

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

SAMPLE ID 78367 ORG ID 21FLWQ5P LATITUDE 30.413528
 COUNTY Bay STORET # 32020063 LONGITUDE -85.868333
 DATE 5/9/2018 TIME 11:15 am SAMPLING AGENCY FDEP/AEQA
 SITE NAME Little Crooked Creek NBID 907
 FIELD ID/NAME H1CrkdCrk RECEIVING BODY OF WATER Pine Log Creek

RIPARIAN ZONE / STREAM FEATURES

RQ-2018-05-07-70

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☒ 10 ☒ 90 ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐								Landscape Development Intensity Index (LDI) 1.24
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 3.5 m wide 0.2 m/s 0.25 m/s 0.22 m/s m deep 0.5 m deep m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: 18 Right Bank: 718				Hydrologic Modification Score (per FT 3101) 1-2				
High Water Mark: 1 + 0.5 = 1.5 (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 ☐
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SUBSTRATE TYPE

Assessment Tool: ☒ SCI ☒ RPS ☒ LVS☐ LCI ☐ BioRecon

% Coverage	INVERT # Times Sampled	PERI # Times Sampled
Woody Debris (Snags)	8	5
Undercut Banks / Roots	2.6	5
Leaf Packs or Mat	2	5
Aquatic Vegetation		
Rock or Shell Rubble..		
Sand.....	87.4	5
Mud / Muck / Silt		
Other		
Other		

WATER QUALITY

Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Top: Surface	19.4	5.8	8.14	88.6	20		0.5
Mid:							☒ VOB
Bottom:							TOTAL DEPTH 0.5

Meter ID:
Water Odors Normal ☒ Petroleum ☐
 Sewage ☐ Chemical ☐ Other ☐
Water Sample Taken? ☒ Yes ☐ No
Sample Preserved? ☐ Yes ☐ No
 Lot Number: _____ Exp: _____

Algae Sample Taken? ☐ Yes ☒ No
Sample Preserved? ☐ Yes ☐ No
 Lot Number: _____ Exp: _____

Water Surface Oils Normal ☒ Sheen ☐
 Globbs ☐ 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) ☐

AMBIENT FIELD CONDITIONS / NOTES:

☒ The antecedent hydrologic conditions have been met to my best knowledge.

SAMPLING TEAM

J. Paton, A. Vinal, S. Panek, R. Dragon

SIGNATURE:

DATE:

5/9/18

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

SAMPLING AGENCY: FDEP/AEQA		STORET STATION NUMBER: 32020063	DATE (MM/DD/YY): 5/9/18	RECEIVING BODY OF WATER: Pine Log Creek
REMARKS:	COUNTY: Bay	LOCATION: Little Crooked Creek	FIELD ID/NAME: Ltlcrkdcrk	

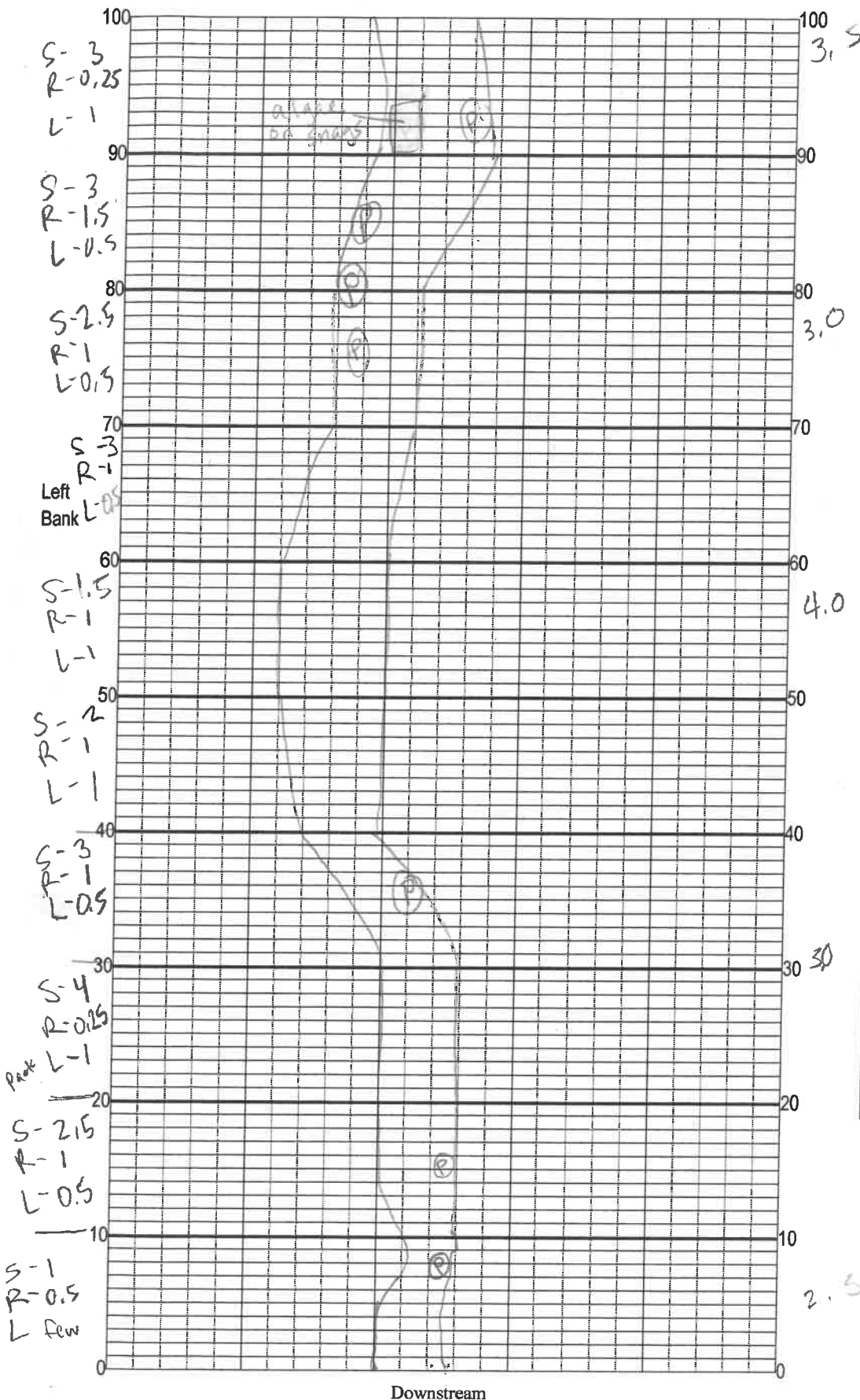
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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 14	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 9	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 16	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 19 Primary Score 58	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 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 20	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank 9 Left Bank 9	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 10 Left Bank 9	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 10 Left Bank 10 Secondary Score 77	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

TOTAL SCORE

Date: 5/9/18	Analyst: A. O'Neal, J. Patronis	Signature: 
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J. Patronis

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



Location: Crooked Little Creek
 Date: 5/9/2018
 Sampler: A O'Neal J Patronis

100 m: Latitude _____	Longitude _____
0 m: Latitude _____	Longitude _____
Substrates: Code key, draw proportionate habitat abundance. %	
☐ S	Snags _____
☐ R	Roots/undercut banks _____
☐ L	Leaf Packs (or mats) _____
☐	Aquatic Macrophytes _____
☐	_____
☐	_____
☐ P	Pools total # observed = <u>7</u> # range expected = _____
Average width <u>3.25</u> m	
Average depth <u>0.5</u> m	
Velocity measured at <u>88</u> meter mark.	
WQ & chemistry taken at <u>0</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:

1-2 per
 12 x width
 3.25
 = 39 m
 2.5
 7
 3-6
 Vel
 5 s/m
 4 s/m
 4.5 s/m

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

RPS ID: 8994

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Little Crooked Creek</u>	County: <u>Bays</u>	Date: <u>5/9/18</u>	Investigators: <u>A. O'Neal, J. Patronis</u>
STORET Station Number: <u>32020063</u>			

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			60	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		93		5	N		96
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
10	1	N			70	1	N		
	2		N			2	N		
	3		N			3	N		
	4		N			4	N		
	5		N	88		5		N	94
	6		N			6		N	
	7		N			7		N	
	8		N			8		N	
	9		N			9		N	
20	1	N			80	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		96		5	N		88
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
30	1	N			90	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		96		5	N		94
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
40	1	N			100	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		94		5	N		96
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		
50	1	N				1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		96		5	N		
	6	N				6	N		
	7	N				7	N		
	8	N				8	N		
	9	N				9	N		

Secchi depth	<u>93</u>
Estimated?	

# points ranked 4-6	<u>3</u>	<u>2</u>
total points assessed	<u>94</u>	
% points ranked 4-6	<u>2</u>	

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	<u>< 2 m²</u>
Habitat Assessment	<u>✓</u>
SCI/Biorecon	<u>✓</u>
Water sample	<u>✓</u>
RQ- <u>2018-05-07-70</u>	

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

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%.

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

Storet Number: 32020063

Signature: David C. Parnes

Comments:

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.

Revision Date: March 1, 2014

SITE NAME: Little Crooked Creek DATE: 5/9/18 TIME 1115 ^(EST) CST DEPTH: 0.1 ft (m) FIELD ID: L41CrkdCrk
 (military)

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
<u>Sarah Panek</u>				X	X
<u>Rachael Dragon</u>			X		
<u>Jessica Patronis</u>		X			
<u>Ashley O'Neal</u>	X				

SAMPLING EQUIPMENT	
☒ Sample Container	☐ Tubing type: _____
☐ Pole	☐ Other: _____
☐ Pump ID#: _____	☐ Other: _____
WATER QUALITY MEASUREMENTS	
Instrument ID: <u>0361481</u>	
COLLECTION MODE	
☒ Wading	☐ Via Boat
☐ Diving	☐ Canoe
☐ From Shore	☐ Electric Motor
☐ Other	☐ Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	☒ TKN ☒ TP ☒ NOx ☒ NH3 ☒ TOC ☐ Total N ☐ Other: _____	<u>5</u> W	☒ Ice ☒ H2SO4		☒ <2	<u>1</u>
Filtered Nutrients	☐ oP ☐ Other: _____	W	☐ Ice ☐ .45 um Filter			
Unpreserved Nutrients	☐ NO2 ☐ NO3 ☐ SO4 ☐ Other: _____	W	☐ Ice			
Physical/Aggregate Properties	☒ TDS ☒ TSS ☐ TS ☒ Turbidity ☒ Alk ☒ Color ☐ Other: <u>Br, Cl, F, SO4</u>	<u>5</u> W	☒ Ice			<u>1</u>
Chlorophyll	☒ CHL-PPTN-W	<u>6</u> W	☒ Ice			<u>1</u>
BOD	☐ BOD-INHB ☐ BOD-UNIN	W	☐ Ice			
Microbiology	MF: ☒ E coli ☐ T Coli ☐ F Coli ☐ Entero ☐ F Strep	<u>5</u> W	☒ Ice			<u>1</u>
Macroinvertebrates	☒ MI-FW-QLDC ☐ MI-FW-QLBR ☐ MI-FW-QNNC ☐ MI-MN-QNNC	<u>5</u> W	☒ Formalin			<u>4</u>
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	<u>5</u> W	☒ HNO3		☒ <2	<u>1</u>
Filtered Metals	☐ W-ICP-F ☐ W-FIAS-F ☐ W-ICPMS-F ☐ W-ICP-Tr-F	W	☐ HNO3 ☐ .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 ☐ H2SO4		☐ <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 ☐ H2SO4 ☐ Ice ☐ MCAA			
Purgeables	☐ W-VOC-MS ☐ W-VOC-MS-A	W	☐ Ice ☐ HCl			
Bioassay	Specify Test: _____	W	☐ Ice			
OTHER	<u>PCR-BACR, GFD, HF183</u>	<u>5</u> W	☒ Other: <u>Ice</u>			<u>1</u>

Notes:

 Contains: 1:1 H2SO4
 Lot No.: SA7341020
 Expires: 12/07/18
 See Safety Data Sheet (SDS)

 Contains: 1:1 H2SO4
 Lot No.: SA7341020
 Expires: 12/07/18
 See Safety Data Sheet (SDS)

 Contains
 1:1
 Nitric Acid
 NA-7341010
 EXP: 12/7/18
 See SDS

E8321-DI, E8321-MS

SW

ICE

1

Use one li (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water depth

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

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

**PRESERVATIVES: 1 ml added unless otherwise noted

***Enter 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

Central Laboratory Submittal Form

Customer: BSSP

Requester: Sarah Panek

Field Report Prepared By: SARAH PANEK

Project ID: SCIREF

Collected By: SARAH PANEK

Sampling Agency: FDEP/AEQD

Location		☐ Comp		Collection (comp begin or grab)		☒ Eastern		Composite end		Bottle Group(s)	
41112 Crooked Creek		☒ Grab		Date 5/9/2018 Time 1115		Central		Date		(See pg 2)	
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☒ mg/L		Total Res. Chlorine		A, B	
411CRKDCRK		Fresh, Surface		8.14		☐ % sat		(mg/L)			
WINSTORET #		Temp (C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
32020063		19.49		5.8		0.1		20			
Latitude		☒ dd		Longitude		☒ dd		Salinity (ppt)		Comments	
30.413528		☐ dms		-85.868333		☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☒ Eastern		Composite end		Bottle Group(s)	
Sandy Creek @ 22		☒ Grab		Date 5/9/2018 Time 1515		Central		Date			
Field ID		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☒ mg/L		Total Res. Chlorine		A, B	
Sandy 22 * Ref		Fresh, Surface		8.22		☐ % sat		(mg/L)			
WINSTORET #		Temp (C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
32030002		21.45		5.94		0.1		34			
Latitude		☒ dd		Longitude		☒ dd		Salinity (ppt)		Comments	
30.141057		☐ dms		-85.407241		☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☐ Eastern		Composite end		Bottle Group(s)	
Field ID		☐ Grab		Date		Central		Date			
WINSTORET #		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L		Total Res. Chlorine			
		(C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
Latitude		☐ dd		Longitude		☐ dd		Salinity (ppt)		Comments	
		☐ dms				☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☐ Eastern		Composite end		Bottle Group(s)	
Field ID		☐ Grab		Date		Central		Date			
WINSTORET #		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L		Total Res. Chlorine			
		(C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
Latitude		☐ dd		Longitude		☐ dd		Salinity (ppt)		Comments	
		☐ dms				☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☐ Eastern		Composite end		Bottle Group(s)	
Field ID		☐ Grab		Date		Central		Date			
WINSTORET #		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L		Total Res. Chlorine			
		(C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
Latitude		☐ dd		Longitude		☐ dd		Salinity (ppt)		Comments	
		☐ dms				☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☐ Eastern		Composite end		Bottle Group(s)	
Field ID		☐ Grab		Date		Central		Date			
WINSTORET #		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L		Total Res. Chlorine			
		(C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
Latitude		☐ dd		Longitude		☐ dd		Salinity (ppt)		Comments	
		☐ dms				☐ dms					
Location		☐ Comp		Collection (comp begin or grab)		☐ Eastern		Composite end		Bottle Group(s)	
Field ID		☐ Grab		Date		Central		Date			
WINSTORET #		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L		Total Res. Chlorine			
		(C)		pH		Sample Depth		Sp. Conductance (umho/cm)			
Latitude		☐ dd		Longitude		☐ dd		Salinity (ppt)		Comments	
		☐ dms				☐ dms					

Relinquished By:	Date/Time	Shipping Method	Number of Coolers Shipped:	Received By:	Date/Time
SARAH PANEK	5/10/18, 905AM	Hand delivered		Tyler R	05/10/18 9:08