RQ-2019-06-10-30 **Survey: Reference Lakes**

Field Personnel processing steps

☑ New Field IDs created (when using a new station) Date: 05/06/2019 initials: MK ☐ NA

☑ Create entry in SMPStationCreationFile if new station is used

\\Fldep1\wqap\NW ROC\TMDL\WIN_Station Creation

☑ Date sampled Date: 06/12/2019 initials: FB

☑ Update MAT Date: 06/13/2019 initials: FB

☑ Update "SMP Tracker" Date: N/A initials: _____

☑ Photos put into archive Date: 06/13/2019 initials: FB ☐ NA

☑ RQ Sheet – from LIMS (display/print request)

☑ Field Sheets initialed/dated @ "Scan/Save Field Sheets" then scanned (with calibration logs) and saved into:

Scans_ToBeProcessed Date: 06/24/2019 initials: FB

☑ Update "Data Tracker"

\\publicfiles\pubfds\DEAR\WQAPmonitoring\StrategicMonitoring\2019\21FLPNS

Ready for folder system (top)

LIMS processing (to be completed by LIMS data personnel) (MC)

☐ Field parameters entered into LIMS Date: _____ initials: _____

☐ Digital RQ packet put into

SMP 2019/Data/Scanned Field Sheets Date: _____ initials: _____

☐ Digital field Sheets put into archive Date: _____ initials: _____

☐ Date submitted for QA/QC Date: _____ initials: _____

☐ Update "Data Tracker"

Database processing (Cheryl)

☐ Field parameters QA/QC in LIMS Date: _____ initials: _____

☐ Lab results put into archive (CB) Date: _____ initials: _____

☐ Data migrated to WINS Date: _____ initials: _____

☐ Update "Data Tracker"

Notes: Not SMP, this is a Reference Lakes project sample. Pics, YSI Log, datasheets are saved in REF LAKE folder.

RQ-2019-06-10-30

Date of Request: 20-MAY-2019
Created By: KING_M On: 20-MAY-2019
Modified By: JASROTIA_P On: 22-MAY-2019
Customer: NW-DIST
Project: LAKESREF
Division: Division of Environmental Assessment and Restoration
District: NW ROC
Sampling Event: Merial Lake

Send Coolers To:

Phone: 850-595-0605
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Michael King

Send Final Report To:

160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

Program Module Number:
Priority: 3
Event Status: R
Criminal Investigation: NO
Chemistry Request Reviewed By: WATTS_J On: 22-MAY-2019
Biology Request Reviewed By: JASROTIA_P On: 22-MAY-2019
Sampling Kit Required: YES Ship on: 31-MAY-2019
Sampling Kit Shipped: YES On: 29-MAY-2019
Sampling Kit Packed By: KLUG_K
Preservatives Needed: NO
Date to Receive Samples: 10-JUN-2019
Received By: REAVES_S On: 13-JUN-2019

Report Type: Final Only
FTP Data: NO
QC Report: YES
Date Log: NO
Authorization Log: NO

Comments: Group A: Nutrients, Metals, Phytoplankton

Packing Notes:

Bottle Group A (Water) With 1 Samples:

Bottle Type: P-1L Number of Bottles: 1 Preserved With: ICE

ALKALINITY Total Alkalinity	Template: DEFAULT	(SM 2320 B-97) Alkalinity in aqueous matrices as mg CaCO3/L
TURBIDITY Turbidity	Template: DEFAULT	(EPA 180.1 Rev. 2.0) Turbidity in aqueous matrices
W-CL-IC Chloride	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Chloride in aqueous matrices
W-COLOR Color (true)	Template: DEFAULT	(SM 2120 B) True Color measured at 450 nm
W-F Fluoride	Template: DEFAULT	(SM 4500 F-C-97) Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
W-SO4-IC Sulfate	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Sulfate in aqueous matrices
W-TDS TDS	Template: DEFAULT	(SM 2540 C-97) Total Dissolved Solids in aqueous matrices
W-TSS TSS	Template: DEFAULT	(SM 2540 D-97) Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample

Bottle Type: BP-1L Number of Bottles: 1 Preserved With: ICE

CHLSUITE-W Chlorophyll-a, Corrected Chlorophyll-a, Uncorrected Phaeophytin-a	Template: DEFAULT	(SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry

Bottle Type: BP-1L Number of Bottles: 1 Preserved With: Lugols

Bottle Group A (Water) With 1 Samples:

Bottle Type: BP-1L Number of Bottles: 1 Preserved With: Lugols

DTY-QN-C Template: DEFAULT (SOP-AB05_1) No. of diatom taxa of quantitative phytoplankton sample.
*Phytoplankton-Quantitative-#Diatom Taxa

PKD-QN-C Template: DEFAULT (SOP-AB05) No. of wet taxa of quantitative phytoplankton sample.
*Phytoplankton-Quantitative-# Wet Taxa

Bottle Type: P-500ML Number of Bottles: 1 Preserved With: HNO3

W-ICP Template: (EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects

- Barium
- Calcium
- Iron
- Magnesium
- Potassium
- Sodium
- Zinc

W-ICPMS Template: (EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects

- *Boron
- Aluminum
- Antimony
- Arsenic
- Cadmium
- Chromium
- Copper
- Lead
- Nickel
- Selenium
- Silver
- Thallium

Bottle Type: P-500ML Number of Bottles: 1 Preserved With: ICE And H2SO4

W-NH3 Template: DEFAULT (EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L
Ammonia-N

W-NO2NO3 Template: DEFAULT (EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L
NO2NO3-N

W-S-A-TP Template: DEFAULT (EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
Total-P

W-TKN Template: DEFAULT (EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
Kjeldahl Nitrogen

W-TOC Template: DEFAULT (SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices
Organic Carbon

Bottle Type: P-125ML Number of Bottles: 1 Preserved With: FILTER-ICE

W-PO4-F Template: DEFAULT (EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
O-Phosphate-P

* - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

CALIBRATION AND VERIFICATION LOG (FDEP SOP FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there are qualified data on this page.

Meter ID: 154179 RQ- 2019-06-10-30 Project: Ref Lakes

Notes: (1) Always wait for meter to stabilize before recording any readings.
(2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
(3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 1/11/19

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.											P/F	L/F
ICV											P/F	L/F
CCV	J. Phillips	6/12/19	0720	25.1	763.5	8.248	8.25	99.3	—	—	P/F	L/F
CCV	J. Phillips	6/12/19	1520	25.4	762.5	8.203	8.19	99.6	—	—	P/F	L/F

DO Acceptance criteria from Table ± 0.3 mg/L. **Rapid-Pulse Sensors:** DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.
Optical: DO gain range 0.85 to 1.15 (Pro DSS 0.75 to 1.50); DO charge N/A. **Steady-state & Galvanic Sensors:** DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	J. Phillips	6/12/19	0722	1901164	1/2020	1000	1000	P/F	L/F
ICV	↓	↓	0724	1904051	4/2020	100	103	P/F	L/F
CCV	J. Phillips	6/12/19	1522	1904051	4/2020	100	102	P/F	L/F
CCV								P/F	L/F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	J. Phillips	6/12/19	0726	2811803	10/2020	7.	24.5	7.0	-60.0	P/F	L/F
Calibr.	↓	↓	0728	2902818	1/2021	4.	24.7	4.0	121.6	P/F	L/F
Calibr.	↓	↓	0730	4904E09	9/2020	10.	24.4	10.0	-227.9	P/F	L/F
ICV	↓	↓	0732	4904E09	9/2020	10.0	24.4	10.0	—	P/F	L/F
CCV	J. Phillips	6/12/19	1524	2902818	1/2021	4.0	23.9	4.2	—	P/F	L/F
CCV										P/F	L/F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50; mV pH 4 Range +180 ± 50; mV pH 10 Range -180 ± 50;
If mV are recorded: slope from 7 to 10 167.9, slope from 4 to 7 181.6 (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? (YES) / NO / NA (not surf. water project)
If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 1/11/19
If NO, what will be used? (circle one) **Secchi Disk Line / Sonar** Unique ID: _____ Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	J. Phillips	6/12/19	0734	0.00	0.00	P/F	L/F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria ± 5 % or ± 0.05m, whichever is greater.

COMMENTS:

Site Name Merial Lake, Center

Date: 06/12/2019

Field ID G3NW0201 Storet G3NW0201

Project: Reference Lakes

Visit ID 79810

RQ: 2019-06-10-30

VPDB ID 11389

LIMS ID: 2095096

HA ID 16957

WBID: 966

☑ LVI

☑ Sample Site Created in SBIO

☑ Phys/Chem entered in SBIO

☑ HA entered in SBIO Initial FB 6/13/19 ☑ Date and Initial QA: 6/24/19 JL

☐ RPS entered in SBIO Initial _____ ☐ Date and Initial QA: _____

☑ LVI entered in SBIO Initial FB 6/20/2019 ☑ Date and Initial QA: 6/24/19 JL

☑ Plants getting verified Date submitted: In House

☑ Plants verified Date returned: FButen

☑ VPDB authorized in SBIO ☑ Date and Initial: 6/24/2019

☑ VPDB score: LVI = 83

☑ If SMP, scanned into database

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified? Yes / (No)

WIN Station Name: Merial Lake, Center **Date:** 06/12/2019 (mm/dd/yyyy)

WIN/ Field ID: G3NW0201 **WBID:** FB ~~517~~ 966 **Latitude:** 30.38873

County: Bay **ORG ID:** 21FLPNS **Longitude:** FB ~~-86.36765~~ -85.67649 (Decimal Degrees)

Receiving Body of Water: St. Andrew's Bay **RQ-2019-** 06-10-30

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Frank Butera	X	X	X	X	X
Jimmy Pitts	X		X		

Sampling Equipment
- [x] Sample Container [ ] Van Dorn [ ] Pole
- [ ] Carboy [x] Syringe
- [ ] Dipper [ ] Other
- Depth Measured with YSI
- Equipment ID 15-4E 1549179

Collection Method
- [ ] Wading [x] Canoe/Kayak
- [ ] From Shore [x] Electric Motor
- [ ] Other [ ] Gasoline Motor

Water Level: Dry/ Pooled/ Low / Normal (High) Flooded **Meter ID#** 154179 **Matrix:** (Fresh) / Marine / DI

Photos: (Yes) / No **Flow:** No Flow / Intestital / Flowing / 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 (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
EST	12:15	6.8	0.3	3.0	8.12	106.3	7.04	0.01	17.0	29.6
(CEN)	12:20		6.3		0.55	6.3	5.23	0.01	20.3	23.7

Biological Samples Collected: None (HA) SCI RPS Algae ID LVS (LVI) Other:

SBIO ID Numbers: SBIO-ID: 79810 HA-ID: 16057 RPS-ID: N/A Macrophyte-ID: 11389 LIMS#: 2095096

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	[x] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[x] Ice [x] H_2SO_4	SA8344070	12/10/2019	[x] <2
Metals	[x] W-ICPMS [x] W-ICP	[x] Ice [x] HNO_3	NA9099030	04/09/2020	[x] <2
Filtered Nutrients	[x] W-PO4-F [x] Field Filtered 0.45 µm Filter	[x] Ice	16570048		
Chlorophyll	[x] CHLSUITE-W	[x] Ice			
Physical/Aggregate (Fresh)	[x] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[x] Ice			
Physical/Aggregate (Marine)	[ ] Alkalinity / W-BR-IC / 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			
Phytoplankton	[ ] DTY-QN-C [ ] PKD-QN-C	[ ] Ice			

Place Preservative Sticker(s) Here (If Available)

Notes: 30-23-19.533
85-41-35.355

Field/WIN ID

Location:
Merial Lake, Center

G3NW0201

Signature: Frank Butera **Date:** 06/12/2019

LIMS EVENT ID: _____ WIN Import ID: _____

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: _____ (Initials/Date)

Scan/Save Field Sheets FB/06-20-2019 (Initials/Date) Migrate Data to WIN: _____ (Initials/Date) Verify Data In WIN: _____ (Initials/Date)

DEP FORM FD 9000-31: LAKE OBSERVATION FIELD SHEET

SAMPLE ID: 79816 MACROPHYTE ID: ____ LATITUDE: N 30.36765

COUNTY: Bay (Vicksburg) STORET #: G3NW0201 LONGITUDE: ~~W-85.36765~~ W. -85.67649

DATE: 06/12/2019 TIME: 10:15 SAMPLING AGENCY: FL DEP - NWROC

SITE NAME: ~~Z1-LL-13001 (Andrew's Lake)~~ Merial Lake Center WBID: 966

FIELD ID/NAME: ~~Z1-LL-13001~~ G3NW0201 LAKE SIZE: 225 RQ: 2019-06-10-30

LIMS 2095096

WATERSHED / LAKESIDE FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category – from GIS):

Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
✓	✓			✓			

LANDSCAPE DEVELOPMENT INTENSITY (100 m buffer)

LDI: N/A

Land Use Source & Year:

Local Watershed Erosion (select one): [x] None [ ] Slight [ ] Moderate [ ] Heavy

Local Watershed NPS Pollution: [x] No evidence [ ] Slight [ ] Moderate [ ] Heavy

Artificially Impounded [ ] Yes [x] No

STORMWATER INPUTS: 13	Stormwater enters system via sheet flow over non-cultivated and/or natural vegetation (20 19 18 17 16)	Some direct stormwater inputs (ditches, pipes, cultivated vegetation < 10%) but good BMPs in place (15 14 (13) 12 11)	Moderate direct inputs of stormwater (ditches, pipes, cultivated vegetation 11%-50%) but few BMPs in place (10 9 8 7 6)	Much direct input of stormwater (ditches, pipes, cultivated vegetation > 51%) and no or ineffective BMPs in place (5 4 3 2 1)
LAKESIDE ALTERATIONS: ~~13~~ 16	Very few man-made structures, roads, or other disturbance adjacent to lake (<10% lakeside affected) (20 19 18 17 (16))	Moderate disturbance visible - structures, roads or other (10%-49% lakeside affected) (15 14 13 12 11)	Many structures, roads or other human disturbance visible (50%-70% lakeside affected) (10 9 8 7 6)	Highly developed or disturbed (>70% of lakeside affected) (5 4 3 2 1)
BUFFER ZONE: 16	Expected native vegetation between uplands and littoral zone, greater than 90% of shore with >18 m buffer (20 19 18 17 (16))	89%-51% of shoreline with >18m buffer or >75% with 10m to 18m buffer (15 14 13 12 11)	50%-30% of shoreline with >18m buffer or 50%-74% with 10m to 18m buffer (10 9 8 7 6)	< 29% of shoreline with >18m buffer (5 4 3 2 1)

WATER / SUBSTRATE / BIOLOGICAL: SAMPLES AND OBSERVATIONS

Water:

Nutrient Sample Taken? [x] Yes [ ] No Preserved? [x] Yes [x] pH<2 [ ] No

Color Sample Taken? [x] Yes [ ] No Lot # ____ Exp. Date: ____

Alkalinity Sample Taken? [x] Yes [ ] No

Water Level [ ] Low [ ] Normal [x] High

Water Odors: [x] Normal [ ] Sewage [ ] Petroleum [ ] Other ____

Water Surface Oils: [x] None [ ] Sheen/Slick [ ] Glob [ ] Other ____

Meter Readings:

	Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat. (%)	Cond. (UMHO/CM)	Salinity (PPT)
Top:	0.3	29.6	7.04	8.12	106.3	17.0	0.01
Mid-Depth:							
Bottom:	6.3	23.7	5.23	0.55	6.3	20.3	0.01

Meter ID: 154179

Clarity: [x] Clear [ ] Opaque [ ] Turbid [ ] Slightly Turbid

Color: [x] Clear [ ] Tannic ~~[ ] Green~~ FB

SECCHI (M): 3.0

VOB [ ]

Total Station Depth (M): 6.8

Sediment Type: (may check more than one) Sample Taken? [ ] Yes [x] No

[ ] Sandy [ ] Organic fibrous (peaty, CPOM) [x] Vegetated

[x] Sand/Silt [x] Organic smooth (muck) [ ] Other (Specify): ____

Sediment Odors: [x] Normal [ ] Anaerobic [ ] Other (Specify): ____

Biological Communities:

LVI Conducted? [x] Yes [ ] No

Phytoplankton Sample Taken? [x] Yes [ ] No

Sample Preserved? [ ] Yes [x] 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: Previous Survey @ sheet 3621 by R. Fry [illegible] J. [illegible] 2005

Weather Conditions: Sunny w/clouds - Upper 80's, low 90's.

SAMPLING TEAM: Frank Butera, Jimmy Pitts SIGNATURE: [signature] DATE: 6/12/19

STATE OF FLORIDA, DEPARTMENT OF ENVIRONMENTAL PROTECTION

Lake Habitat Assessment Field Sheet

STORET STATION NUMBER: G3NW0201	DATE (M/D/Y) 6/12/2019	LAKE NAME Merial Lake, Center	FIELD ID / NAME: G3NW0201
ECO-REGION: WBID 966	COUNTY: Bay	SAMPLING LOCATION/DESCRIPTION: Merial Lake, Center	LAKE SIZE: 225

PARAMETER	Optimal	Suboptimal	Marginal	Poor
Hydrology	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 ☐	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) ☐	Visibility extremely reduced due to high color ☐
Secchi 16	Secchi >3 m / Secchi(m): Or VOB: 20 19 18 17 (16)	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Vegetation Quality 18	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	Lake choked (>40%) with nuisance macrophytes (duck-weed, hyacinth, etc.) or algal mats, or few plants present at all (e.g., plants removed)
	20 19 18 17 16	15 14 (13) 12 11	10 9 8 7 6	5 4 3 2 1
Stormwater Inputs 13	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
	20 19 18 17 16	15 14 (13) 12 11	10 9 8 7 6	5 4 3 2 1
Bottom Substrate Quality 18	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	Thick deposits of CPOM, or fine detritus and anaerobic muck/mud/silt, or algal growth or nuisance plants (Hydrilla) cover bottom
	20 19 (18) 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Lakeside Adverse Human Alternations 16	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)	Highly developed or disturbed (>70% of lakeside affected)
	20 19 18 17 (16)	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Upland Buffer Zone 6	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
	20 19 18 17 (16)	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Adverse Watershed Land Use 12	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 (Sand mine, Storage Tank Contam.)			
	20 19 18 17 16	15 14 13 (12) 11	10 9 8 7 6	5 4 3 2 1

TOTAL SCORE: 109

COMMENTS: Sand mine, Storage Tank Contam; Closed Waste Clean Up, Trucking - Harvard Problem / Compliance/Enforcement

ANALYSIS DATE: 6/12/19 ANALYST: F. Butera SIGNATURE: F. Butera

SBIO ID: 79810 H.A. ID: 16057

DEP FORM FD 9000-27 LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Merial Lake, Center	County: Bay (Vicksburg)	Date: 6/12/19
Analyst: F. Butera	Signature: F Butera	STORET: G3NW0201

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 | 2, 5, 8, 11 | **3, 6, 9, 12**

SBIO ID 79816

SPECIES	3	6	9	12	Collected? (√)
Acer rubrum			1		
Alternanthera philoxeroides					
Andropogon sp.					
Azolla filiculoides (A. caroliniana)					
Baccharis sp.					
Bacopa caroliniana	1	1	1		
Bacopa monnieri					
Bidens laevis					
Bidens mitis					
Blechnum serrulatum					
Boehmeria cylindrica					
Brasenia schreberi					
Cabomba caroliniana					
Casuarina equisitifolia					
Centella asiatica					
Cephalanthus occidentalis			1	1	
Ceratophyllum demersum					
Chara sp.					
Cladium jamaicense					
Cliftonia monophylla	1			1	✓
Colocasia esculenta					
*Commelina					
Crinum americanum					
***Cyperus alternifolius** (C. involucratus)					
Cyperus articulatus					
Cyperus haspan					
*Cyperus lecontei					
*Cyperus polystachyos					
*Cyperus odoratus					
*Cyperus surinamensis					
Cyrilla racemiflora			1		
Decodon verticillatus					
Diodia virginiana					
*Echinochloa crus-galli					
*Echinochloa muricatum					
Echinochloa walteri					
Eclipta prostrata (E. alba)					
Egeria densa					
Eichhornia crassipes					
*Eleocharis baldwinii					
*Eleocharis					
Eleocharis cellulosa					
Eleocharis equisetoides					
Eleocharis interstincta					
*Eriocaulon compressum					
*Eriocaulon decangulare					
Eupatorium capillifolium					
*Fuirena					
Fuirena scirpoidea	1	1	1	1	✓
Gordonia lasianthus					

Macro ID _____

SPECIES	3	6	9	12	Collected? (√)
Habenaria repens					
Hydrilla verticillata					
Hydrocotyle sp.					
Hygrophila polysperma					
*Hypericum fasciculatum					
*Hypericum hypericoides					
*Hypericum myrtifolium					
Ilex ~~cassine~~ myrtifolia	1			1	✓ Lab Verify
Ipomoea aquatica					
Ipomoea sagittata					
Itea virginica					
Juncus effusus	1	1	1	1	
*Juncus marginatus					
*Juncus megacephalus					
Juncus repens					
*Juncus scirpoides					
Lachnanthes caroliniana					
Leersia hexandra	1	1	1	1	
Landoltia punctata (Spiro. punctata)					
Lemna sp.					
Leucothoe racemosa (E. racemosa)					
Limnobium spongia					
Limnophila sessiliflora					
Liquidamber styraciflua					
*Ludwigia arcuata					
*Ludwigia leptocarpa					
*Ludwigia linearis					
*Ludwigia octovalvis					
***Ludwigia peruviana**					
*Ludwigia repens					
*Ludwigia					
Luziola fluitans (H. carolinensis)					
Lyonia lucida					
Magnolia virginiana					
Mayaca fluviatilis					
Melaleuca quinquenervia					
Micranthemum glomeratum					
Micranthemum umbrosum					
Mikania scandens					
Mimosa pigra					
Myrica cerifera					
Hypericum lisso	1	1	1	C	✓
~~Spatella floridana~~					
Smilax laurifolia		1		1	

LIMS: 2095096

Rec. 2019-06-10-30

FORM FD 9000-27: LAKE VEGETATION INDEX FIELD SHEET

Waterbody: Merial Lake, Center Storet: G3NW0201 Date: 6/12/2019 SBIO ID 79810 Macro ID

SBIO ID: 79810 SPECIES	3	6	9	12	Collected? (√)	SPECIES Macro ID	3	6	9	12	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					
*Najas minor						*Schoenoplectus pungens					
Nelumbo lutea						*Schoenoplectus tabernaemontani					
Nitella spp.						Scirpus cubensis (Oxycaryon cubense)					
Nuphar sp.						Scirpus cyperinus					
Nymphaea odorata	1	1	1			*Sesbania					
Nymphoides aquatica						Solidago sp.					
Nyssa sylvatica var. biflora						Sparganium americanum					
Orontium aquaticum						Spartina bakeri					
Osmunda cinnamomea						Spirodela polyrhiza					
Osmunda regalis						Taxodium sp.					
Panicum hemitomon						Thalia geniculata					
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 floridana					D C C 1
Pennisetum purpureum						*Utricularia foliosa					
Phragmites australis						*Utricularia inflata					
Pinus elliottii		1	1			*Utricularia purpurea					
Pistia stratioides						*Utricularia cornuta					
Pluchea sp.						*Utricularia radiata					
*Polygonum glabrum (densiflorum)						Vallisneria americana					
*Polygonum hydropiperoides						*Websteria confervoides					
*Polygonum punctatum						**Wedelia trilobata (Sphag. trilobata)**					
*Polygonum						Wolffiella spp.					
Pontederia cordata						Woodwardia virginica					
*Potamogeton diversifolius						Xyris sp.					
*Potamogeton illinoensis						Zizania aquatica					
*Potamogeton pusillus						Zizaniopsis milacea					
*Potamogeton pectinatus (Stuck. pectinatus)											
Proserpinaca pectinata											
*Rhexia											
*Rhynchospora corniculata											
*Rhynchospora inundata											
Rhynochospora tracyi											
Ricciocarpus natans											
Sabal palmetto											
Sacciolepis striata	1	f	f	c							
*Sagittaria filiformis											
*Sagittaria graminea											
*Sagittaria isoetiformis											
Sagittaria lancifolia											
Sagittaria latifolia											
						*Schoenoplectus tabernaemontani = Scirpus validus					

LIMS ID 2095096 122-2019-06-10-30

DEP-SOP-001/01
FS 7000 General Biological Community Sampling

Form FD 9000-2: COMPOSITE LAKE SAMPLING SHEET (< 1000 ACRES)

Date: 06/12/19	Name of Lake: Merial Lake	Gear used: (PONAR)	EKMAN	OTHER
Comments:				

Drop #	Depth (m)	Sediment Type (circle all that apply)	Drop #	Depth (m)	Sediment Type (circle all that apply)
1		sand, silt/clay, CPOM, muck, SAV	7		sand, silt/clay, CPOM, muck, SAV
2		sand, silt/clay, CPOM, muck, SAV	8		sand, silt/clay, CPOM, muck, SAV
3	4.6	(sand) silt/clay, CPOM, muck, SAV	9		sand, silt/clay, CPOM, muck, SAV
4		sand, silt/clay, CPOM, muck, SAV	10		sand, silt/clay, CPOM, muck, SAV
5		sand, silt/clay, CPOM, muck, SAV	11		sand, silt/clay, CPOM, muck, SAV
6	5.0	(sand) silt/clay, CPOM, (muck) SAV *	12	3.9	* (sand), silt/clay, CPOM, (muck) SAV *

CPOM = coarse particulate organic matter; SAV = submerged aquatic vegetation

Storet G3NW0201 Field ID G3NW0201 Project. Reference Lakes SBIO ID:
WBID 225

Paste map here and show location of each dredge drop and where water chemistry parameters were collected.

Ref:
Dep:
Date: 29May19
Wgt: 10.00 LBS
DV: 0.00
SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00
Svcs: PRIORITY OVERNIGHT
TRCK: 4751 8780 2855

✓ TLH
6/13/2019 10:11
CTZ

Photo Log
Storet G3NWQ201
Station Name: Merial Lake, Center
Date: 06/12/2019
Samplers: F. Butera, J. Pitts

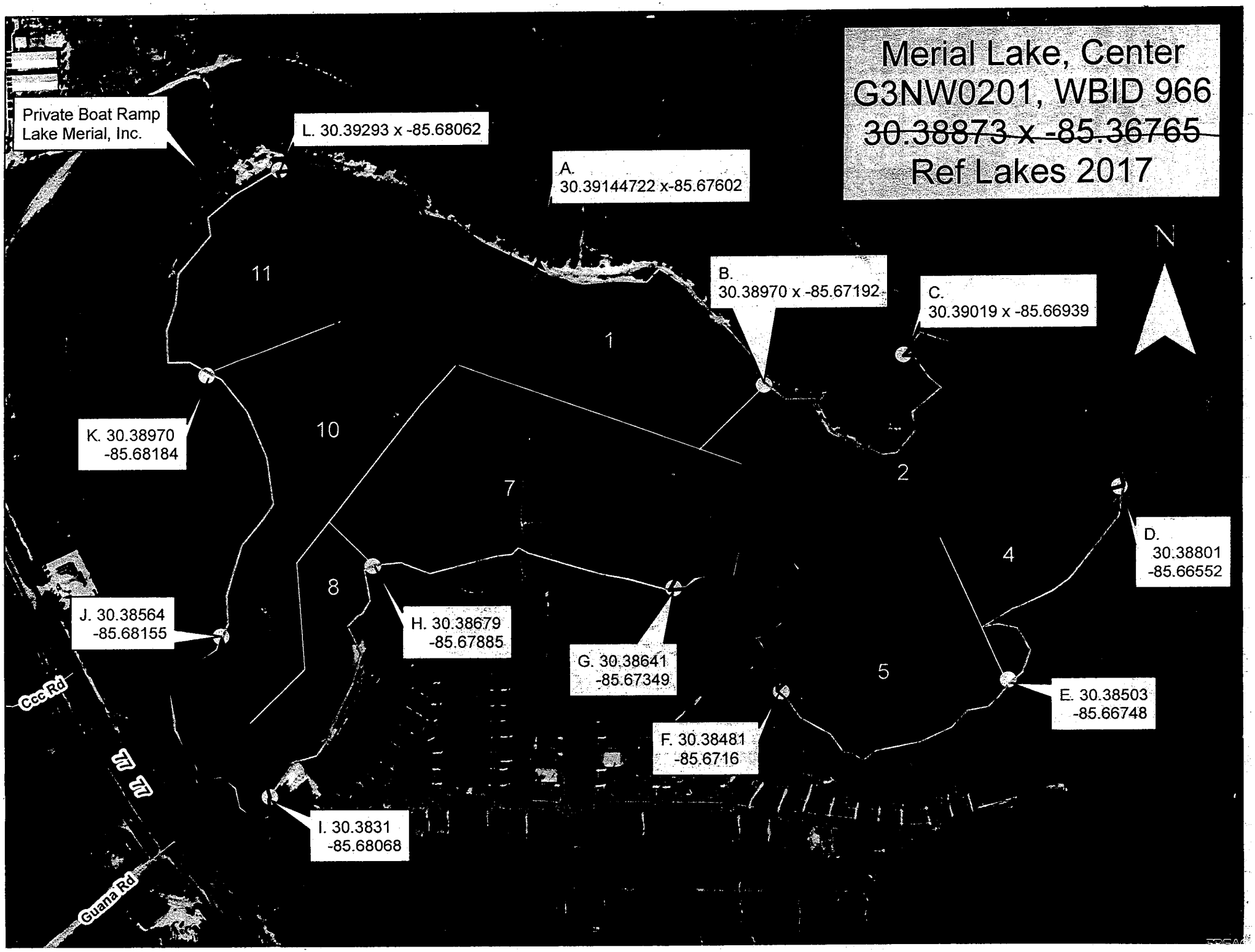
1. H. lissoplony flower
2. Data Sheet
3. Shoaline 12
4. Section 3 - East
5. Section 6 - South
6. Section 8-9 line - South
7. Section 9 - NNW
8. Section 9 - NW
9. ~~Section 12~~ FS
10. Shore North
11. Shore East
12. Shore South
13. Shore - West
14.
15.
16.
17.

Notes.

Station: Merial Lake, Center
GPS Dec. 30.36765 x -85.67649
Storet: G3NW0201 WBID 966
Sample ID : 79810
Macro ID: 11389

Sampled : 06/12/2019
Sampled By. F.Butera, J. Pitts
Location. Vicksburg, Bay Co. FL
Receiving Waters: St. Andrew's Bayr
LIMS ID: 2095096

	Taxa	3	6	9	12	Coll.
1	*Acer rubrum*			1		
2	*Bacopa caroliniana*	1	1	1		
3	*Cephalanthus occidentalis*			1	1	
4	*Cyrilla racemiflora*			1		
5	*Fuirena scirpoidea*	1	1	1	1	Y
6	*Hypericum lissophloeus*	1	1	1	C	Y
7	*Ilex myrtifolia* Walter	1			1	Y
8	*Juncus effusus*	1	1	1	1	
9	*Leersia hexandra*	1	1	1	1	
10	*Nymphaea odorata*	1	1	1		
11	*Pinus elliotii* (Slash)		1	1		
12	*Sabal palmetto*			1	1	
13	*Sacciolepis striata*	1	C	C	C	
14	*Smilax laurifolia*		1		1	
15	*Utricularia floridana*	D	C	C	1	
	Taxa per section	9	10	13	10	
	Exotic Present	0	0	0	0	
	Avg. taxa per section	11				
	sections with exotics	0				
	Exotic Taxa		Exotics per Section: 0.0			

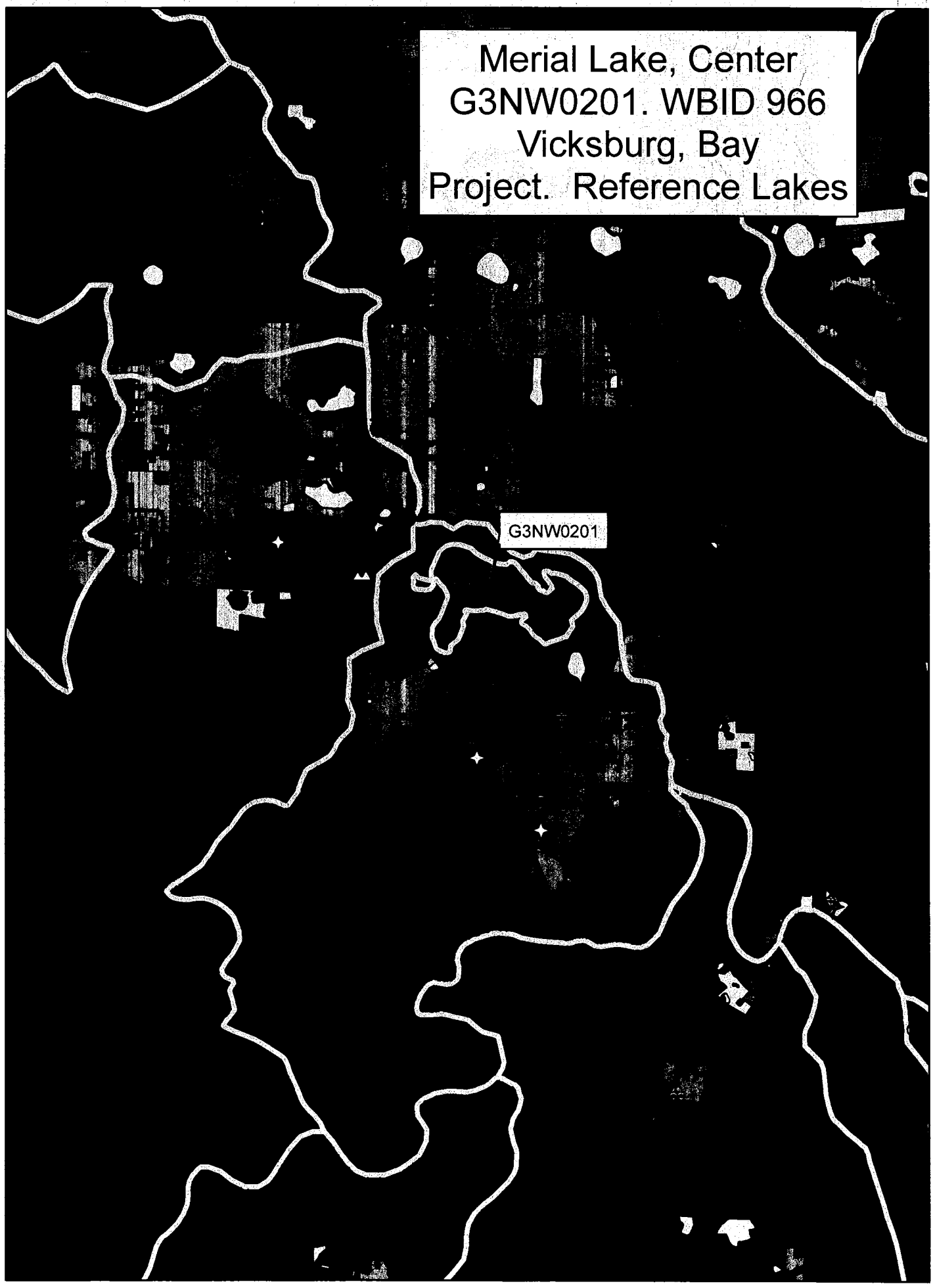

Merial Lake, Center
G3NW0201, WBID 966
~~30.38873 x -85.36765~~
Ref Lakes 2017
Private Boat Ramp
Lake Merial, Inc.
L. 30.39293 x -85.68062
A.
30.39144722 x-85.67602
B.
30.38970 x -85.67192
C.
30.39019 x -85.66939
D.
30.38801
-85.66552
E. 30.38503
-85.66748
F. 30.38481
-85.6716
G. 30.38641
-85.67349
H. 30.38679
-85.67885
I. 30.3831
-85.68068
J. 30.38564
-85.68155
K. 30.38970
-85.68184
N
11
1
10
7
2
4
8
5
Ccc Rd
77
Guana Rd

Merial Lake, Center

WIN ID	G3NW0201
Receiving Water	Floridian Aquifer
Basin / WBID	St. Andrew's Bay/ 966
City, County	Vicksburg, Bay
Lake Acreage	225
Circumference (M)	6074
Seg. Length (M)	506.1666667

Location	Dec. Latt.	Dec. Long.
Storet	30.38873	-85.86765
A	30.39144	85.67602
B	30.38970	85.67192
C	30.39019	85.66939
D	30.38810	85.66552
E	30.38503	85.66748
F	30.38481	85.67160
G	30.38641	85.67349
H	30.38679	85.67885
I	30.38310	85.68068
J	30.38564	85.68155
K	30.38970	85.68184
L	30.39293	85.68062

Boat Ramp	30.392859	85.68199639


Merial Lake, Center
G3NW0201. WBID 966
Vicksburg, Bay
Project. Reference Lakes
G3NW0201