



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Wakulla River at Boat Tram

Date: 7/17/19
(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: 2019-07-15-23

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Blake Spencer Amy Wood-McGrath				X	X	X	X	X	☒ Sample Container	☐ Van Dorn	☐ Pole	
									☐ Carboy	☒ Syringe		
									☐ Dipper	☐ Other		
Depth Measured with <u>SONAR</u>								Equipment ID <u>SONAR</u>				
Collection Method												
☐ Wading								☐ Canoe/Kayak				
☐ From Shore								☐ Electric Motor				
☐ Other								☒ Gasoline Motor				
Water Level: Dry/ Pooled/ Low / Normal / High / Flooded				Meter ID# <u>185104543</u>				Matrix: Fresh / Marine / Di				
Photos: Yes / No				Flow: No Flow / Intestinal / Flowing / NA				Tide: Rising/ Falling/ Slack/ NA				
Tide Times: High Low												
Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (µmhos/cm)	Temp. (C°)		
EST	11:46	1.1	0.3	VOB	4.35	49.4	7.61	0.15	317.8	21.5		
CEN												
Biological Samples Collected: None HA SCI RPS Algae ID LVS LVI Other:												
SBIO ID Numbers: SBIO-ID: <u>79970</u> HA-ID: RPS-ID: <u>9416</u> Macrophyte-ID: <u>11447</u> LIMS#: <u>2104100</u>												
Parameter Suite		Parameter Methods			Preservation		Lot#		Expiration pH Check			
Preserved Nutrients		☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-A-TP			☒ Ice ☒ H2SO4		<u>SA8344070</u>		<u>12/10/19</u> ☒ <2			
Metals		☒ W-ICPMS ☒ W-ICP			☒ Ice ☒ HNO3		<u>NA9089030</u>		<u>4/19/20</u> ☒ <2			
Filtered Nutrients		☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter			☒ Ice							
Chlorophyll		☒ CHLSUIT-W			☒ Ice							
Physical/Aggregate (Fresh)		☒ Alkalinity / ☒ W-F / ☒ W-TSS / ☒ TURBIDITY / ☒ W-CH-IC / ☒ W-COLOR / ☒ W-SO4-IC / ☒ W-TDS			☒ Ice							
Physical/Aggregate (Marine)		☐ Alkalinity / ☐ W-BR-IC / ☐ W-F / ☐ W-TSS / ☐ TURBIDITY			☐ Ice							
Macroinvertebrates		☒ MI-FW-QLDC			☒ Formalin							
Periphyton		☒ ALGAE-ID			☒ Ice							
Microbiology		☒ Coli ☐ F Coli ☐ Enterococci			☒ Ice							
Molecular		☐ PCR-FILTER ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD			☐ Ice							
Tracers		☒ W-E8321-DI ☒ W-E8321-MS			☒ Ice							
Pesticides		☒ W-PSNP-TQ ☐ W-CT-CL-R ☒ W-E8321-DI ☒ W-CARB-AA ☐ W-PCL-SQ-R ☒ WE8321-MS			☒ Ice							
Phytoplankton		☐ DTY-QN-C ☐ PKD-QN-C			☐ Ice							

Notes: BMAP

Signature: [Signature]

WIN ID / Field ID: 44059

Location: Wakulla River at boat tram

Date: 7/17/19

LIMS EVENT ID: WAS-SECT-2019-07-17-01 WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT: 8/12/19 QC Station ID, Field Parameters In LIMS DMT: 8/12/19

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

Entered by: *Ref* 8/12/19

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

SAMPLE ID 79970 ORG ID 21FLWQA LATITUDE 30.23458
 COUNTY Wakulla STORET # 44059 LONGITUDE -84.29447
 DATE 7/17/2019 TIME 11:46 AM SAMPLING AGENCY FDEP
 SITE NAME Wakulla River @ Boat Tram
 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>NA</u> Field/Pasture <u>2</u> Agricultural <u>1</u> Residential <u>17</u> Commercial <u>1</u> Industry <u>1</u> Other (Specify) <u>1 (water)</u>							Landscape Development Intensity Index (LDI) <u>1.2</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>1.1</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>78m</u> Right Bank: <u>78m</u>				Hydrologic Modification Score (per FT 3101) <u>3-4</u>			
High Water Mark: <u>0.5</u> + <u>1.1</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 <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>10%</u></td> <td></td> <td></td> </tr> <tr> <td>Undercut Banks / Roots</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Leaf Packs or Mat</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Aquatic Vegetation</td> <td><u>>30%</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>730</u></td> <td><u>#####</u></td> <td></td> </tr> <tr> <td>Mud / Muck / Silt</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Other</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)	<u>10%</u>			Undercut Banks / Roots				Leaf Packs or Mat				Aquatic Vegetation	<u>>30%</u>	<u>####</u>		Rock or Shell Rubble..				Sand.....	<u>730</u>	<u>#####</u>		Mud / Muck / Silt				Other				Other				WATER QUALITY <table border="1"> <thead> <tr> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top: <u>0.3</u></td> <td><u>21.5</u></td> <td><u>7.61</u></td> <td><u>4.35</u></td> <td><u>49.4</u></td> <td><u>317.8</u></td> <td><u>0.5</u></td> <td><u>1.1</u></td> </tr> <tr> <td>Mid:</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>☒ VOB</td> </tr> <tr> <td>Bottom</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>1.1</u></td> </tr> </tbody> </table> Meter ID: <u>ProAss 18J104543</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>21.5</u>	<u>7.61</u>	<u>4.35</u>	<u>49.4</u>	<u>317.8</u>	<u>0.5</u>	<u>1.1</u>	Mid:							☒ VOB	Bottom							<u>1.1</u>
	% Coverage	INVERT # Times Sampled	PERI # Times Sampled																																																																										
Woody Debris (Snags)	<u>10%</u>																																																																												
Undercut Banks / Roots																																																																													
Leaf Packs or Mat																																																																													
Aquatic Vegetation	<u>>30%</u>	<u>####</u>																																																																											
Rock or Shell Rubble..																																																																													
Sand.....	<u>730</u>	<u>#####</u>																																																																											
Mud / Muck / Silt																																																																													
Other																																																																													
Other																																																																													
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>21.5</u>	<u>7.61</u>	<u>4.35</u>	<u>49.4</u>	<u>317.8</u>	<u>0.5</u>	<u>1.1</u>																																																																						
Mid:							☒ VOB																																																																						
Bottom							<u>1.1</u>																																																																						
ABUNDANCE <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr> <td>Periphyton:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Fish:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Aquatic Plants:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒</td> </tr> <tr> <td>Iron/Sulfur Bacteria:</td> <td>☒</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>				Not Obs.	Rare	Common	Abundant	Periphyton:	☐	☐	☐	☒	Fish:	☐	☐	☐	☒	Aquatic Plants:	☐	☐	☐	☒	Iron/Sulfur Bacteria:	☒	☐	☐	☐	Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>See Field</u> Exp: <u>Sheet</u> Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>Ice</u> Exp:																																																	
	Not Obs.	Rare	Common	Abundant																																																																									
Periphyton:	☐	☐	☐	☒																																																																									
Fish:	☐	☐	☐	☒																																																																									
Aquatic Plants:	☐	☐	☐	☒																																																																									
Iron/Sulfur Bacteria:	☒	☐	☐	☐																																																																									
			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐ 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, April Wood-McGrath</u>			SIGNATURE: <u>Blake Spencer</u>		DATE: <u>7/17/19</u>																																																																								

LIMS: 210410G

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

SBIO: 79970 ✓

Waterbody: Wakulla River @ Boat Tram

Date: 7/17/19

County: Wakulla

Storet Number: 44059

Analyst: Blake Soerres

Signature: _____

Comments: BMAP Sampling

Comments: BMAP Sampling

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² 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]

Entered by: ~~RAH~~ 8/12/19
 Qcd by: ~~RAH~~ 8/16/19

SBIO: 79970 RPS: 9416 ✓

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Wakulla River @ Boat Tram County: Wakulla Date: 7/17/19 Investigators: Blake Sperrer, April Wood, MG Smith

STORET Station Number: 44059

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
5	1	X	✓		3	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	
6	1	X	✓		3	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	
5	1	X	✓		6	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	
4	1	X	✓		3	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	
5	1	X	✓		4	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	
7	1	X	✓		7	1	X	✓	
	2	X	✓			2	X	✓	
	3	X	✓			3	X	✓	
	4	X	✓			4	X	✓	
	5	X	✓	0 ✓		5	X	✓	0 ✓
	6	X	✓			6	X	✓	
	7	X	✓			7	X	✓	
	8	X	✓			8	X	✓	
	9	X	✓			9	X	✓	

Secchi depth 100
 Estimated?

points ranked 4-6 51
 total points assessed 94
 % points ranked 4-6 51%

(Exclude X's)

Check accompanying data collected at same site/date.

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

RQ: 2019-07-15-23

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

(> 3 considered smothered)

(N to 1 mm)

(3) 6mm

(4) 20mm

(5) 10cm

(6)

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%.

Entered by: *RL 8/12/19*
QC by: [signature]

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

SB10: 79970 ✓ HA: 16122 ✓

SAMPLING AGENCY: Florida Department of Environmental Protection		STORET STATION NUMBER: 44059	DATE (MM/DD/YY): 7/17/2019	RECEIVING BODY OF WATER: St. Marks River
REMARKS: BMAP	COUNTY: Wakulla	LOCATION: Wakulla River @ Boat Tram		FIELD ID/NAME: 44059

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Snag Leaf Root Rock Aquatic Vegetation Substrate Diversity <u>10</u> ✓	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 <u>20</u> ✓ %	Major productive habitat present at site (>30% 27.2% 25.8% 24.4% 26.6%) 20 19 18 17 16	Major productive habitat, by aerial extent (21.6% 20.2% 18.8% 17.4% 16%) 15 14 13 12 11	6% to 15% major productive habitat (15% 13% 11% 9% 6%) 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>20</u> ✓ <u>0.5</u> m/s	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 Artificial Channelization <u>20</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. May have spoil banks. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. May have spoil banks. 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>10</u> ✓ Left Bank <u>10</u> ✓ If Banks are PipeClay, BedRock or Concrete at Bank full: Optimal	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>10</u> ✓ Left Bank <u>10</u> ✓	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6 (18m 15m 12m)	Width of vegetation 6 to 12 m. human activities close to system 5 4 (9m)	Less than 6 m of buffer zone due to intensive human activities 3 2 1 (6-5m) (4-3m) (<2m)
Riparian Zone Vegetation Quality Right Bank <u>10</u> ✓ Left Bank <u>10</u> ✓ Secondary Score <u>80</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. 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

141 ✓

TOTAL SCORE

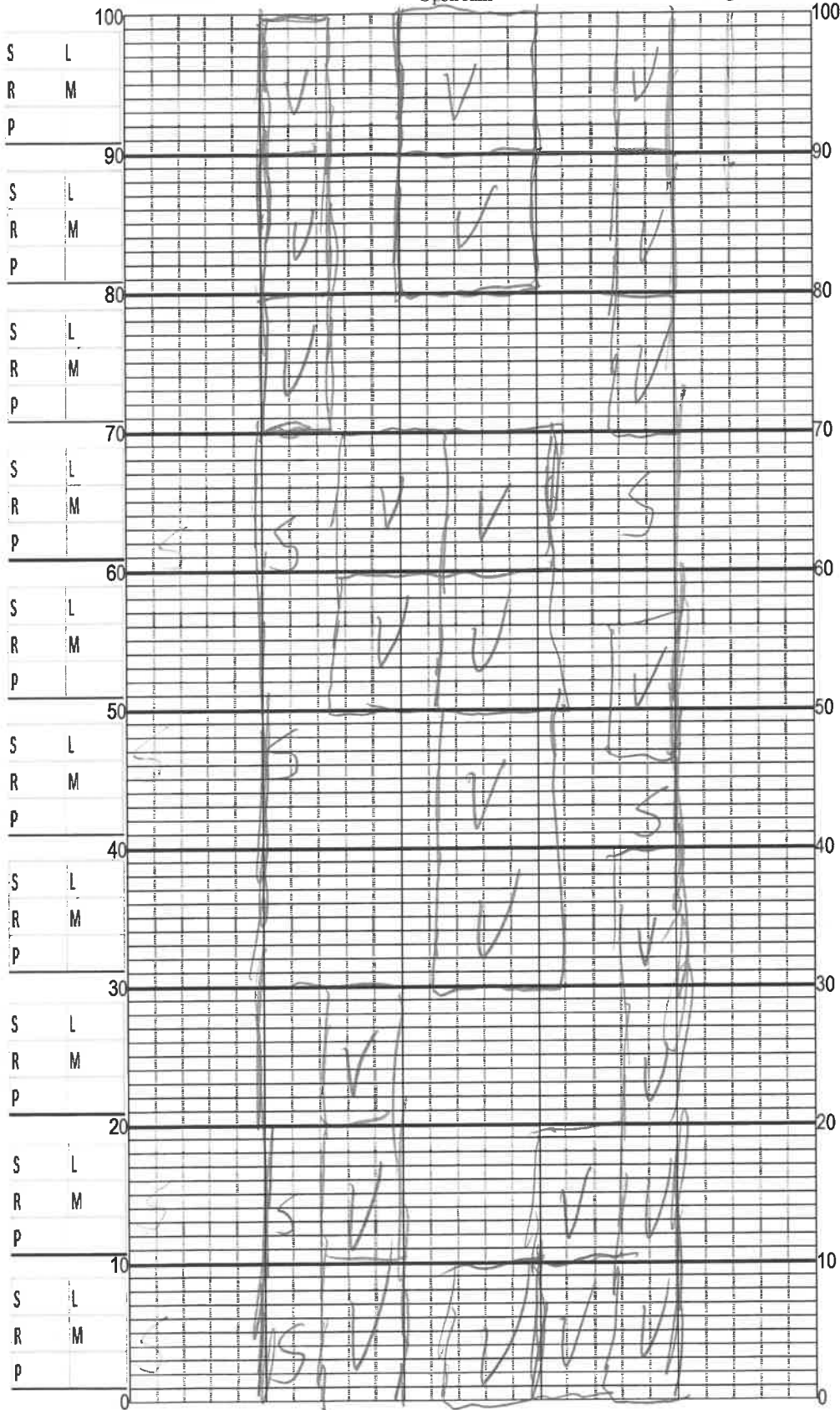
Date: <u>7/17/19</u>	Analyst: <u>Blake Spencer</u>	Signature: <u>[signature]</u>
----------------------	-------------------------------	-------------------------------

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Left Bank

Upstream

Right Bank



Location: Wakulla River @ Boat Tram

Date: 7/17/2019

Blake Spencer Sampler:

100 m: Latitude 30.234248
Longitude -84.294304
0 m: Latitude 30.234197
Longitude -84.292789

Substrates: Code key, draw proportionate habitat abundance. %

☐ S Snags 1%
☐ R Roots/undercut banks
☐ L Leaf Packs (or mats)
☐ M Aquatic Macrophytes 730%
☐ Rc Rock
☐
☐ P Pools total # observed =
range expected =

Average width 95 m
Average depth 1.5 m
Velocity measured at 50 meter mark.
Velocity 0.5 m/s

WQ & chemistry taken at 50 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.

Notes/Plants Observed:
2m² = 13.2 Sweeps

Meter Mark	Depth (m)	Width (m)	Velocity Measurement (Sec)
Avg.			

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

Expected Number of Pools

$$\left(\frac{100}{12 * W} \right) * 1 =$$

$$\left(\frac{100}{12 * W} \right) * 2 =$$

# of Sweeps	Conversion	m ²	%
Snag	÷ 8	m ²	
Root	÷ 8	m ²	
Leaf	÷ 8	m ²	
Macrophyte	÷ 8	m ²	
Rock	÷ 8	m ²	
Total Available Habitat		m ²	
Total Area		m ²	
Total Unavailable Habitat		m ²	

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: 18J104543

RQ:

Project: Wakulla BMAP

- 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	7/17/19	0732	21.2	760	8.88	8.88	100.0	—	—	P/F	L/F
ICV		7/17/19	0734	21.3	760	8.86	8.88	100.1	—	—	P/F	L/F
CCV		7/17/19	1351	24.0	759.9	7.83	7.86	100.6	—	—	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.	Blake Spencer	7/17/19	0736	190618F	6/2020	1000	1000	P/F	L/F
ICV			0738	190618F	6/2020	1000	999	P/F	L/F
CCV			1354	2808884	7/2020	100	104.7	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	7/17/19	0741	180621E	01/2020	7.01	22.4	7.01	-29.8	P/F	L/F
Calibr.			0743	190618A	12/2020	4.00	22.5	4.00	145.4	P/F	L/F
Calibr.			0746	180621F	01/2020	10.03	22.6	10.03	200.3	P/F	L/F
ICV			0748	180621F	01/2020	10.03	22.7	10.02	200.9	P/F	L/F
CCV			1557	190618A	12/2020	4.00	22.8	4.14	137.5	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	Blake Spencer	7/17/19	0749	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:

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Customer: WAS-SECT

Requester: Curtis Musson

Field Report Prepared By:

Project ID: BMAP

Collected By:

Sampling Agency:

Blake Spencer / Ann Wood - McBrath

Ann Wood - McBrath
FDEP

Location	WIN ID / Field ID	44059	☒ Comp ☒ Grab	Collection (comp begin or grab) Date	7/17/19	Time	11:46	Eastern Central	Composite end Date	Time	—	Bottle Group(s) (See pg 2)	
Field ID	44059			Matrix (type, e.g., Salt, Fresh, etc)	Fresh		Diss. Oxygen 49.4	☒ mg/L ☒ % sat	Total Res. Chlorine	—			
WIN/STORET #	Location	Wakulla River at boat tram		Temp (C)	21.5		pH	7.61	Sample Depth	0.3	☒ ft ☒ m	Sp. Conductance (umho/cm)	317.8
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	0.15		Comments						
Location	WIN ID / Field ID	44059	☐ Comp ☐ Grab	Collection (comp begin or grab) Date	7/17/19	Time	11:13	Eastern Central	Composite end Date	Time	—	Bottle Group(s)	
Field ID	44059			Matrix (type, e.g., Salt, Fresh, etc)	Biological		Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine	—			
WIN/STORET #	Location	Wakulla River at boat tram		Temp (C)	—		pH	—	Sample Depth	—	☐ ft ☐ m	Sp. Conductance (umho/cm)	—
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	—		Comments	1 sci jva / algal ID					
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date	Time	Eastern Central	Composite end Date	Time						Bottle Group(s)	
Field ID				Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine	—			
WIN/STORET #				Temp (C)			pH		Sample Depth		☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)			Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date	Time	Eastern Central	Composite end Date	Time						Bottle Group(s)	
Field ID				Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine	—			
WIN/STORET #				Temp (C)			pH		Sample Depth		☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)			Comments						
Location	☐ Comp ☐ Grab	Collection (comp begin or grab) Date	Time	Eastern Central	Composite end Date	Time						Bottle Group(s)	
Field ID				Matrix (type, e.g., Salt, Fresh, etc)			Diss. Oxygen	☐ mg/L ☐ % sat	Total Res. Chlorine	—			
WIN/STORET #				Temp (C)			pH		Sample Depth		☐ ft ☐ m	Sp. Conductance (umho/cm)	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)			Comments						

Relinquished By:

Date/Time

Shipping Method

Number of Coolers Shipped:

Received By:

Date/Time

AWM

7/17/19

HDP

1

[Signature]

7/17/19 1342

Group: A	Bottle Type:	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	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	1
	CHLSUITE-W						
Group: A	Bottle Type:	P-250ML-WO-THI	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ECOLI-18QT						
Group: A	Bottle Type:	BG-500ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	W-E8321-DI						
	W-E8321-MS						
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	HNO3	Enter Number of Bottles Sent to Lab	1
	W-ICP				HNO3		
	W-ICPMS				LOT# NA9099030		
					EXP: 04/09/20		
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
	W-NH3						
	W-NO2NO3				H2SO4		
	W-S-A-TP				LOT# S0834070		
	W-TKN				EXP: 12/10/2019		
	W-TOC						
Group: A	Bottle Type:	P-125ML	# of Bottles: 1	Preservative:	FILTER-ICE	Enter Number of Bottles Sent to Lab	1
	W-PO4-F						
Group: A	Bottle Type:	BG-1L	# of Bottles: 4	Preservative:	ICE	Enter Number of Bottles Sent to Lab	4
	W-PSNP-TQ						
Group: B	Bottle Type:	PT-50ML	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALGAL_ID						
Group: B	Bottle Type:	PJ-2L	# of Bottles: 2	Preservative:	Formalin	Enter Number of Bottles Sent to Lab	

Group: B Bottle Type: P-J-2L # of Bottles: 2 Preservative: Formain Enter Number of Bottles Sent to Lab

MI-FW-QLDC

Cooler Packing Worksheet for Request: RQ-2019-07-15-23

Wakulla BMAP

Ship Cooler On: 7/11/2019

Customer/Project: WAS-SECT/BMAP

Assigned To: REYNOLDS_T

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

Requested Analyses:

Bottle Group: A

of Sites: 1

Container ID: P-1L

Qty: 1 Preservation: ICE

Lot # 00073852

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

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 # 1248230

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 # 6F21-1N

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 # 6U671185

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 # 68074433

Description: Plastic Bottle 500 mL

Affix RED nitric acid dot to container.

Analysis

W-ICP

W-ICPMS

Description

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 # 68074433

Description: Plastic Bottle 500 mL

Affix YELLOW sulfuric acid dot to container.

Analysis

W-NH3

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 # 07073850

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 # 0207413

Description: Brown Glass Bottle 1L

Affix BLUE dot to container.

3598

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 # 03775003

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 # BIOWASH

Description: Plastic Jar 2 L

Analysis

MI-FW-QLDC

Description

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

Cooler Packed By: Tyler R.

Number of Coolers: 2

Date: 07/10/19

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-2019-07-15-23