



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2016

PAGE ____ OF ____

Check box if data qualified

STORET Station Name: Hart Branch @ 800m DS of Dowden Rd Date: 02/18/2016
(mm/dd/yyyy)

STORET Station ID: G4CE0095 Latitude: 28.421375
(Decimal Degrees)

WBID: 3171E RQ- 2016-02-15-19 ORG ID: 21FLCEN Longitude: -81.2176
(Decimal Degrees)

Receiving Body of Water: Lake Hart Field ID: G4CE0095 County: Orange

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Duplicate Collection	Blank Collection	Sampling Equipment		
Mike Linger									☒ Sample Container	☐ Van Dorn	☐ Pole
Mike Delannan									☐ Carboy	☐ Syringe	
									☐ Dipper	☐ Other	
									Equipment ID		
									Collection Method		
									☒ Wading	Via Boat	
									☐ From Shore	☐ Canoe/Kayak	
									☐ Other (note below)	☐ Electric Motor	
										☐ Gasoline Motor	

Water Level: Dry / Low / Normal / High / Flooded Matrix: Fresh / Marine / DI

Meter ID# Photos: Yes / No NE, E, W Tide Falling: Yes / No / NA

Sample Type: Field Sample / Duplicate / Field Blank / Equipment Blank Equipment ID# 11C / 11E

Time Zone	Time	Total Depth (m)	Sample Depth	Temp (°C)	DO (mg/L)	DO (%SAT)	COND (µmhos/cm)	Salinity (ppt)	pH	Secchi Disk (m)
EST	11:24	0.5	0.3	15.5	7.1	71	94	0.04	5.6	0.5 (is)
CEN										

Biological Samples Collected: None HA SCI LVS RPS LVI Other

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ TKN / TP / NOx / NH3 / TOC / TN ☐ Other	☒ Ice ☒ H ₂ SO ₄	5259020	9/11/16	☒ < 2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO ₃			☐ < 2
Filtered Nutrients	☒ oP ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Enteroc ☐ QPCR	☐ Ice			
Periphyton	☐ ALGAE-ID	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PSCL-TQA ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Contains 1:1 Sulfuric Acid SA-325007 EXP-03/16/16 Warn: tog! See MSDS

Notes: No LVS, < 2m² in construction New development adjacent to Stream

Date: 2-18-2016

Time: 11:24

RQ-2016-02-15-19

G4CE0095

Field ID ↑
STORET ↓



G4CE0095

Signature: Mike Linger Date: 2/18/16

Field Parameters Entered into LIMS: KMW 4/4/16 (Initials/Date) Field Parameters QC in LIMS: 7R 4/6/16 (Initials/Date)

Date Migrated to STORET: 7R 6-1-16 (Initials/Date) Field Sheets Scanned/Saved: 7R 6-1-16 (Initials/Date)

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

SAMPLE ID _____ ORG ID 21 FL CEN LATITUDE 28.4213 ~~N~~ W
COUNTY Orange STORET # G4CE0095 LONGITUDE -81.2176
DATE 2/18/16 TIME 1200 SAMPLING AGENCY FDEP CEROC
SITE NAME Hart Branch @ 800m OS of Dowden Rd
FIELD ID/NAME G4CE0095 RECEIVING BODY OF WATER Lake Hart

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) ☐
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 m wide 0.17 m/s 0.3 m deep		
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>12</u>				Hydrologic Modification Score (per FT 3101) ☐				
High Water Mark: <u>0.4</u> + <u>0.3</u> = <u>0.7</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 Woody Debris (Snags) ☐ Undercut Banks / Roots ☐ Leaf Packs or Mat ☐ Aquatic Vegetation ☐ Rock or Shell Rubble.. ☐ Sand..... ☐ Mud / Muck / Silt ☐ Other ☐ Other ☐ INVERT # Times Sampled PERI # Times Sampled			WATER QUALITY <table border="1"> <thead> <tr> <th></th> <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:</td> <td>0.3</td> <td>15.5</td> <td>5.6</td> <td>7.1</td> <td>71</td> <td>94</td> <td>0.04</td> <td>0.5 (s)</td> </tr> <tr> <td>Mid:</td> <td></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></td> <td></td> </tr> </tbody> </table>										Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	0.3	15.5	5.6	7.1	71	94	0.04	0.5 (s)	Mid:								☒ VOB	Bottom:								
	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)																																							
Top:	0.3	15.5	5.6	7.1	71	94	0.04	0.5 (s)																																							
Mid:								☒ VOB																																							
Bottom:																																															
Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐																																												
Water Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐																																												
Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			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: 70's clear New housing development in construction adjacent to stream No LVS, < 2m² veg ☐ The antecedent hydrologic conditions have been met to my best knowledge.
---	--

SAMPLING TEAM Mike Linger, Mike Drennan **SIGNATURE:** [Signature] **DATE:** 2/18/16

Waterbody: Hart Branch @ 800m DS of	Date: 2/18/16	County: Orange	Storet Number: 64CE0095
Analyst: Mike Ling	↓ Dowden Rd	Signature: [Signature]	
Comments: No LVS are found			

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]

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Hart Branch 800m OS of Darden Rd</u>					County: <u>Orange</u>		Date: <u>2/18/16</u>		Investigators: <u>Mike Linger</u>		
STRET Station Number: <u>64CE0095</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		52	60	1	N		52
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							
10	1	N		44	70	1	N		44
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							
20	1	N		48	80	1	N		40
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							
30	1	N		56	90	1	N		56
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							
40	1	N		60	100	1	N		60
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							
50	1	N		56		1	N		
	2	N							
	3	N							
	4	N							
	5	N							
	6	N							
	7	N							
	8	N							
	9	N							

Secchi depth	<u>0.5</u>
Estimated?	

# points ranked 4-6	<u>0</u>
total points assessed	<u>79</u>
% points ranked 4-6	<u>0</u>

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

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 9000-5 Stream/River Habitat Assessment Field Sheet

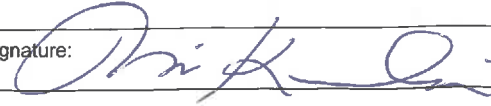
12
36

SAMPLING AGENCY: <u>FDEP - CEROC</u>		STORET STATION NUMBER: <u>G4CE0095</u>	DATE (MM/DD/YY): <u>02/18/16</u>	RECEIVING BODY OF WATER: <u>Lake Hart</u>
REMARKS:	COUNTY: <u>Orange</u>	LOCATION: <u>800m OS at Hart Branch @ Dowden Rd</u>		FIELD ID/NAME: <u>G4CE0095</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>11</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>7</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 2 1
Water Velocity <u>12</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 >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>44</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	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>19</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	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.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>9</u> Left Bank <u>9</u> <u>13</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>5</u> Left Bank <u>9</u> <u>14</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	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.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>8</u> Left Bank <u>9</u> <u>17</u> ----- Secondary Score <u>68</u>	10 9	8 7 6	5 4	3 2 1

112

TOTAL SCORE

Date: <u>2/18/16</u>	Analyst: <u>Mike Lingo</u>	Signature: 
-------------------------	-------------------------------	--

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

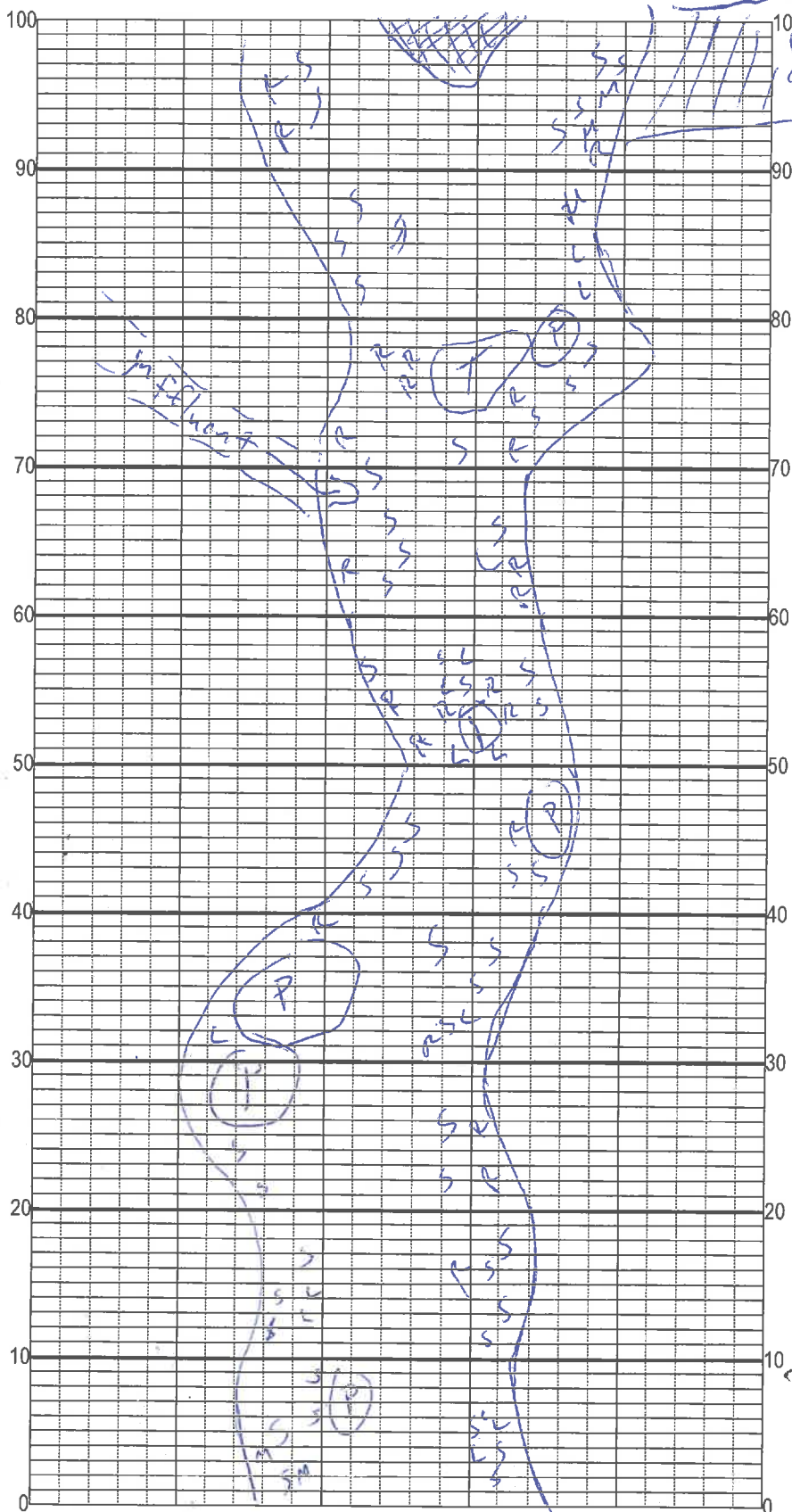
① = Tree
 ② = Pool

Location: Hart Branch @ 800m DS of Dowden Rd.
 Date: 2/18/16
 Sampler: Mike Diennen / Mike Linger

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) _____
☐ M	Aquatic Macrophytes _____
☐	_____
☐	_____
☐ P	Pools total # observed = <u>4</u> # range expected = <u>2-5</u>
Average width <u>3</u> m, <u>16 m/s</u>	
Average depth <u>.3</u> m	
Velocity measured at <u>5</u> meter mark.	
WQ & chemistry taken at <u>100</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:

P = pools
 T = Tree



Downstream

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

62-160.800, F.A.C

$$39.8 \text{ m}^2 / 300 = 13.27\%$$

Revision Date: March 1, 2014