

NAFEE REF STREAM

Date: 11-29-16
(mm/dd/yyyy)Latitude: 27.6495 N
(Decimal Degrees)

39 ORG ID: 21FLTPA

Longitude: 82.2943
(Decimal Degrees)

Field ID: LTMAN5FREE (TP11)

County: MANATEE

WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
	X		X	X
X		X		

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Equipment ID		
Collection Method		
☒ Wading	Via Boat	
☐ From Shore	☐ Canoe/Kayak	
☐ Other (note below)	☐ Electric Motor	
	☐ Gasoline Motor	

/ High / Flooded	Matrix: Fresh	Marine / DI				
Yes / No	Tide Falling: Yes / No / NA					
DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
8.9	98	7.4	0.2	0.8	417	19.9
				15"		

Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
N / W-TOC / W-S-A-TP	☒ Ice ☒ H ₂ SO ₄	↓	↓	☒ <2
CP	☐ Ice ☐ HNO ₃	↓	↓	☐ <2
Filtered 0.45 µm Filter	☒ Ice			
	☒ Ice			
	☐ Ice			
DITY / W-CHC / W-COLOR / W-SO ₄ -IC / W-TDS	☒ Ice			
RBIDITY	☐ Ice			
	☐ Formalin			
☐ Entero ☐ QPCR	☐ Ice			
	☐ Ice			
HERB-AA ☐ W-PYR-AA-R	☐ Ice			
HERB-AA ☐ W-GLYPH	☐ Other			

Contains
1:1
Sulfuric Acid-
SA-6168040
EXP: 06/16/17
Warning!
See SDS

Preservative Sticks
(If Available)

Contains
1:1
Sulfuric Acid-
SA-6168040
EXP: 06/16/17
Warning!
See SDS

"J" Quality Flow

RQ-2016-11-28-39

Date: 11/29/16 Field ID

Time:

Little Manatee
Ref. Stream

STORET

TP11



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

SAMPLING AGENCY: <u>FDEP</u>		STORET STATION NUMBER: <u>24010017</u>	DATE (MM/DD/YY): <u>11-29-16</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: <u>MANATEE</u>	LOCATION: <u>LITTLE MANATEE RIVER</u>	FIELD ID/NAME: <u>TPH</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>8</u>	20 19 18 17 16	15 14 13 12 11	10 9 <u>(8)</u> 7 6	5 4 3 2 1
Substrate Availability <u>2</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 <u>(2)</u> 1
Water Velocity <u>19</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 <u>(19)</u> 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>14</u> ----- Primary Score <u>43</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 <u>(14)</u> 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. <u>(20)</u> 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 <u>7</u> Left Bank <u>7</u>	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 <u>(7)</u> 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 <u>(10)</u> 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>9</u> Left Bank <u>9</u> ----- Secondary Score <u>72</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 <u>(9)</u>	>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

115 **TOTAL SCORE**

Date: <u>11-29-16</u>	Analyst: <u>J. ASHTON, S. ERNST</u>	Signature: <u>[Signature]</u>
-----------------------	-------------------------------------	-------------------------------

(Horizontal scale is double vertical scale, draw proportionately).

L

R

0

Snad
g.v

Roots
0.35

Downstream

Leaves
2.5

7 meters wide

REF. 9726900

Date: 11-29-14

Samplers: 1 Asitran

5. FEAST

Substrates: Code key, draw proportionate habitat abundance. %

Snags	1.2
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Roots/undercut banks	0.05
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Leaf Packs (or mats) 0.36

Macrophytes

Total observed 1.61%

Pools Range expected

Velocity measured at _____
meter mark.

WQ & chemistry taken at 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.

1 sec per 1 m	1m/s	sec	m/s
2	0.5	12	0.08
3	0.33	13	0.076
4	0.25	14	0.071
5	0.2	15	0.066
6	0.16	16	0.062
7	0.14	17	0.058
8	0.12	18	0.055
9	0.11	19	0.052
10	0.1	20	0.052
11	0.09	21	0.047
22	0.045	NO	FLOW

Prod. hab	1	2	3	4	5
Sweeps (Maj)	10	7	5	4	3
Sweeps (Min)	10	6	5	4	5

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>LITTLE MANATEE REF SITE</u>					County: <u>MANATEE</u>		Date: <u>11-29-16</u>		Investigators: <u>J. ASHMAN, S. EANST</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	3			60	1	N			
	2	N				2	6			
	3	N				3	4			
	4	N				4	3			
	5	N		24		5	N		0	
	6	3				6	N			
	7	4				7	N			
	8	N				8	3			
	9	N				9	6			
10	1	3			70	1	3			
	2	4				2	6			
	3	N				3	6			
	4	N				4	5			
	5	N		90		5	N		0	
	6	N				6	N			
	7	N				7	4			
	8	N				8	6			
	9	3				9	6			
20	1	3			80	1	X			
	2	3				2	X			
	3	3				3	X			
	4	N				4	X			
	5	6		90		5	N	✓	18	
	6	N				6	N	✓		
	7	N				7	6	✓		
	8	N				8	N	✓		
	9	N				9	4			
30	1	4			90	1	N			
	2	N				2	N			
	3	N				3	N			
	4	4				4	N			
	5	N		60		5	N	✓	79	
	6	N				6	N			
	7	N				7	N			
	8	4				8	N			
	9	6				9	N			
40	1	X			100	1	N			
	2	X				2	N			
	3	X				3	N			
	4	X				4	N			
	5	N		30		5	N		89	
	6	N				6	N			
	7	N				7	N			
	8	N				8	N			
	9	X				9	3			
50	1	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%.					
	2	N								
	3	X								
	4	X								
	5	X		20						
	6	X								
	7	X								
	8	X								
	9	X								

STORET Station Number:
24010017Secchi depth 0.8
Estimated?# points ranked 4-6 20
total points assessed 94
% points ranked 4-6 20

Check/accompanying data collected at same site/date

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

RQ-2016-11-28-59

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

*If you can see the secchi on the bottom, but you cannot see or reach surrounding substrate use "X" and check estimated

DEP-SOP-001/01: Form FD 9000-3 (9/19/12)
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD SHEET

SAMPLE ID _____ ORG ID Z1/PLTPA LATITUDE 27.6495N
 COUNTY MANATEE STORET # 24010017 LONGITUDE 82.2943W
 DATE 11-29-16 TIME 12:20 SAMPLING AGENCY FSLD
 SITE NAME LITTLE MANATEE REF SITE
 FIELD ID/NAME TP11 RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>50</u> Silviculture _____ Field/Pasture <u>20</u> Agricultural <u>20</u> Residential <u>10</u> Commercial _____ Industry _____ Other (Specify) _____								Landscape Development Intensity Index (LDI) _____
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 _____ m wide _____ m/s <u>0.3</u> m/s _____ m/s _____ m deep <u>0.8</u> m deep _____ m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>8m</u> Right Bank: <u>>8m</u>				Hydrologic Modification Score (per FT 3101) <u>3</u>				
High Water Mark: <u>1.75</u> + <u>0.8</u> = <u>2.55</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 % Coverage INVERT PERI # Times # Times Sampled Sampled Woody Debris (Snags) <u>1.2</u> <u>7</u> _____ Undercut Banks / Roots <u>0.05</u> <u>1</u> _____ Leaf Packs or Mat <u>0.36</u> <u>7</u> _____ Aquatic Vegetation _____ Rock or Shell Rubble.. _____ Sand..... <u>5</u> _____ Mud / Muck / Silt _____ Other _____ Other _____			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> <u>19.9</u> <u>7.4</u> <u>8.9</u> <u>98</u> <u>417</u> <u>0.2</u> <u>0.8</u> Mid: _____ Bottom: _____ Meter ID: <u>Lil Jon</u>					
Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐		
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
ABUNDANCE Absent Rare Common Abundant Periphyton: ☐ ☐ ☐ ☒ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) _____ WEATHER CONDITIONS / NOTES: <u>SUNNY, WARM</u> ☐ The antecedent hydrologic conditions have been met to my best knowledge.					

SAMPLING TEAM JUDY ASHTON, SARAH ELNST **SIGNATURE:** Judy Ashton **DATE:** 11-29-16



Environmental Laboratories, Inc.
6601 Southpoint Pkwy., Jacksonville, FL 32216 • Tel: 904.363.9350 • Fax: 904.363.9354 • EEO574
9610 Fitch Plains Ave., Tampa, FL 33619 • Tel: 813.620.9616 • Fax: 813.620.4237 • ENE4589
2106 NW 67th Place, Ste. 7 • Gainesville, FL 32608 • 352.367.1500 • Fax: 352.367.0050 • ENE4250
528 S. North Lake Blvd., Ste. 1016 • Altamonte Springs, FL 32701 • 407.387.1994 • Fax: 407.387.1687 • EEO376

LAB NUMBER:

Page 1 of 1[illegible]

Field Report Prepared By: May Ashton
Sampling Agency: ESD

last revised Apr 7, 2016

Location		☐ Comp	Collection (comp begin or grab)		☒ Grab	Date	Time	☒ Eastern	Composite end	Time	Bottle Group(s)
Field ID	RQ-2016-11-28-39 Date: 11/29/16 Time: Little Manatee Ref. Stream					11/29/2016	12 20	☒ Central	3.9	☒ mg/L Total Res. Chlorine	(See pg 2)
STORET #	STORET										
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab	Date	Time	☐ Eastern	Composite end	Time	Bottle Group(s)
Field ID								☐ Central			
STORET #											
Latitude		☐ dd ☐ dms									
Location			☐ Comp	Collection (comp begin or grab)	☐ Grab						

Group: A	Bottle Type:	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALKALINITY						
	TURBIDITY						
	W-BR-IC						
	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
	CHLSUTE-W						
Group: A	Bottle Type:	QPCR-P-250ML	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	2
	PCR-HF183						
Group: A	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	HNO3	Enter Number of Bottles Sent to Lab	1
	W-ICP						
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						
	W-S-A-TP						
	W-TKN						
	W-TOC						
Group: A	Bottle Type:	BG-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	W-SUC-AA-R						
	W-UHERB-AA						
Group: B	Bottle Type:	PJ-2L	# of Bottles: 4	Preservative:	Formalin	Enter Number of Bottles Sent to Lab	2
	MI-FW-QLDC						
Group: C	Bottle Type:	P-120ML-WC-THI	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	0
	SWD-AEL-FC						

Dropped off RAE L

1 Algal Sample Rank 3-6

1790 LTMANSFREE (TP11)
27.6495N, -82.2943

1790

Packing House Rd

679 679



