

Description: Plastic Bottle 1L

Analysis

ALKALINITY

TURBIDITY

W-CL-IC

W-COLOR

W-F

W-SO4-IC

W-TDS

W-TSS

Description

Alkalinity in aqueous matrices as mg CaCO3/L

Turbidity in aqueous matrices

Chloride in aqueous matrices

True Color measured at 450 nm (not valid for NPDES monitoring)

Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)

Sulfate in aqueous matrices

Total Dissolved Solids in aqueous matrices

Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample

Container ID: BP-1L

Qty: 1 Preservation: ICE

Lot # 1268908

Description: Brown Plastic Bottle 1L

Analysis

CHLSUITE-W

Description

Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

Container ID: P-250ML-WO-THI

Qty: 1 Preservation: ICE

Lot # L19267

Description: 250 ml Sterilized no tablet

Analysis

ECOLI-18QT

Description

Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems

Container ID: BG-500ML

Qty: 1 Preservation: ICE

Lot # 00072998

Description: Brown Glass Bottle 500ML

Affix BLUE dot to container.

Analysis

W-E8321-DI

W-E8321-MS

Description

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Container ID: P-500ML

Qty: 1 Preservation: HNO3

Lot # 00076643

Description: Plastic Bottle 500 mL

Affix RED nitric acid dot to container.

Analysis

W-HARD

W-ICP

W-ICPMS

Description

Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3

Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

Container ID: P-500ML

Qty: 1 Preservation: ICE And H2SO4

Lot # 00076643

Description: Plastic Bottle 500 mL

Affix YELLOW sulfuric acid dot to container.

Analysis

W-NH2

W-NO2NO3

W-S-A-TP

W-TKN

W-TOC

Description

Ammonia in aqueous matrices as mg N/L

Nitrite/Nitrate in aqueous matrices as mg N/L

Total Phosphorus in aqueous matrices as mg P/L

Total Kjeldahl Nitrogen in aqueous matrices

Nonpurgeable Organic Carbon in aqueous matrices

Container ID: P-125ML

Qty: 1 Preservation: FILTER-ICE

Lot # 00076883

Description: Plastic Bottle 125 mL

Analysis

W-PO4-F

Description

Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

Container ID: BG-1L

Qty: 4 Preservation: ICE

Lot # 00Q75668

Description: Brown Glass Bottle 1L

Affix BLUE dot to container.

Analysis

W-PSNP-TQ

Description

Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

Bottle Group: B

of Sites: 1

Container ID: PT-50ML

Qty: 1 Preservation: ICE

Lot # 00Q7178190z

Description: Plastic Tube 50 mL

Analysis

ALGAL_ID

Description

Qualitative assessment of algal taxa present without counts

Container ID: PJ-2L

Qty: 2 Preservation: Formalin

Lot # BIOVASH

Description: Plastic Jar 2 L

Analysis

MF FW-QLDC

Description

No. Taxa of FW macroinverts, qual samp, 20 dipnets.

Cooler Packed By: BK

Number of Coolers: 1

Date: 5-7-20

Kit must also include:

- ☒ Field Sheets
- ☒ Temperature Control Bottle
- ☐ FedEx Bills, if applicable
- ☐ Plastic Bags/Zip Ties
- ☐ Acid Labels (sets of 24)

If Preservation Included:

ID _____	Exp _____	Lot # _____
ID _____	Exp _____	Lot # _____
ID _____	Exp _____	Lot # _____
ID _____	Exp _____	Lot # _____
ID _____	Exp _____	Lot # _____

PLEASE RETURN ALL COOLERS FOR RQ-2020-04-20-03