QA 3/1/16

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

February 2016

Data Qualified? Yes / No

STORET Station Name: Wakulla River at CR 365 Bridge **Date:** 02/16/2016 (mm/dd/yyyy)

STORET Station ID: 34879 **Latitude:** 30.213731 (Decimal Degrees)

WBID: 1006 **RQ -** 2016-02-15-27 **ORG ID:** 21FLWQA **Longitude:** -84.261636 (Decimal Degrees)

Receiving Body of Water: St. Marks River **Field ID:** 34879 **County:** Wakulla

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection
Curtis Musson		X	X			NA	
Ben Ralys							
Robert Wiwi	X		X	X	X	NA	

Sampling Equipment

- [X] Sample Container
- [ ] Carboy
- [ ] Dipper
- [ ] Van Dorn
- [X] Syringe
- [ ] Other
- [ ] Pole

Equipment ID

Collection Method

- [ ] Wading
- [ ] From Shore
- [ ] Other (note below)

Via Boat
- [ ] Canoe/Kayak
- [ ] Electric Motor
- [X] Gasoline Motor

Water Level: Dry / Low / (Normal) / High / Flooded

Matrix: (Fresh) / Marine / DI

Meter ID# Biology 7 **Photos:** (Yes) / No

Tide Falling: Yes / No / (NA)

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	3:27	0.3	2.5	7.61	85.2	7.87	0.15	VOB	306	21.22
CEN	3:29	2.4		7.50	84.4	7.88	0.15		306	21.22

Biological Samples Collected: None (HA) (SCI) (LVS) (RPS) LVI Other

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	[X] TKN / TP / Nox / NH3 / TOC [X] Other	[X] Ice [X] H_2SO_4	SA 5259020	09/16/16	[X] <2
Metals	[X] W-ICPMS [X] W-ICP	[X] Ice [X] HNO_2	NA 5113210	04/23/16	[X] <2
Filtered Nutrients	[X] oP [X] Field Filtered 0.45 µm Filter	[X] Ice			
Chlorophyll	[X] CHLSUITE-W	[X] Ice			
BOD	[X] BOD-INHB [X] BOD-UNIN	[X] Ice			
Physical/Aggregate	[X] TSS / Turbidity / Alkalinity / Color [ ] Other	[X] Ice			
Macroinvertebrates	[X] MI-FW-QLDC	[X] Formalin			
Microbiology	[ ] E Coli [ ] F Coli [ ] Entero [ ] QPCR	[ ] Ice			
Periphyton	[X] ALGAE-ID	[X] Ice			
Pesticides	[ ] W-PSNP-TQ [ ] W-AHERB-AA [ ] W-PYR-AA-R [ ] W-PC-AA-SF [ ] W-UHERB-AA [ ] W-GLYPH	[ ] Ice [ ] Other			

Place Preservative Sticker(s) Here (If Available)

Notes:

Do Did Not Pass CCV "J"

SBIo: 75580 RPS: 7740

VPDB: 9502

Place Label Here (If Available)

Signature: [signature] **Date:** 2-16-16

Field Parameters Entered into LIMS: CM - 2-17-16 (Initials/Date) **Field Parameters QC in LIMS:** BR 2/19/16 (Initials/Date)

Date Migrated to STORET: (Initials/Date) **Field Sheets Scanned/Saved:** [initials] 2/26/16 4:25 (Initials/Date)

CM 5/31/16

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

SAMPLING AGENCY: Florida Department of Environmental Protection		STORET STATION NUMBER: 34879	DATE (MM/DD/YY): 02/16/2016	RECEIVING BODY OF WATER: St. Marks river
REMARKS:	COUNTY: Wakulla	LOCATION: Wakulla River at CR 365 Bridge		FIELD ID/NAME: 34879

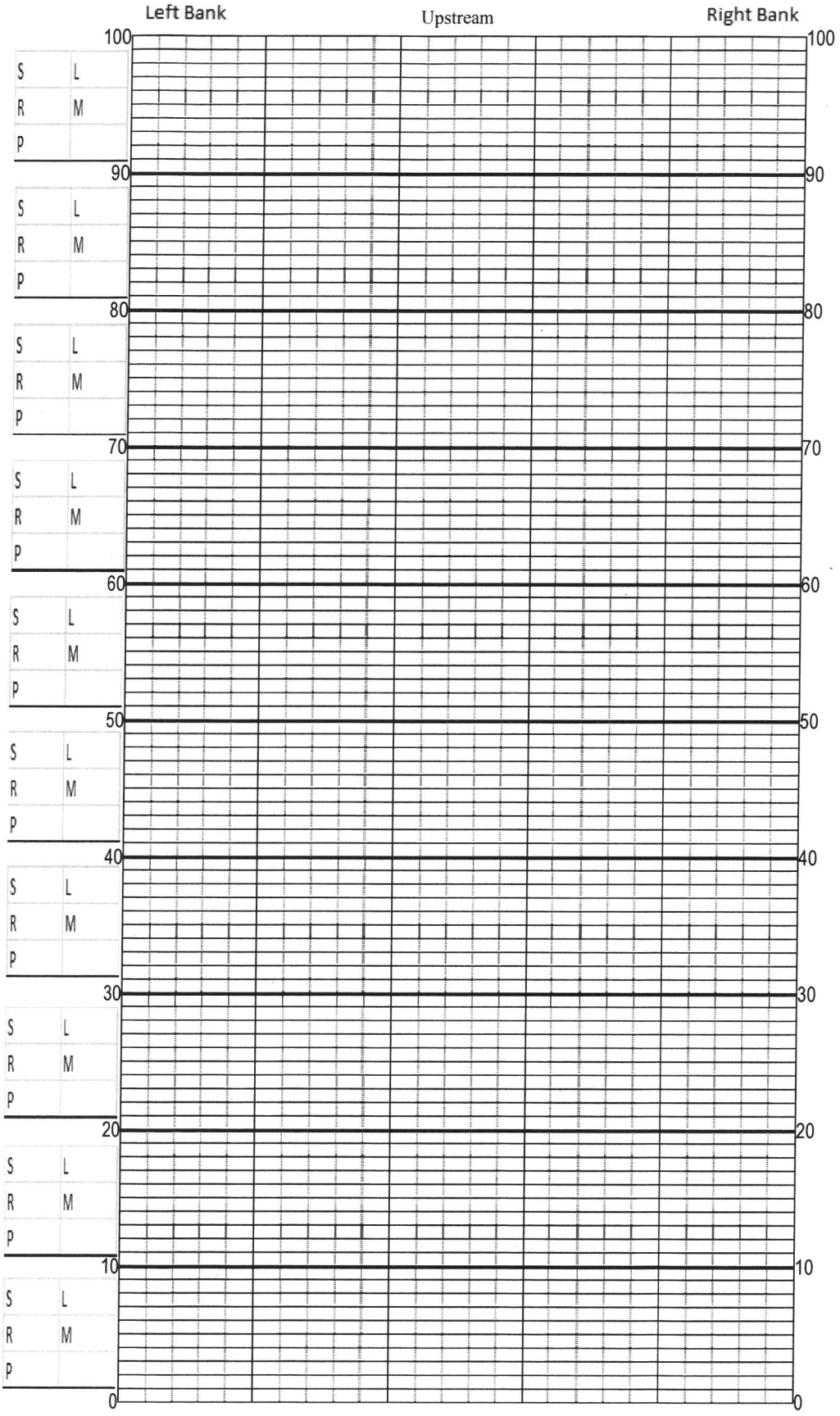
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components: Snag, Roots, Leaf, Rock, Aquatic Vegtation **Substrate Diversity** 9	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive 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 20 _____%	Greater than 30% major productive habitat present at site (100% 83% 66% 48% 30.5%) (20) 19 18 17 16	16% to 30% major productive habitat, by aerial extent (30.4% 27% 23% 20% 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 20 _____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 17 Primary Score 66	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** 20	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. (20) 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 6	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 10 Left Bank 10 If Bakns are PipeClay, BedRock or Concrete at Bank full: Optimal	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. (+,+,+) (10) 9	Only meets 2 of the 3 requirements for optimal bank stability. (+,+,-) 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. (+,-,-) 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. (-,-,-) 3 2 1
Riparian Buffer Zone Width Right Bank 10 Left Bank 3	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 10 Left Bank 3 Secondary Score 66	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

132 **TOTAL SCORE**

Date: 2/16/16	Analyst: Ben ralys	Signature:

SBID: 75580

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



↓ Smothering Notes

Location: Wakulla River at CR 365 Bridge

Date: 02/16/2016

Sampler: Ben Ralys

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

S	Snags	1
R	Roots/undercut banks	
L	Leaf Packs (or mats)	
M	Aquatic Macrophytes	50%
R	Rock	
P	Pools	total # observed = ____ # range expected = ____

Average width _____ m
Average depth _____ m

Velocity measured at _____ meter mark.
Velocity _____ m/s

WQ & chemistry taken at 70 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:
$2m^2$ = 16 Sweeps

Meter Mark	Depth (m)	Width (m)	Velocity Measurement (Sec)
70	2.5	110	
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	30 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	

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

Waterbody: Wakulla at CR 365 Bridge | Date: 02/16/2016 | County: Wakulla | Storet Number: 34879

Analyst: Curtis Musson | Signature: Curtis Musson

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 m^2 of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides											
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum							X		X		
Chara											
Cicuta maculata	X	X			X						
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum				X							
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata	X										
Hydrocotle											
Hygrophila polysperma											
Hymenocallis								X			
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa											
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
Micranthemum glomeratum											
Micranthemum umbrosum											
Mikania scandens	X	X	X	X	X	X	X				
Myriophyllum aquaticum											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Myriophyllum heterophyllum	X	X	X	X	X	X	X				
Najas guadelupensis						X					
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata	X	X	X	X	X	X	X	X	X	X	
Potamogeton illinoensis											
Rhynchospora inundata											
Rosa palustris											
Ruellia simplex											
Rumex verticillatus	X							X	X		
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia			X	X	X	X	X	X			BR
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Scirpus (schenoplectus) californicus											
Sparganium americanum											
Typha	X	X			X			X	X		
Vallisneria americana	D	D	D	D	D	D	D	D	D	D	
Zizania aquatica											
Panicum Glabrum		X						X			
~~Carex~~	X	X		X		X	X	X	X	X	Cm
Sagittaria latifolia			X	X	X	X	X	X			
Aster carolinianus					X						

If no Dominant or Co-Dominant were selected, indicate with "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage											
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage	X	X	X							X	
> 50% Macrophyte Coverage				X	X	X	X	X	X		

SBtaxa: 75580

VPDB: 9502

BR 2/19/16

Macrophyte Field Data

ter Data | Existing Data

earch Method

- (•) Macrophyte ID
- ( ) Visit ID (SBIO Sample ID)
- ( ) STORET Station Number

Search: 9502

STORET Station:

Visit ID (SBIO Sample ID):

Macrophyte ID: 9502

tation Visit Information

Station: 34879

Sample Date: 2/16/2016

Lead Sampler: Ralys, Benjamin

lacrophyte ID: 9502

Identifier: Musson, Curtis

SCINAME	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-
Aster carolinianus					P					
Ceratophyllum demersum							P		P	
Cicuta maculata	P	P			P					
Crinum americanum				P						
Hydrilla verticillata	P									
Hymenocallis								P		
Mikania scandens	P	P	P	P	P	P	P			
Myriophyllum heterophyllum	P	P	P	P	P	P	P			
Najas guadalupensis						P				
Polygonum glabrum		P						P		
Pontederia cordata	P	P	P	P	P	P	P	P	P	P
Rumex verticillatus	P							P	P	
Sagittaria latifolia			P	P	P	P	P	P		
Typha	P	P			P			P	P	
Vallisneria americana	D	D	D	D	D	D	D	D	D	D

CM 2-17-16

BR 2/19/16

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Wakulla at CR 365 Bridge

County: Wakulla

Date: 02/16/2016 ~~02/16/2016~~

Investigators: Curtis Musson

STORET Station Number: 34879

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

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
>3	1	5	Y	
	2	5		
	3	N		
	4	4		0
60	5	X		0
	6	X		0
	7	X		
X-3	8	6		
	9	N		
>5	1	6		
	2	6		
	3	6		
	4	X RW		0
70	5	X		0
	6	X		0
	7	5		
X-3	8	N		
	9	6		
>4	1	6		
	2	5		
	3	N		
	4	X		0
80	5	X		0
	6	X		0
	7	N		
X-3	8	6		
	9	6		
>4	1	5		
	2	6		
	3	N		
	4	6		0
90	5	X		0
	6	X		0
	7	N		
X-2	8	N RW 5		
	9	N		
>4	1	N		
	2	6		
	3	N		
	4	N		0
100	5	X		0
	6	6		0
	7	6		
	8	6		
	9	N		

Secchi depth	VOB
Estimated?	

# points ranked 4-6	41
total points assessed	71
% points ranked 4-6	58

Check accompanying data collected at same site/date.	
Algal mat sample	✓
Linear Veg Survey	✓
Habitat Assessment	✓
SCI/Biorecon	✓
Water sample	✓

RQ-2016-02-15-27

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: 75580

RPS: 7740

BR 2/19/16

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%.

RQ-2016-02-15-27

Boldly "X" this box if data is qualified and on this page.

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

Meter ID: Bridge 7 Project: WAKULLA

Notes: (1) Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
(2) Always wait for meter to stabilize before recording any readings.
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site_____

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification _____

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	Curtis Musson	2/15/16	1520	22.2	8.71	8.71	100.0	70.6	—	P	L
ICV	Curtis Musson	2/15/16	1524	22.3	8.69	8.68	99.9	70.6	—	P	L
CCV	Ben Ralys	2/16/16	7:34	20.81	8.95	8.95	100.0	69.6	—	P	L
CCV	Curtis Musson	2-16-16	16:42	21.60	8.64	7.84	88.9	62.5	—	P	L

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.
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; DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	Curtis Musson	2/15/2016	1528	CC14162	10/15/2016	996	996	P	L
ICV	Curtis Musson	2/15/2016	1529	CC14162	10/15/2016	996	996	P	L
CCV	Ben Ralys	2/16/16	7:40	CC14162	10/15/2016	996	990	P	L
CCV	Curtis Musson	2/16/16	16:44	CC13882	7-15-2016	101.1	102	P	L

Report specific conductance as a whole number with no decimal figure. Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	Curtis Musson	2/15/2016	1532	156244	10/2017	7.0	7.00	-20.5	P	L
Calibr.	Curtis Musson	2/15/2016	1534	154634	07/2017	4.0	4.00	152.6	P	L
Calibr.	Curtis Musson	2/15/2016	1537	146934	10/2016	10.0	10.00	-193.4	P	L
ICV	Curtis Musson	2/15/2016	1539	154634	07/2017	4.0	3.97	154.7	P	L
CCV	Ben Ralys	2/16/16	741	156244	10/2017	7.0	6.99	-19.7	P	L
CCV	Curtis Musson	2/16/16	16:47	154634	07/2017	4.00	4.05	150.4	P	L

Report pH with one decimal place; pH Acceptance criteria ±0.2 SU; mV pH7 Range 0±50; mV pH 4 Range +180±50;
mV pH 10 Range -180±50; Slope from 7 to 10 and 4 to 7 must be between 165 and 180 mV

Depth (Quarterly) Date of Last Depth Verification _____

Depth Sensor (Daily)	Name	Date	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode in air				0.000			

ICV acceptance criteria ±5 % or ±0.05m, whichever is greater

Request Number: RQ-2016-02-15-27

Wakulla Springs and Sally Ward Springs

Florida Department of Environmental Protection
Central Laboratory Submittal Form

last revised Nov 10, 2015

Customer: WQAP

Project ID: SMP

Requester: Benjamin Ralys

Collected By: Benjamin Ralys

Field Report Prepared By:

Sampling Agency:

Location: Wakulla River at CR 365 Bridge
Field ID: 34879
STORET #: 34879
Latitude: 30.213731 (☒ dd ☐ dms) **Longitude:** -84.261636 (☒ dd ☐ dms)

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 2-16-16 Time 3:27 | Eastern / Central | Composite end Date Time | Bottle Group(s) (See pg 2): 1, B, C, D

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) | pH | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt) | Comments: See Field Sheet for Field Measurements, 2 depths

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Location: Wakulla River at Boat TRAM
Field ID: 44059
STORET #: 44059
Latitude: 30.234581 (☒ dd ☐ dms) **Longitude:** -84.294487 (☐ dd ☐ dms)

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 2-16-16 Time 11:05 | Eastern / Central | Composite end Date Time | Bottle Group(s): 1, B, C, D

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen 4.02 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L) —

Temp (C) 20.33 | pH 7.47 | Sample Depth 0.3 ☐ ft ☒ m | Sp. Conductance (umho/cm) 305

Salinity (ppt) 0.15 | Comments

Location: Sally Ward Spring at Wakulla Park Dr.
Field ID: GIWA0021
STORET #: GIWA0021
Latitude: 30.2414 (☒ dd ☐ dms) **Longitude:** -84.3109 (☒ dd ☐ dms)

☐ Comp ☒ Grab | Collection (comp begin or grab) Date 2-16-16 Time 1:15 | Eastern / Central | Composite end Date Time | Bottle Group(s): A

Matrix (type, e.g., Salt, Fresh, etc): Fresh | Diss. Oxygen 4.02 ☒ mg/L ☐ % sat | Total Res. Chlorine (mg/L) —

Temp (C) 20.62 | pH 7.45 | Sample Depth 0.3 ☐ ft ☒ m | Sp. Conductance (umho/cm) 334

Salinity (ppt) 0.16 | Comments

Location:
Field ID:
STORET #:
Latitude: ☐ dd ☐ dms **Longitude:** ☐ dd ☐ dms

☐ Comp ☐ Grab | Collection (comp begin or grab) Date Time | Eastern / Central | Composite end Date Time | Bottle Group(s)

Matrix (type, e.g., Salt, Fresh, etc) | Diss. Oxygen ☐ mg/L ☐ % sat | Total Res. Chlorine (mg/L)

Temp (C) | pH | Sample Depth ☐ ft ☐ m | Sp. Conductance (umho/cm)

Salinity (ppt) | Comments

Relinquished By:	Date/Time	Shipping Method	Received By:	Date/Time	Relinquished By:	Date/Time	Received By:	Date/Time
							NMB	2/16/16/4:25

Cooler Packing Worksheet for Request: RQ-2016-02-15-27
Wakulla Springs and Sally Ward Springs
Ship Cooler On: 2/1/2016 Requester: Benjamin Ralys
Customer/Project: WQAP/SMP Priority: 3

850-245-8443
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400

Attn: Benjamin Ralys

Comments:
No preservatives needed.

Requested Analyses:

Bottle Group: A **# of Sites: 1**

Container ID: P-1L **Qty: 1** **Preservation: ICE** **Lot #** 00053616
Description: Plastic Bottle 1L

Analysis	Description
ALKALINITY	Alkalinity in aqueous matrices as mg CaCO3/L
TURBIDITY	Turbidity in aqueous matrices
W-CL-IC	Chloride in aqueous matrices
W-COLOR	True Color measured at 450 nm
W-F	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
W-NO2	Nitrite in aqueous matrices as mg N/L
W-TDS	Total Dissolved Solids in aqueous matrices
W-TSS	Total Suspended Solids in aqueous matrices

Container ID: P-1L **Qty: 1** **Preservation: ICE** **Lot #** 00053616
Description: Plastic Bottle 1L

Analysis	Description
BOD-UNIN	BOD, NOT nitrogen-inhibited

Container ID: BP-1L **Qty: 1** **Preservation: ICE** **Lot #** 1158198
Description: Brown Plastic Bottle 1L

Analysis	Description

CHL-CORR-W Phytoplankton chlorophyll-a (corrected for phaeophytin) and phaeophytin by spectrophotometry

Container ID: P-500ML **Qty: 1** **Preservation: ICE And H2SO4** **Lot #** 0D063547

Description: Plastic Bottle 500 mL Affix YELLOW sulfuric acid dot to container.

Analysis	Description
W-NH3	Ammonia in aqueous matrices as mg N/L
W-NO2NO3	Nitrite/Nitrate in aqueous matrices as mg N/L
W-S-A-TP	Total Phosphorus in aqueous matrices as mg P/L
W-TKN	Total Kjeldahl Nitrogen in aqueous matrices
W-TOC	Nonpurgeable Organic Carbon in aqueous matrices

Container ID: P-125ML **Qty: 1** **Preservation: ICE-FLTR** **Lot #** 0D063891

Description: Plastic Bottle 125 mL

Analysis	Description
W-PO4-F	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

Bottle Group: B # of Sites: 2

Container ID: P-1L **Qty: 2** **Preservation: ICE** **Lot #** 00053616

Description: Plastic Bottle 1L

Analysis	Description
ALKALINITY	Alkalinity in aqueous matrices as mg CaCO3/L
TURBIDITY	Turbidity in aqueous matrices
W-CL-IC	Chloride in aqueous matrices
W-COLOR	True Color measured at 450 nm
W-F	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
W-NO2	Nitrite in aqueous matrices as mg N/L
W-TDS	Total Dissolved Solids in aqueous matrices
W-TSS	Total Suspended Solids in aqueous matrices

Container ID: P-1L **Qty: 2** **Preservation: ICE** **Lot #** 00053616

Description: Plastic Bottle 1L

Analysis	Description
BOD-UNIN	BOD, NOT nitrogen-inhibited

Container ID: BP-1L **Qty: 2** **Preservation: ICE** **Lot #** 1158198

Description: Brown Plastic Bottle 1L

Analysis	Description
CHL-CORR-W	Phytoplankton chlorophyll-a (corrected for phaeophytin) and phaeophytin by spectrophotometry

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Container ID: P-500ML **Qty: 2** **Preservation: HNO3** **Lot #** 0000663547

Description: Plastic Bottle 500 mL Affix RED nitric acid dot to container.

Analysis	Description
W-ICP	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects
W-ICPMS	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

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Container ID: P-500ML **Qty: 2** **Preservation: ICE And H2SO4** **Lot #** 0000663547

Description: Plastic Bottle 500 mL Affix YELLOW sulfuric acid dot to container.

Analysis	Description
W-NH3	Ammonia in aqueous matrices as mg N/L
W-NO2NO3	Nitrite/Nitrate in aqueous matrices as mg N/L
W-S-A-TP	Total Phosphorus in aqueous matrices as mg P/L
W-TKN	Total Kjeldahl Nitrogen in aqueous matrices
W-TOC	Nonpurgeable Organic Carbon in aqueous matrices

Container ID: P-125ML **Qty: 2** **Preservation: ICE-FLTR** **Lot #** 0000663891

Description: Plastic Bottle 125 mL

Analysis	Description
W-PO4-F	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

Bottle Group: C # of Sites: 2

Container ID: PT-50ML **Qty: 2** **Preservation: ICE** **Lot #** 430897

Description: Plastic Tube 50 mL

Analysis	Description
ALGAL_ID	Qualitative assessment of algal taxa present without counts

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Bottle Group: D **# of Sites: 2**

Container ID: PJ-2L **Qty: 4** **Preservation: Formalin** **Lot #** Bio-Wash

Description: Plastic Jar 2 L

Analysis	Description
MI-FW-QLDC	No. Taxa of FW macroinverts, qual samp, 20 dipnets.

Cooler Packed By: NJB Date: 2-8-16

DEP Cooler ID #(s): 2 coolers

Kit must also include:

- ✓ Field Sheets
- ✓ Temperature Control Bottle (1 per cooler)
- ✓ FedEx Bills, if applicable (1 per cooler)
- ✓ Plastic Bags
- ✓ Zip Ties

If Preservation Included:

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

PLEASE RETURN ALL COOLERS FOR RQ-2016-02-15-27