

FDEP FORM FD 9000-3: PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID 74112 ORG ID ZIFLA WQSP LATITUDE 30.167392
 COUNTY WAKULLA STORET # 22020064 LONGITUDE -84.654714
 DATE 3-18-15 TIME 1423 SAMPLING AGENCY FDEP - WQSP
 SITE NAME SMITH CREEK
 FIELD ID/NAME SMITH REF RECEIVING BODY OF WATER OCHLOCKONEE RIVER

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐								Landscape Development Intensity Index (LDI) <u>1.08 (3/13)</u>
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy				Typical Width (m) Depth (m)/Velocity (m/sec) Transect 11 sec 7 sec 8 ft 10 ft <u>2.5</u> m wide				
Local Watershed NPS Pollution: ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy								
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>718m</u> Right Bank: <u>716m</u>				Hydrologic Modification Score (per FT 3101) <u>1</u>				
High Water Mark: <u>2.0</u> + <u>0.3</u> = <u>2.3</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			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐		
% Coverage Woody Debris (Snags) <u>62</u> Undercut Banks / Roots <u>2</u> Leaf Packs or Mat <u><1</u> Aquatic Vegetation <u>95</u> Rock or Shell Rubble <u>95</u> Sand <u>95</u> Mud / Muck / Silt <u>95</u> Other <u>95</u> Other <u>95</u>			Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.2</u> <u>17.75</u> <u>5.6</u> <u>8.46</u> <u>137</u> <u>775</u> Mid: <u>0.2</u> <u>17.75</u> <u>5.6</u> <u>8.46</u> <u>137</u> <u>775</u> Bottom: <u>0.2</u> <u>17.75</u> <u>5.6</u> <u>8.46</u> <u>137</u> <u>775</u> Meter ID: <u>YSI #2</u>			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐		
% Coverage Woody Debris (Snags) <u>62</u> Undercut Banks / Roots <u>2</u> Leaf Packs or Mat <u><1</u> Aquatic Vegetation <u>95</u> Rock or Shell Rubble <u>95</u> Sand <u>95</u> Mud / Muck / Silt <u>95</u> Other <u>95</u> Other <u>95</u>			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>SA43015020</u> Exp: <u>11-2-15</u>			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐		
% Coverage Woody Debris (Snags) <u>62</u> Undercut Banks / Roots <u>2</u> Leaf Packs or Mat <u><1</u> Aquatic Vegetation <u>95</u> Rock or Shell Rubble <u>95</u> Sand <u>95</u> Mud / Muck / Silt <u>95</u> Other <u>95</u> Other <u>95</u>			Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: <u>SA43015020</u> Exp: <u>11-2-15</u>			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) ☐			AMBIENT FIELD CONDITIONS / NOTES: <u>~80°F, calm, clear</u> <u>forgot secchi.</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.		
SAMPLING TEAM <u>Kear, Jackson, J Clark</u>			SIGNATURE: <u>[Signature]</u>			DATE: <u>3-18-15</u>		

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

SAMPLING AGENCY: FDEP STORET STATION NUMBER: 22020064 DATE (MM/DD/YY): 3/18/15 RECEIVING BODY OF WATER: SMITH CREEK
 REMARKS: Eco Reg Ref Survey COUNTY: Wakulla LOCATION: SMITH CREEK @ 375 FIELD ID/NAME: Smith Creek @ 375

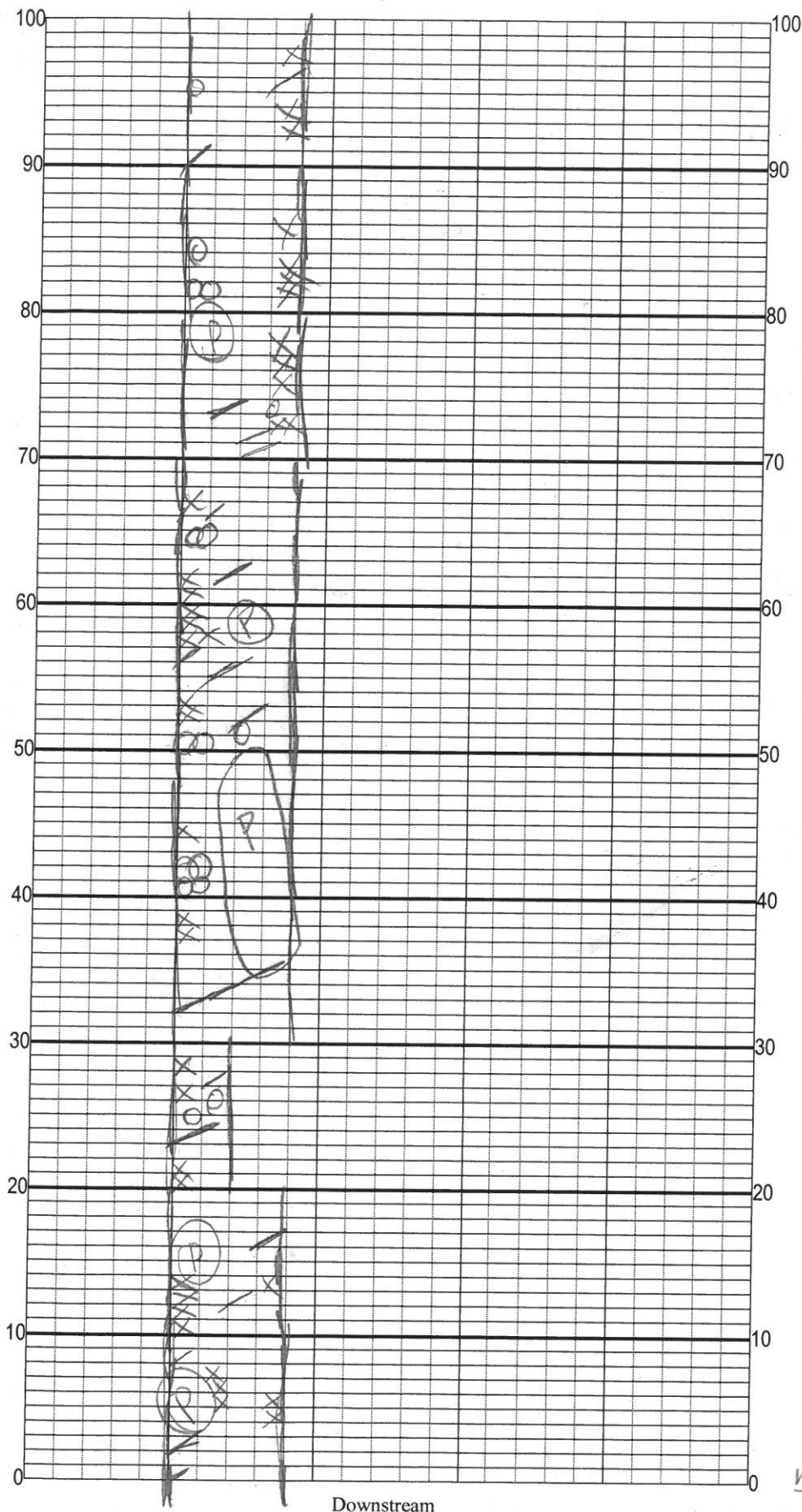
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>12</u>	20 19 18 17 16	15 14 13 <u>12</u> 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>5</u> <u>17</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 <u>5</u> 4 3 2 1
Water Velocity <u>11</u> <u>28</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 <u>0.1</u> 15 14 13 12 <u>11</u>	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>17</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 <u>17</u> 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 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>	<u>20</u> 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>7</u> <u>7</u> Left Bank	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>9</u> <u>10</u> Left Bank	Width of vegetation greater than 18 m 10 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> <u>10</u> Left Bank Secondary Score <u>73</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

118 128 148 TOTAL SCORE

Date: 3.18.15 Analyst: J Jackson Signature: J Jackson

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

Left Bank



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

Location: Smith Creek @ 375
Date: 3/18/15
Sampler: K. Cox, J. Claypool
J. Jackson

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

2 Snags ||||

2 Roots/undercut banks ||||

1 Leaf Packs (or mats) ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

95 sand ||||

total # observed = 5
range expected = 5

Average width 2 m

Average depth .5 m

Velocity measured at 98 meter mark.

WQ & chemistry taken at 98 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:

snags

$$\frac{32}{200} = 1.5\%$$

rocks

$$\frac{201}{200} = 100.5\%$$

$$\frac{200}{200} = 100\%$$

leaves

$$\frac{9}{200} = 0.5\%$$

DEP FORM

D 9000-32: LINEAR VEGETATION SURV

FIELD SHEET

Date: 3.18.15

County: WAKULLA

Storet Number: 22020064

Analyst: JACKSON

Signature: J. A. Jack

Comments: NO PLANTS IN WATER

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]

NO PLANTS IN WATER

FDEP FORM 9000-25: RAPID PERIPHYTON SURVEY FIELD SHEET

Site: SMITH CREEK 376

County: APALACHIA

Date: 3-18-15

Investigators: JACKSON

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	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N - 6, X)	Estimated	Canopy Cover		
0	1	N			40	1	N			80	1	N				
	2					2						2				
	3					3						3				
	4					4						4				
	5					5						5				
	6					6						6				
	7					7						7				
	8					8						8				
	9					9						9				
10	1				50	1				90	1					
	2					2					2					
	3					3					3					
	4					4					4					
	5					5					5					
	6					6					6					
	7					7					7					
	8					8					8					
	9					9					9					
20	1				60	1				100	1					
	2					2					2					
	3					3					3					
	4					4					4					
	5					5					5					
	6					6					6					
	7					7					7					
	8					8					8					
	9					9					9					
30	1				70	1				94	1					
	2					2					2					
	3					3					3					
	4					4					4					
	5					5					5					
	6					6					6					
	7					7					7					
	8					8					8					
	9					9					9					

points ranked 4-6: 8
 total points assessed: 99
 % points ranked 4-6: 8

Secchi depth: _____

Check accompanying data collected at same site/date.
 Algal mat sample: ✓
 Habitat Assessment: ✓
 Linear Veg. Survey: ✓
 SC/Biorecon (circle 1): ✓
 Water sample: ✓
 RA: 2015-02-02-48

Algal Thickness Rank	
N	rough, no algae; slimy; algae to 1 mm
3	>1 mm - 6 mm
4	>6 - 20 mm
5	>20 mm - 10 cm
6	>10 cm

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 an 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%.

SITE NAME: SMITH CREEK 0-375 DATE: 3.18.15 TIME: 1423 EST CST DEPTH: 0.2 ft (m) FIELD ID: SMITHREF
 (military)

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
J JACKSON - SCI			X	X	
K COX - WATER		X	X	X	X
J CLAYPOOL - SCI			X		

SAMPLING EQUIPMENT	
☒ Sample Container	☐ Tubing type: _____
☐ Pole	☐ Other: _____
☐ Pump ID#: _____	☐ Other: _____
WATER QUALITY MEASUREMENTS	
Instrument ID: <u>KS1 # 2</u>	
COLLECTION MODE	
☒ Wading	☐ Via Boat
☐ Diving	☐ Canoe
☐ From Shore	☐ Electric Motor
☐ Other: _____	☐ Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code ¹	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	☒ TKN ☒ TP ☒ NOx ☒ NH3 ☒ TOC ☐ Total N ☐ Other: _____	S W	☒ Ice ☒ H ₂ SO ₄	<u>5A43015010</u>	☒ <2	1
Filtered Nutrients	☐ OP ☐ Other: _____	W	☐ Ice ☐ .45 um Filter			
Unpreserved Nutrients	☐ NO ₂ ☐ NO ₃ ☐ SO ₄ ☐ Other: _____	W	☐ Ice			
Physical/Aggregate Properties	☒ TDS ☒ TSS ☐ TS ☒ Turbidity ☒ Alk ☐ Color ☐ Other: _____	S W	☒ Ice			1
Chlorophyll	☒ CHL-PPTN-W	S W	☒ Ice			1
BOD	☐ BOD-INHB ☐ BOD-UNIN	W	☐ Ice			
Microbiology	MF: ☒ E coli ☐ T Coli ☒ F Coli ☐ Entero ☐ F Strep	S W	☒ Ice			2
Macroinvertebrates	☒ MI-FW-QLDC ☐ MI-FW-QLBR ☐ MI-FW-QNNC ☐ MI-MN-QNNC	S W	☒ Formalin			3
Phytoplankton	☐ PKD-QN-C ☐ DTY-QN-C	W	☐ Lugol's			
Periphyton	☐ PRN-QL-C ☐ DTM-QL-C ☐ PRN-QN-C ☐ DTM-QN-C	W	☐ Formalin			
AGP	☐ AA-AGP ☐ AA-LIM-NUT	W	☐ Ice			
Metals	☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	W	☐ HNO ₃		☐ <2	
Filtered Metals	☐ W-ICP-F ☐ W-FIAS-F ☐ W-ICPMS-F ☐ W-ICP-Tr-F	W	☐ HNO ₃ ☐ .45 um Filter		☐ <2	
Mercury	☐ W-HG-AF	W				
Base/Neutral / Acid Extractable	☐ W-BNA ☐ W-AE ☐ W-BN ☐ W-PAH ☐ W-FL-PRO ☐ W ☐ Other: _____	W	☐ Ice ☐ H ₂ SO ₄		☐ <2	
Pesticides	☐ W-PEST-CL ☐ W-PCB ☐ W-PEST-NP ☐ W-PSCL-PCB ☐ W-NP-AA-SF ☐ W-PC-AA-SF ☐ W-PSHRB-NP ☐ W-SLFN-UREA ☐ W-SULFN-LC ☐ Other: _____ ☐ W-ACIDHERB ☐ W-CARB	W	☐ Ice ☐ H ₂ SO ₄ ☐ Ice ☐ MCAA			
Purgeables	☐ W-VOC-MS ☐ W-VOC-MS-A	W	☐ Ice ☐ HCl			
Bioassay	Specify Test: _____	W	☐ Ice			
OTHER	<u>W-SUC-AA-R</u>	3 W	☒ Other: <u>ICE</u>			1

 Notes: _____

Use one line for each set of sample (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water depth

¹Enter "S" for surface if collected at a depth less than or equal to 1 foot

²Matrix Codes (Insert prefix): SW = Surface Water GW = Groundwater DW = Drinking Water WW = Wastewater O = Other: _____

³PRESERVATIVES: 1 ml added unless otherwise noted

⁴Enter number of containers supplied by the laboratory for the test (e.g., 3 for volatile organics, etc.)

DEP Bureau of Laboratories Water Sample Collection Record

(Use with FDEP SOP-001/01 Form FD 9000-3 Physical/Chemical Characterization Field Sheet)

Florida Department of Environmental Protection

Event ID *

Request Number: RQ-2015-02-02-48
SCI Reference sites

Central Laboratory Sample Submittal Form

Requester: Larry Olney

Field Report Prepared By: Joy Jackson

Customer: BSSP

Collected By:

Send Final Report To: Joy Jackson

Project ID: SCIREF

PMAS:

Sampling Agency:

FDER - WQSP

Lab ID *	Location	Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Latitude	Temp (C)	pH	Sample Depth	Collection (comp begin or grab)	Diss Oxygen (mg/L)	Salinity (PPTn)	Sp Conductance (umho/cm)	Composite end	Eastern	Bottle
	BLACK CREEK 375	BLK 375 REF		30.72555	17.08		0.2	3.18.15	1207	10.28	625	22020063	Central	A, B
				☒ dd	☒ dms		☒ m	☒ Grab		☒ Salinity (PPTn)	☒ Sp Conductance (umho/cm)			
Lab ID *	Location	Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Latitude	Temp (C)	pH	Sample Depth	Collection (comp begin or grab)	Diss Oxygen (mg/L)	Salinity (PPTn)	Sp Conductance (umho/cm)	Composite end	Eastern	Bottle
	SMITH CREEK 375	SMITH REF		30.167392	17.75		0.2	3.18.15	1423	8.46	77	22020064	Central	A, B
				☒ dd	☒ dms		☒ m	☒ Grab		☒ Salinity (PPTn)	☒ Sp Conductance (umho/cm)			
Lab ID *	Location	Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Latitude	Temp (C)	pH	Sample Depth	Collection (comp begin or grab)	Diss Oxygen (mg/L)	Salinity (PPTn)	Sp Conductance (umho/cm)	Composite end	Eastern	Bottle
				☐ dd	☐ dms		☐ m	☐ Grab		☐ Salinity (PPTn)	☐ Sp Conductance (umho/cm)			
Lab ID *	Location	Field ID	Matrix (include type e.g. Salt, Fresh, etc)	Latitude	Temp (C)	pH	Sample Depth	Collection (comp begin or grab)	Diss Oxygen (mg/L)	Salinity (PPTn)	Sp Conductance (umho/cm)	Composite end	Eastern	Bottle
				☐ dd	☐ dms		☐ m	☐ Grab		☐ Salinity (PPTn)	☐ Sp Conductance (umho/cm)			

* Shaded Areas for Lab use only.

** Please see reverse side for Bottle Group information.

last revised October 1, 2003

Group: A	Bottle Type: MI-FW-QLDC	PJ-2L	# of Bottles: 4	Preservative: Formalin	Enter Number of Bottles Sent to Lab <u>6</u>
Group: B	Bottle Type: CHLSUITE-W	BP-1L	# of Bottles: 2	Preservative: ICE	Enter Number of Bottles Sent to Lab <u>2</u>
Group: B	Bottle Type: ECOLI-QT	P-250ML-WO-THI	# of Bottles: 2	Preservative: ICE	Enter Number of Bottles Sent to Lab <u>2</u>
Group: B	Bottle Type: FCOLI-MF	P-120ML-OC	# of Bottles: 2	Preservative: ICE	Enter Number of Bottles Sent to Lab <u>2</u>
Group: B	Bottle Type: TURBIDITY W-ALK W-COLOR W-TDS W-TSS	P-1L	# of Bottles: 2	Preservative: ICE	Enter Number of Bottles Sent to Lab <u>2</u>
Group: B	Bottle Type: W-NH3 W-NO2NO3 W-S-A-TP W-TKN W-TOC	P-500ML	# of Bottles: 2	Preservative: ICE And H2SO4	Enter Number of Bottles Sent to Lab <u>2</u>
Group: B	Bottle Type: W-SUC-AA-R	BG-1L	# of Bottles: 2	Preservative: ICE	Enter Number of Bottles Sent to Lab <u>2</u>