

LVI

Site Name Lake Center Sample Date 05/15/2019WBID 3174 WIN ID G4CE0163 RQ 2019-05-13-38

	Initial/Date	QC Initial/Date
Water chemistry data to LIMS	LMJ 5/21/19 S/S/19	5/21/19 MKL
Create SBIO station visit	LMJ 5/15/19	n/a
Vascular Entry (add LIMS ID)	LMJ 5/22/19	JK 5/23/19
Lake Observation Sheet Entry	LMJ 5/22/19	JK 5/23/19
Authorize SBIO data	JK 5/23/19	n/a
Scan all sheets to 21FLCEN folder	JK 5/23/19	n/a
LIMS/WIN migration		n/a
File in cabinet		n/a

Comments/notes:



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Lake Center @ Center

Date: 05/15/2019

WIN/ Field ID: G4CE0163

WBID: 3174

Latitude: 28.27879

(mm/dd/yyyy)

County: Osceola

ORG ID: 21FLCEN

Longitude: 81.19118

(Decimal Degrees)

(Decimal Degrees)

Receiving Body of Water: _____

RQ-2019- 05-13-38

Sampling Team Members						Sampling Equipment				
<u>Kristene Taylor</u> <u>Natalie Ayala</u> <u>Terry Riordan</u>						☒ Sample Container	☐ Van Dorn	☐ Pole		
						☐ Carboy	☒ Syringe			
						☐ Dipper	☐ Other			
						Depth Measured with <u>Secchi Disk Line</u> (Meter)				
Equipment ID: <u>Leadfoot</u> <u>Knothead</u> <u>Crusty</u> <u>Bucket</u> <u>Mucky</u> <u>Trap</u>						Collection Method				
						☐ Wading	☐ Canoe/Kayak			
						☐ From Shore	☐ Electric Motor			
						☐ Other	☒ Gasoline Motor			
Water Level: Dry / Pooled / Low / <u>Normal</u> / High / Flooded						Motor ID# <u>Strimp/Trap/Arg</u>		Matrix: <u>Fresh</u> / Marine / DI		
Photos: <u>Yes</u> / No		Flow: No Flow / Intestinal / <u>Flowing</u> / NA		Tide: Rising / Falling / Slack / NA		Tide Times: High — Low —				
Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (umhos/cm)	Temp. (C°)
(EST)	13:25	2.9	0.3	0.4	6.90	87.2	6.06	0.06	131.5	27.4
			2.4		6.34	78.3	6.23	0.06	130.5	26.2
Biological Samples Collected: <u>None</u> HA SCI RPS Algae ID LVS <u>LVI</u> Other:										
SBIO ID Numbers: SBIO-ID: <u>79662</u> HA-ID: <u>15940</u> RPS-ID: _____ Macrophyte-ID: <u>11310</u> LIMS#: <u>2086806</u>										
Parameter Suite		Parameter Methods				Preservation		Lot#	Expiration	pH Check
Preserved Nutrients		☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP				☒ Ice ☒ H2SO4		<u>SA9010030</u>	<u>4/10/20</u>	☒ <2
Metals		☐ W-ICPMS ☐ W-ICP				☐ Ice ☐ HNO3				☐ <2
Filtered Nutrients		☒ W-PO4-F ☒ Field Filtered 0.45 um Filter				☒ Ice		13615055		
Chlorophyll		☒ CHLSUITE-W				☒ Ice				
Physical/Aggregate (Fresh)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CL-IC / W-COLOR / W-SO4-IC / W-TDS				☒ Ice				
Physical/Aggregate (Marine)		☐ Alkalinity / W-F / W-TSS / TURBIDITY				☐ Ice				
Macroinvertebrates		☐ MI-FW-QLDC				☐ Formalin				
Periphyton		☐ ALGAE-ID				☐ Ice				
Microbiology		☐ E Coli ☐ F Coli ☐ Enterococci				☐ Ice				
Molecular		☐ PCR-FILTER ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD				☐ Ice				
Tracers		☐ W-E8321-DI ☐ W-E8321-MS				☐ Ice				
Pesticides		☐ W-PSNP-TQ ☐ W-CT-CL-R ☐ W-E8321-DI ☐ W-PCL-SQ-R ☐ WE8321-MS ☐ W-CARB-AA				☐ Ice ☐ Other				
Phytoplankton		☐ DTY-QN-C ☐ PKD-QN-C				☐ Ice				
Notes: Ramp: 28.275661, -81.184002 <u>LVI event w/ SE. ROC & Tally</u>										
Signature: <u>Kristene Taylor</u>						Date: <u>05/15/2019</u>				
WIN ID / Field ID →						Lake Center @ Center				
						G4CE0163				

LIMS EVENT ID: CENT-DIST-2019-04-29-41

Enter Field Parameters, Verify Station ID in LIMS DMT: LMD 5/15/19

QC Station ID, Field Parameters in LIMS DMT: MKL 5/21/19

Scan/Save Field Sheets JK 5/23/19

Migrate Data to WIN:

Verify Data in WIN:

(Initials/Date)

(Initials/Date)

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

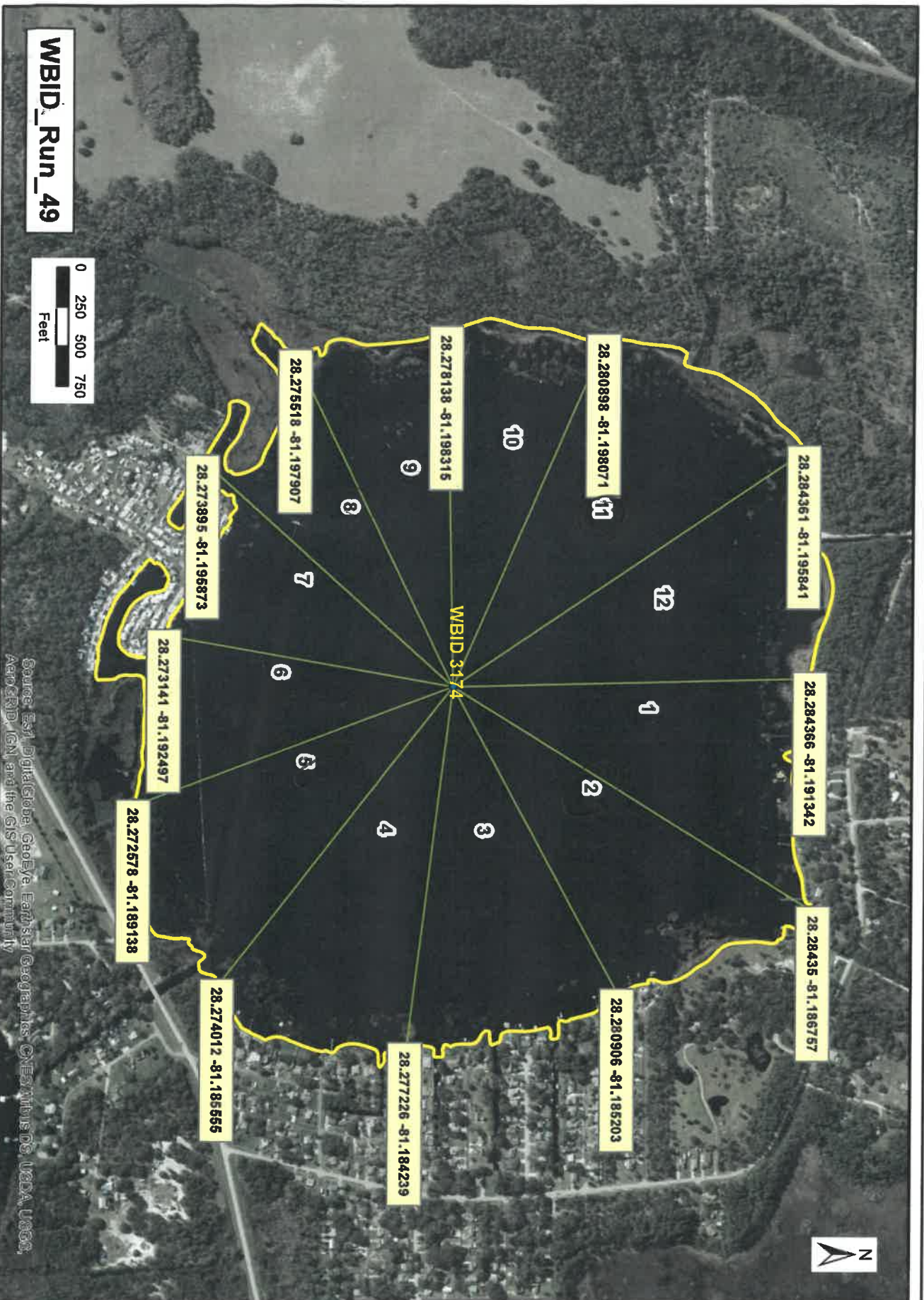
Waterbody: <u>Center Lake</u>		County: <u>Osceola</u>		Date: <u>5/15/19</u>							
Analyst: <u>Kristene Taylor / Natalie Ayala / Terry Rendon</u>		Signature: <u>Terry Rendon</u>		STORET: <u>64CE0163</u>							
Except where noted as "sp." species level identification required. *Genera that may require lab verification* Plants in bold = FLEPPC invasive exotic. It is important to note dominant or co-dominant taxa (by areal extent) for each unit. Use "D" to denote dominant taxon, or "C" for the 2 co-dominant taxa.				Lake units sampled (circle one group): 1, 4, 7, 10 <u>2, 5, 8, 11</u> 3, 6, 9, 12							
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Acer rubrum						Fraxinus					
Alternanthera philoxeroides	/	/	/			Fuirena scirpoides	/				
Amaranthus australis						Gordonia lasianthus	/				
Andropogon sp.	/					Habenaria repens					
Azolla filiculoides (A. caroliniana)				/		Hibiscus coccineus					
Baccharis sp.						Hibiscus grandiflora					
Bacopa caroliniana						Hydrilla verticillata					
Bacopa monnieri						Hydrocotyle sp.					
Bidens alba						Hygrophila polysperma					
Bidens laevis						Hymenocallis sp.					
Bidens mitis						*Hypericum fasciculatum					/
Blechnum serrulatum	/	/	/	/		*Hypericum hypericoides					
Boehmeria cylindrica						*Hypericum myrtifolium					
Brasenia schreberi						Ilex cassine	/	/			
Cabomba caroliniana						Ipomoea aquatica					
Canna						Ipomoea sagittata					
Centella asiatica	/					Itea virginica					
Cephalanthus occidentalis				/		Juncus effusus					
Ceratophyllum demersum						*Juncus marginatus	/				
Chara sp.						*Juncus megacephalus					
Cicuta maculata						Juncus repens					
Cinnamomum camphora						*Juncus scirpoides					
Cladium jamaicense						Lachnanthes caroliniana					
Colocasia esculenta	/	/	/	/		Leersia hexandra					
*Commelina						Landoltia punctata (Spirodela punctata)					
Crinum americanum						Lemna sp.			/	/	
*Cyperus alternifolius (C. involucratus)						Leucothoe racemosa (Eubotrys racemosa)					
Cyperus articulatus						Limnium spongia					
Cyperus haspan						Limnophila sessiliflora					
*Cyperus lecontei						Liquidambar styraciflua					
*Cyperus polystachyos						*Ludwigia arcuata					
*Cyperus odoratus						*Ludwigia grandiflora	/	/	/	/	2
*Cyperus surinamensis						*Ludwigia hexapetala	/	/	/	/	2
Cyrilla racemiflora						*Ludwigia leptocarpa	/	/	/	/	5
Decodon verticillatus						Ludwigia (native)					
Diodia virginiana						*Ludwigia octovalvis					
*Echinochloa crus-galli						*Ludwigia peruviana	/		/		
*Echinochloa muricatum						*Ludwigia repens					
Echinochloa walteri						Ludwigia suffruticosa					
Eclipta prostrata (E. alba)						Luziola fluitans (Hydrochloa carolinensis)	/	/		/	
Eichhornia crassipes	/	/	/	/		Magnolia virginiana	/	/		/	
*Eleocharis						Mayaca fluviatilis					
Eleocharis cellulosa						Melaleuca quinquenervia					
*Eleocharis elongata						Micranthemum glomeratum					
Eleocharis equisetoides						Micranthemum umbrosum					
Eleocharis interstincta						Mikania scandens					
Eleocharis submersed viviparous						Mimosa pigra					
*Eriocaulon compressum						Myrica cerifera	/	/	/		
*Eriocaulon decangulare											
Eupatorium capillifolium				/							

No dominant species in sections: 2, 5, 11

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Site: <u>Lake Center</u>						Date: <u>5/15/19</u>					
SPECIES	2	5	8	11	Collected? (✓)	SPECIES	2	5	8	11	Collected? (✓)
Myriophyllum aquaticum						Salix caroliniana					
*Myriophyllum heterophyllum						Salvinia minima	/	/	/		
*Myriophyllum laxum						Sambucus canadensis					
*Myriophyllum pinnatum						Sapium sebiferum		/			
Myriophyllum spicatum						Saururus cernuus					
*Najas filifolia						Schinus terebinthifolius			/		
*Najas guadalupensis						*Schoenoplectus californicus	/	/		/	(2)
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea						*Schoenoplectus tabernaemontani (Scirpus validus)					
Nitella spp.						Scirpus cubensis (Oxycaryon cubense)	/	/	/		
Nuphar sp.	/	/	/	/		Scirpus cyperinus					
Nymphaea mexicana						*Sesbania					
Nymphaea odorata						Solidago sp.					
Nymphoides aquatica						Sparganium americanum					
Nyssa sylvatica var. biflora	/					Spartina bakeri	/			/	
Orontium aquaticum						Spirodela polyrhiza					
Osmunda cinnamomea						Taxodium sp.	/		/	/	
Osmunda regalis						Thalia geniculata					
Panicum hemitomon	/	/	/	/		Thelypteris interrupta					
Panicum repens	/	/	/	/		Thelypteris palustris					
Paspalidium geminatum	/					Triadenum virginicum					
*Paspalum repens						Typha sp.	/			/	
Paspalum urvillei						Urochloa mutica (Brachiaria mutica)	/		/		
Peltandra sp.						*Utricularia gibba (U. biflora)					
Persea sp.	/					*Utricularia foliosa					
Pennisetum purpureum						*Utricularia inflata					
Phragmites australis						*Utricularia purpurea					
Pinus elliotii				/		*Utricularia radiata					
Pistia stratioides	/		/			*Utricularia resupinata					
Pluchea sp.						Vallisneria americana					
*Polygonum glabrum (densiflorum)						Vitis sp.			/		
Polygonum hirsutum						*Websteria confervoides					
*Polygonum hydropiperoides						Wedelia trilobata (Sphagneticola trilobata)					
*Polygonum punctatum						Wolffiella spp.					
*Polygonum						Woodwardia virginica					
Pontederia cordata	/	/	/	/		Xyris sp.	/			/	
*Potamogeton diversifolius						Zizania aquatica					
*Potamogeton illinoensis						Zizaniopsis milacea					
*Potamogeton pusillus						<u>Campylocarpus</u> <u>Cin?</u>			/		
*Potamogeton pectinatus (Stuckenia pectinatus)											
Proserpinaca pectinata											
*Rhexia	/										
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynchospora nitens											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata			/	/							
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis	/				✓						
Sagittaria lancifolia	/										
Sagittaria latifolia											

LVI Map for , WBID 3174, Center Lake, 2019



HAIP: 15940

TEAM 4

TR
NA
KB

DEP Form FD 9000-6: Lake Habitat Assessment Field Sheet

STORET STATION NUMBER: G4CE0163	DATE (M/D/Y) 05/15/19	LAKE NAME Center		FIELD ID / NAME:	
ECO-REGION:	COUNTY: Osceola	SAMPLING LOCATION/DESCRIPTION: Center		LAKE SIZE: Medium	
PARAMETER	No surface inflow or outflow present, very long water residence time, groundwater seepage dominates ☐	Surface water inflow present, but flow is rare, moderate to long water residence time ☒		Surface water inflow and outflow present (or outflow only), sometimes with visible flow, short water residence time ☐	
HYDROLOGY				Impounded, hydrology of system artificially controlled ☐	
Color	Very clear, uncolored water (benthic sampling appropriate) ☐	Water somewhat tannin stained (benthic sampling appropriate) ☐		Dark, discolored water (water color 20 PCU or higher) ☒	
	Optimal	Suboptimal		Marginal	
Secchi	Secchi >3 m Or VOB	3 2.6 2.2 1.8 1.4		1.0 0.9 0.8 0.7 0.6	
Vegetation Quality	Diverse, expected native vegetation (emergent or submersed), less than 5% nuisance taxa ☐	Mostly expected native plants, but moderate growths (6%-20% of lake) of nuisance macrophytes, or more than 50% of lake covered with plants ☐		Large masses (21%-40%) of nuisance macrophytes (e.g., Hydrilla, hyacinth, cattail, etc.) or algal mats ☐	
Stormwater Inputs	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation ☐	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place ☐		Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place ☐	
Bottom Substrate Quality	Diverse mixture of sand, detritus, with small amounts of CPOM/mud/muck. SAV may be present ☐	Mixture of sand or clay and detritus with higher % CPOM/mud/muck content. SAV may be present ☐		Moderate layer of CPOM/mud/muck, or hardpacked sand only, or moderate algal growth (mats or Chara) on bottom ☐	
Lakeside Adverse Human Alterations	Very few man-made structures, roads, or other disturbance adjacent to lake (<10%) ☐	Moderate disturbance visible (structures, roads or other), 10%-49% lakeside affected ☐		Many structures, roads or other human disturbance visible (50%-70%) lakeside affected ☐	
Upland Buffer Zone	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer ☐	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer ☐		50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer ☐	
Adverse Watershed Land Use	Score the potential effects from adverse human land uses, based on a continuum of amount and type, with least to most adverse as follows: Native vegetation, Silviculture, Pasture or Citrus, Low Density Residential, Row Crops, Commercial, High Density Residential, Urban, Industrial ☐				
TOTAL SCORE	68	COMMENTS:			
ANALYSIS DATE: 5/15/19	ANALYST: Mike Linger	SIGNATURE: Mike Linger			

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: _____ **MACROPHYTE ID:** _____ **LATITUDE:** 28.27875
COUNTY: Osceola **STORET #:** 64CE0163 **LONGITUDE:** -81.19118
DATE: 5/15/19 **TIME:** 1325 **SAMPLING AGENCY:** FDEP CE-ROC
SITE NAME: Lake Center **WBID:** 3174
FIELD ID/NAME: _____ **LAKE SIZE:** med **RQ:** 2019-05-13-38

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS) :										LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)											
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)														
<u>55</u>				<u>45</u>																	
Local Watershed Erosion (select one) : ☐ None ☒ Slight ☐ Moderate ☐ Heavy										Artificially Impounded											
Local Watershed NPS Pollution : ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy										☐ Yes ☒ No											
STORMWATER INPUTS		Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation			Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place			Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place			Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place										
<u>9</u>		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
LAKESIDE ALTERATIONS		Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected)			Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected)			Many structures, roads or other human disturbance visible (50%-70% lakeside affected)			Highly developed or disturbed (>70% of lakeside affected)										
<u>11</u>		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
BUFFER ZONE		Expected native vegetation between uplands and littoral zone; greater than 90% of shore with >18 m buffer			89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer			50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer			< 29% of shoreline with >18m buffer										
<u>9</u>		20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water: Nutrient Sample Taken? ☒ Yes ☐ No Preserved? ☐ Yes ☐ pH<2 ☐ No Color Sample Taken? ☒ Yes ☐ No Lot # _____ Exp. Date: _____ Alkalinity Sample Taken? ☒ Yes ☐ No Water Level ☐ Low ☒ Normal ☐ High										Water Odors: ☒ Normal ☐ Sewage ☐ Petroleum ☐ Other _____ Water Surface Oils: ☒ None ☐ Sheen/Slick ☐ Glob ☐ Other _____									
Meter Readings: Top: <u>0.3</u> <u>27.4</u> <u>6.06</u> <u>6.90</u> <u>87.2</u> <u>131.5</u> <u>0.06</u> Mid-Depth: _____ Bottom: <u>2.4</u> <u>26.2</u> <u>6.23</u> <u>6.34</u> <u>78.3</u> <u>130.5</u> <u>0.06</u>										Clarity: ☒ Clear ☐ Opaque ☐ Turbid ☐ Slightly Turbid Color: ☐ Clear ☒ Tannic ☐ Green									
Meter ID: <u>Strap Trap 216 Arya</u>										SECCHI (M) <u>0.4</u> Total Station Depth (M) <u>2.9</u> VOB ☐									
Sediment Type: (may check more than one) ☒ Sandy ☐ Organic fibrous (peaty, CPOM) ☐ Vegetated ☐ Sand/Silt ☐ Organic smooth (muck) ☐ Other (Specify): _____										Sediment Odors: ☒ Normal ☒ Other (Specify): _____ ☐ Anaerobic									
Biological Communities: LVI Conducted? ☒ Yes ☐ No Phytoplankton Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☒ No Lot #: _____ Exp Date: _____ Algal Bloom/Algal ID Sample Taken? Yes ☐ No ☒ Active Vegetation Mgmt? ☐ Yes ☐ No ☒ Don't Know										Abundance: Absent Rare Common Abundant Periphyton ☐ ☒ ☐ ☐ Nuisance Plants ☐ ☐ ☒ ☐ Submersed Plants ☐ ☒ ☒ ☐ Exotic Apple Snails ☐ ☒ ☐ ☐									
Additional Notes:																			
Weather Conditions : <u>80's clear</u>																			
SAMPLING TEAM: <u>Kristene Taylor/Natalie Ayala/Terry Riordan</u>										SIGNATURE: <u>[Signature]</u>					DATE: <u>5/15/19</u>				