



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE ____ OF ____

February 2016

Data Qualified?
Yes / No

STORET Station Name: Jackson Canal @ 1,000 meters downstream of Control structure Date: 06/20/2016
(mm/dd/yyyy)

STORET Station ID: 26011459 Latitude: 27.8813
(Decimal Degrees)

WBID: 3183F RQ - 2016-06-20-34 ORG ID: 21FLCEN Longitude: -81.1755
(Decimal Degrees)

Receiving Body of Water: _____ Field ID: G4CE005360 County: Osceola

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment				
Mike Linger Leif Boman							☒ 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				
Water Level: Dry / Low / <u>Normal</u> / High / Flooded							Matrix: <u>Fresh</u> / Marine / DI				
Meter ID# <u>11C / AB</u> Photos: Yes / <u>No</u>							Tide Falling: Yes / No / <u>NA</u>				
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)	
EST	12:27	0.3	2.0	4.0	51	6.3	0.05	0.64	105	27.5	
CEN		1.5		3.9	49	6.2	0.05		105	27.4	
Biological Samples Collected: None <u>HA</u> <u>SCI</u> <u>LVS</u> <u>RPS</u> LVI Other _____											
Parameter Suite		Parameter Methods				Preservation	Acid Lot#	Expiration	pH Check		
Preserved Nutrients		☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				☒ Ice ☒ H2SO4	5259020	9/16/16	☒ <2		
Metals		☐ W-ICPMS ☐ W-ICP				☐ Ice ☐ HNO3			☐ <2		
Filtered Nutrients		☒ W-PO4-F ☒ Field Filtered 0.45 um Filter				☒ Ice					
Chlorophyll		☒ CHLSUITE-W				☒ Ice					
BOD		☐ BOD-UNIN				☐ Ice					
Physical/Aggregate (Kit A/C)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CI-IC / W-COLOR / W-SO4-IC / W-TDS				☒ Ice					
Physical/Aggregate (Kit B/D)		☐ Alkalinity / W-F / W-TSS / TURBIDITY				☐ Ice					
Macroinvertebrates		☐ MI-FW-QLDC				☐ Formalin					
Microbiology		☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR				☐ Ice					
Periphyton		☐ ALGAE-ID				☐ Ice					
Pesticides		☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH				☐ Ice ☐ Other					

Contains
1:1
Sulfuric Acid
SA-5259020
EXP: 09/16/16
Warning!
See MSDS

Sticker(s) Here
(table)

Notes:

Jackson Canal @ 1000 meter downstream
of control structure

G4CE0060
Field ID
STORET
26011459

Date: 06/20/2016
RQ-2016-06-20-34

Signature:

Date:

6/20/16

Field Parameters Entered into LIMS: _____ Field Parameters QC in LIMS: _____

Date Migrated to STORET: _____ Field Sheets Scanned/Saved: _____

(Initials/Date)

(Initials/Date)

(Initials/Date)

(Initials/Date)

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

SAMPLE ID 76256 ORG ID 21FLCEN LATITUDE _____
 COUNTY Osceola STORET # 26011457 LONGITUDE _____
 DATE 6/20/16 TIME 12:00 SAMPLING AGENCY FDEP CE-ROC
 SITE NAME Jackson Canal @ 1,000 meters downstream of Central Structure
 FIELD ID/NAME 64CE0060 RECEIVING BODY OF WATER _____

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 15 m wide m/s .25 m/s m/s m deep 2.0 m deep m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) ☐				
High Water Mark: <u>0.3</u> + <u>2.0</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 % Coverage INVERT # Times Sampled PERI # Times Sampled			WATER QUALITY		
Woody Debris (Snags) ☐ ☐ ☐ Undercut Banks / Roots ☐ ☐ ☐ Leaf Packs or Mat ☐ ☐ ☐ Aquatic Vegetation ☐ ☐ ☐ Rock or Shell Rubble ☐ ☐ ☐ Sand ☐ ☐ ☐ Mud / Muck / Silt ☐ ☐ ☐ Other ☐ ☐ ☐ Other ☐ ☐ ☐			Top: <u>0.3</u> <u>27.5</u> <u>6.3</u> <u>4.0</u> <u>51</u> <u>105</u> <u>0.05</u> <u>0.6</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Bottom: <u>1.5</u> <u>27.4</u> <u>6.2</u> <u>3.7</u> <u>49</u> <u>49</u> <u>0.05</u> <u>2.0</u> Meter ID: <u>11C / AB</u>		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☐ ☒ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☒ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			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 ☐		
System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐			AMBIENT FIELD CONDITIONS / NOTES: <u>80's clear</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.		

SAMPLING TEAM

Mike Linger, Leif Boman

SIGNATURE:

[Signature]

DATE:

6/20/16

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site:	1000 meters downstream of Control Structure	County:	Osceola	Date:	6/20/16	Investigators:	Mike Linger		
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

STORET Station Number:
260115 1459

Secchi depth 0.6
Estimated?

points ranked 4-6 23
total points assessed 99
% points ranked 4-6 23

Check accompanying data collected at same site/date.
Algal mat sample /
Linear Veg Survey /
Habitat Assessment /
SCI/Biorecon /
Water sample /
RQ-2016 06-20-34

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

0	1	4			60	1	N		
	2	3				2	3		
	3	2				3	2		
	4	2				4	2		
	5	2		40		5	2		48
	6	2				6	2		
	7	2				7	2		
	8	4				8	5		
	9	4				9	5		
10	1	4			70	1	4		
	2	4				2	4		
	3	2				3	2		
	4	2				4	2		
	5	2		44		5	2		44
	6	2				6	2		
	7	2				7	2		
	8	4				8	4		
	9	3				9	3		
20	1	3			80	1	3		
	2	2				2	2		
	3	2				3	2		
	4	2				4	2		
	5	2		48		5	2		36
	6	2				6	2		
	7	2				7	2		
	8	2				8	4		
	9	2				9	5		
30	1	3			90	1	3		
	2	2				2	3		
	3	2				3	2		
	4	2				4	2		
	5	2		52		5	2		40
	6	2				6	2		
	7	2				7	2		
	8	5				8	5		
	9	5				9	5		
40	1	4			100	1	5		
	2	4				2	4		
	3	2				3	2		
	4	2				4	2		
	5	2		40		5	2		44
	6	2				6	2		
	7	2				7	2		
	8	2				8	4		
	9	2				9	3		
50	1	2							
	2	2							
	3	2							
	4	2							
	5	2		36					
	6	2							
	7	2							
	8	3							
	9	4							

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

Waterbody: Jackson Canal @ 1000 meters downstream	Date: 6/20/16	County: Osceola	Storet Number: 26011459
Analyst: Mike Linger of Control Structure	Signature: [Signature]		

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.

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
<i>Alternanthera philoxeroides</i>	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		<i>Micranthemum glomeratum</i>											
<i>Bacopa caroliniana</i>												<i>Micranthemum umbrosum</i>											
<i>Bacopa monnieri</i>												<i>Myriophyllum aquaticum</i>		✓	✓		✓	✓	✓	✓			
<i>Bidens mitis</i>												<i>Najas guadelupensis</i>											
<i>Boehmeria cylindrica</i>												<i>Nuphar luteum</i>	✓	✓			✓	✓		✓			
<i>Centella asiatica</i>												<i>Orontium aquaticum</i>											
<i>Ceratophyllum demersum</i>								✓	✓	✓		<i>Panicum hemitomon</i>											
<i>Chara</i>												<i>Panicum repens</i>	D/D	D	✓	D/D	D	✓	✓	D			
<i>Cicuta maculata</i>												<i>Panicum rigidulum</i>											
<i>Cladium jamaicense</i>												<i>Pistia stratioides</i>											
<i>Colocasia esculenta</i>												<i>Polygonum glabra densif</i>	✓	✓			✓	✓	✓	✓			
<i>Commelina diffusa</i>												<i>Polygonum hydropiperoides</i>											
<i>Commelina virginica</i>												<i>Polygonum punctatum</i>											
<i>Crinum americanum</i>												<i>Pontedaria cordata</i>											
<i>Diodia virginiana</i>												<i>Potamogeton illinoensis</i>											
<i>Eichhornia crassipes</i>												<i>Ruellia simplex</i>											
<i>Eleocharis (wispy viviparous)</i>												<i>Sacciolepis striata</i>											
<i>Hydrilla verticillata</i>												<i>Sagittaria kurziana</i>											
<i>Hydrocotyle</i>												<i>Sagittaria lancifolia</i>											
<i>Hygrophila polysperma</i>												<i>Sagittaria latifolia</i>											
<i>Hymenocallis</i>												<i>Salvinia minima</i>	✓	✓	✓		✓	✓	✓	✓			
<i>Lachnanthes caroliniana</i>												<i>Samolus parviflora</i>											
<i>Landoltia punctata</i>												<i>Saururus cernuus</i>											
<i>Lemna</i>												<i>Sparganium americanum</i>											
<i>Limnophila sessiflora</i>	✓	✓			✓		✓	✓	✓			<i>Typha</i>											
<i>Ludwigia leptocarpa</i>												<i>Vallisneria americana</i>											
<i>Ludwigia palustris</i>												<i>Zizania aquatica</i>											
<i>Ludwigia peruviana</i>										✓													
<i>Ludwigia repens</i>	✓		✓		✓	✓	✓	✓	✓	✓		<i>Fragaria - limnophila spengia</i>	✓	✓	✓	✓	✓	✓	✓	✓			
<i>Luziola fluitans</i>												<i>Utricularia gibba</i>	✓	✓	✓		✓	✓	✓	✓			
												<i>Salix caroliniana</i>	✓	✓	D	✓	✓	D	D	✓			
												<i>Royal fern - Onoclea regalis</i>		✓			✓						

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

SAMPLING AGENCY: FDEP CE-ROC		STORET STATION NUMBER: 2601459	DATE (MM/DD/YYYY): 06/20/2016	RECEIVING BODY OF WATER: Kissimmee River
REMARKS:	COUNTY: OSCEOLA	LOCATION: JACKSON CANAL @ stream control structure		FIELD ID/NAME: G4CE 0060

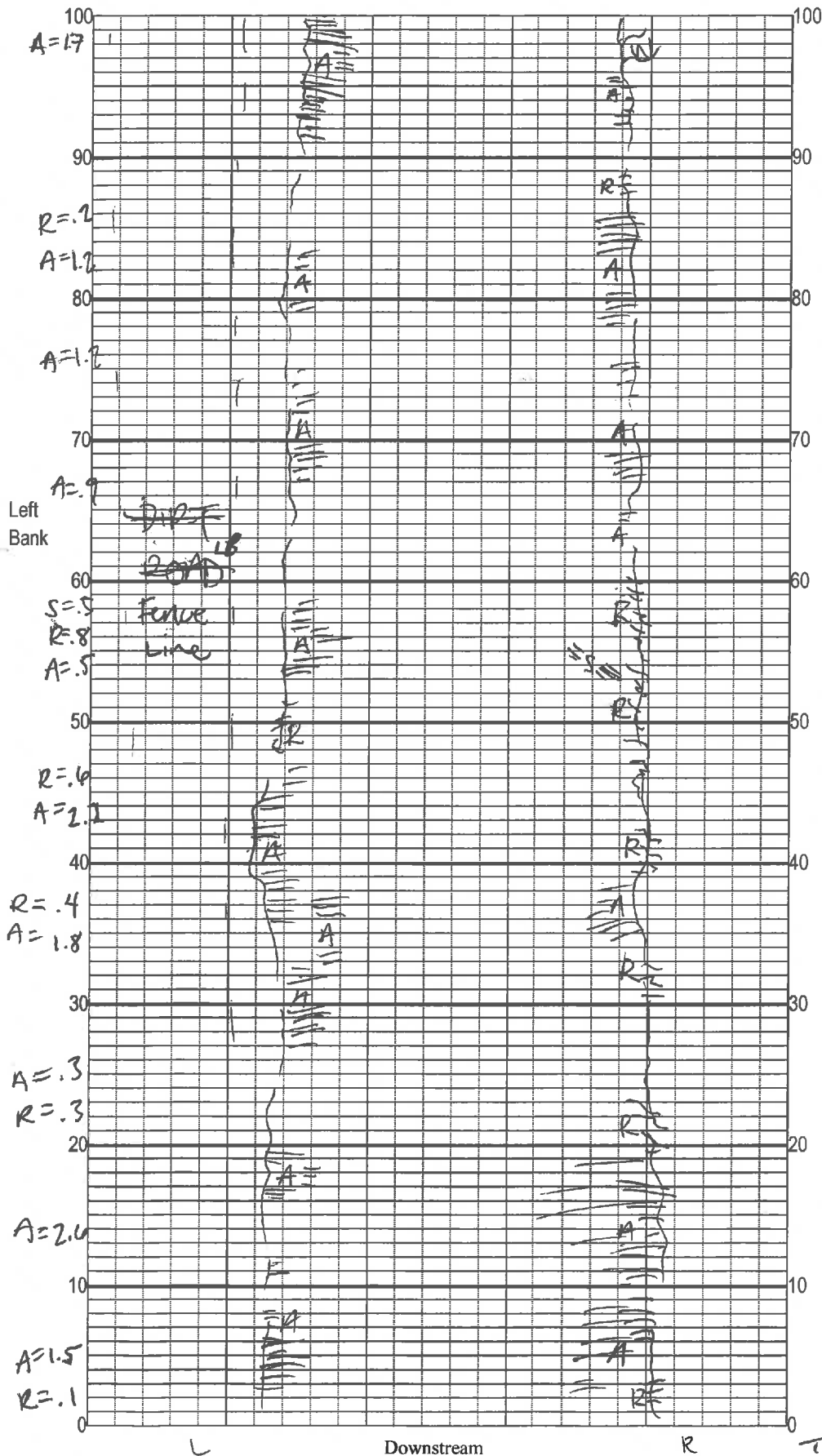
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>6</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>1</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>15</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 <u>15</u> 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>3</u> Primary Score <u>25</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>4</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>7</u> Left Bank <u>6</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>10</u> Left Bank <u>5</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>7</u> Left Bank <u>7</u> Secondary Score <u>46</u>	10 9	8 7 6	5 4	3 2 1

71

TOTAL SCORE

Date: <u>6/20/2016</u>	Analyst: <u>Mike Linger</u> <u>Leif Boman</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Jackson Canal

Date: 06/20/14

Sampler: Mike Linger, Leif Boman

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) <u>0</u>
☐ A	Aquatic Macrophytes _____
☐ W	<u>water entering</u> _____
☐	<u>LB</u> _____
☐ P	Pools total # observed = <u>0</u> # range expected = _____
Average width <u>15</u> m	
Average depth <u>2.0</u> m	
Velocity measured at <u>30</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:

Middle has low visibility. No pools can be observed

TOTAL 4 seconds per

A = 13.9 meter

R = 2.4

S = .5

Revision Date: March 1, 2014

16.3