

Lake Mills Algal Bloom  
 12/04/2018  
 MKL / EB

Appendix A

| CYANOBACTERIA BLOOM RESPONSE FIELD DATA SHEET <span style="float: right;">(7-6-06 V2)</span>                                                                                                                                                                                             |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--|--|
| WATERBODY<br><div style="font-size: 1.2em;">Lake Mills</div>                                                                                                                                                                                                                             |  |                                                                                           | DATE (M/D/YY):<br><div style="font-size: 1.2em;">12/04/18</div>     |                                                 | TIME: (AM)<br><div style="font-size: 1.2em;">1229</div> |                                                                                                                                                                                                                                                                             | Case ID# |  |  |
| COUNTY:<br><div style="font-size: 1.2em;">Seminole</div>                                                                                                                                                                                                                                 |  |                                                                                           | LOCATION:<br><div style="font-size: 1.2em;">East side of lake</div> |                                                 |                                                         | NEAREST TOWN/CITY:<br><div style="font-size: 1.2em;">Oviedo</div>                                                                                                                                                                                                           |          |  |  |
| Visit Type:<br>Initial <input type="checkbox"/><br>Recon <input type="checkbox"/><br>Sampling <input checked="" type="checkbox"/><br>Follow-up <input type="checkbox"/>                                                                                                                  |  | Samples collected:<br><input checked="" type="checkbox"/> yes <input type="checkbox"/> no |                                                                     | Samples submitted to:                           |                                                         | Photos Taken: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no                                                                                                                                                                                           |          |  |  |
| Sample collection method:<br>Single Grab: <input checked="" type="checkbox"/> Grab Composite: <input type="checkbox"/> Depth integrated composite: <input type="checkbox"/>                                                                                                              |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Sample & Analysis types: Aqueous: <input checked="" type="checkbox"/> Surface Scum: <input type="checkbox"/> Benthic mat: <input type="checkbox"/> Tissue: <input type="checkbox"/>                                                                                                      |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Algal ID & enumeration: <input checked="" type="checkbox"/> Nutrients: <input checked="" type="checkbox"/> Chl-a: <input checked="" type="checkbox"/> AGP: <input checked="" type="checkbox"/> Turbidity: <input checked="" type="checkbox"/> Toxin: <input checked="" type="checkbox"/> |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Estimated size of bloom:<br><div style="font-size: 1.2em;">small</div>                                                                                                                                                                                                                   |  | Impounded: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no            |                                                                     | Stream/River/Canal <input type="text"/> m wide  |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Lake/Estuary Typical depth<br><div style="font-size: 1.2em;">1.6</div> m deep                                                                                                                                                                                                            |  | Inflows: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no              |                                                                     | Typical Transect                                |                                                         | <input type="text"/> m deep <input type="text"/> m deep <input type="text"/> m deep<br>Water velocity<br><input type="text"/> m/s <input type="text"/> m/s <input type="text"/> m/s<br><small>Left bank                      Middle                      Right bank</small> |          |  |  |
| Outflows: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no                                                                                                                                                                                                            |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Canopy Cover: Open: <input checked="" type="checkbox"/> Lightly Shaded (11-45%): <input type="checkbox"/> Moderately Shaded (46-80%): <input type="checkbox"/> Heavily Shaded: <input type="checkbox"/>                                                                                  |  |                                                                                           |                                                                     |                                                 |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Description of Bloom/                                                                                                                                                                                                                                                                    |  | Latitude                                                                                  |                                                                     | Longitude                                       |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Present Weather conditions<br><div style="font-size: 1.2em;">70's cloudy</div>                                                                                                                                                                                                           |  | Degrees   Minutes   Seconds                                                               |                                                                     | Degrees   Minutes   Seconds                     |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
|                                                                                                                                                                                                                                                                                          |  | <div style="font-size: 1.2em;">28.635504</div>                                            |                                                                     | <div style="font-size: 1.2em;">-81.108091</div> |                                                         |                                                                                                                                                                                                                                                                             |          |  |  |
| Print a map from GIS tool or Internet mapping service (e.g., Mapquest, Google Map)                                                                                                                                                                                                       |  |                                                                                           |                                                                     |                                                 |                                                         | Last rain event <div style="font-size: 1.2em;">12 hr</div>                                                                                                                                                                                                                  |          |  |  |
| Sketch bloom area on the attached map. Indicate wind direction.                                                                                                                                                                                                                          |  |                                                                                           |                                                                     |                                                 |                                                         | Rainfall amount <div style="font-size: 1.2em;">0.5 in</div>                                                                                                                                                                                                                 |          |  |  |

  

| WATER QUALITY | Depth (m):                               | Temp. (°C):                                | pH (SU):                                  | D.O. (mg/l):                              | Cond. (µmho/cm) or Salinity (ppt):       | Total Depth                              | Secchi (m)                               |
|---------------|------------------------------------------|--------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Top           | <div style="font-size: 1.2em;">0.3</div> | <div style="font-size: 1.2em;">21.71</div> | <div style="font-size: 1.2em;">7.07</div> | <div style="font-size: 1.2em;">8.61</div> | <div style="font-size: 1.2em;">169</div> |                                          |                                          |
| Mid-depth     |                                          |                                            |                                           |                                           |                                          |                                          |                                          |
| Bottom        | <div style="font-size: 1.2em;">1.1</div> | <div style="font-size: 1.2em;">21.18</div> | <div style="font-size: 1.2em;">6.87</div> | <div style="font-size: 1.2em;">8.21</div> | <div style="font-size: 1.2em;">169</div> | <div style="font-size: 1.2em;">1.6</div> | <div style="font-size: 1.2em;">0.8</div> |

  

|                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Type: Stream: <input type="checkbox"/> (1st - 2nd order / 3rd - 4th order) Lake: <input checked="" type="checkbox"/> Wetland: <input type="checkbox"/> Estuary: <input type="checkbox"/> Other: <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Water Odors (check box): Normal: <input checked="" type="checkbox"/> Sewage: <input type="checkbox"/> Petroleum: <input type="checkbox"/> Chemical: <input type="checkbox"/> Other: <input type="checkbox"/>                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Water Surface (check box): Clear: <input type="checkbox"/> Scum: <input type="checkbox"/> Glob: <input type="checkbox"/> Slick: <input checked="" type="checkbox"/> <div style="font-size: 1.2em;">Light algae specks</div>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Water Clarity (check box): Clear: <input checked="" type="checkbox"/> Slightly turbid: <input type="checkbox"/> Turbid: <input type="checkbox"/> Opaque: <input type="checkbox"/>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Bloom Color (check box): Green: <input checked="" type="checkbox"/> Red: <input type="checkbox"/> Brown: <input type="checkbox"/> Other: <input type="checkbox"/>                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Notes<br><div style="font-size: 0.8em;">H2S04<br/>LOT# SA8101020<br/>EXP: 04/11/2019</div>                                                                                                                                      | Abundance:<br>Periphyton <input type="checkbox"/> Absent <input type="checkbox"/> Rare <input checked="" type="checkbox"/> Common <input type="checkbox"/> Abundant <input type="checkbox"/><br>Fish <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/><br>Aquatic Macrophytes <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/><br>Iron/sulfur Bacteria <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

  

|                                                                     |                                                                              |
|---------------------------------------------------------------------|------------------------------------------------------------------------------|
| VISIT TEAM<br><div style="font-size: 1.2em;">FDEP      CE-ROC</div> | AGENCY<br><div style="font-size: 1.2em;">Mike Linger / Elizabeth Bates</div> |
|---------------------------------------------------------------------|------------------------------------------------------------------------------|

# 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: B00P NUN

RQ: 2018-1203-SS/2017-07-30-34

Project: SMP/BLOOM

- 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 11/30/18

| DO<br>DEP SOP<br>FT 1500 | Name        | Date    | Time<br>CT-ET | Temp<br>°C | Baro-<br>meter<br>mmHg | D.O.<br>Chart<br>mg/L | Meter<br>D.O.<br>mg/L | % DO  | Probe<br>Charge | Probe<br>Gain | Pass<br>/ Fail | Lab<br>/ Field |
|--------------------------|-------------|---------|---------------|------------|------------------------|-----------------------|-----------------------|-------|-----------------|---------------|----------------|----------------|
| Calibr.                  | Mike Duggan | 12/4/18 | 800           | 23.46      | 760                    | 8.498                 | 8.50                  | 100.0 | 55.3            | 86008         | P/F            | L/F            |
| ICV                      |             |         |               | 23.46      | 760                    | 8.498                 | 8.50                  | 99.9  | 55.3            |               | P/F            | L/F            |
| CCV                      |             |         | 1415          | 23.42      | 760                    | 8.514                 | 8.48                  | 99.6  |                 |               | P/F            | L/F            |
| CCV                      |             |         |               |            |                        |                       |                       |       |                 |               | P/F            | L/F            |

DO Acceptance criteria from Table  $\pm 0.3$  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.<br>Cond.<br>FT 1200 | Name | Date | Time<br>CT-ET | Lot #   | Expir.<br>Date | Standard<br>$\mu$ hos/cm | Meter<br>Reading<br>$\mu$ hos/cm | Pass<br>/ Fail | Lab<br>/ Field |
|---------------------------|------|------|---------------|---------|----------------|--------------------------|----------------------------------|----------------|----------------|
| Calibr.                   |      |      | 800           | 180312B | 3/19           | 1000                     | 1000                             | P/F            | L/F            |
| ICV                       |      |      |               | 180615A | 6/19           | 100                      | 103                              | P/F            | L/F            |
| CCV                       |      |      | 1415          | 180615A | 6/19           | 100                      | 101                              | P/F            | L/F            |
| CCV                       |      |      |               |         |                |                          |                                  | P/F            | L/F            |

Conductivity Acceptance criteria  $\pm 5\%$

| pH<br>DEP SOP<br>FT 1100 | Name | Date | Time<br>CT-ET | Lot #  | Expir.<br>Date | pH<br>Buffer<br>SU | Temp<br>°C | Meter<br>reading<br>SU | mV     | Pass<br>/ Fail | Lab<br>/ Field |
|--------------------------|------|------|---------------|--------|----------------|--------------------|------------|------------------------|--------|----------------|----------------|
| Calibr.                  |      |      | 800           | 176157 | 8/19           | 7.00               | 23.97      | 7.00                   | -34.7  | P/F            | L/F            |
| Calibr.                  |      |      |               | 177759 | 10/19          | 4.00               | 23.95      | 4.00                   | 140.4  | P/F            | L/F            |
| Calibr.                  |      |      |               | 181282 | 5/20           | 10.00              | 24.05      | 10.00                  | -212.8 | P/F            | L/F            |
| ICV                      |      |      |               | 181282 | 5/20           | 10.00              | 24.03      | 10.00                  | -212.1 | P/F            | L/F            |
| CCV                      |      |      | 1415          | 177759 | 10/19          | 4.00               | 23.81      | 4.01                   | 139.8  | P/F            | L/F            |
| CCV                      |      |      |               |        |                |                    |            |                        |        | P/F            | L/F            |

pH Acceptance criteria  $\pm 0.2$  SU; mV pH 7 Range 0  $\pm 50$ ;

mV pH 4 Range  $+180 \pm 50$ ;

mV pH 10 Range  $-180 \pm 50$ ;

If mV are recorded: slope from 7 to 10 178.1, slope from 4 to 7 175.1 (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: \_\_\_\_\_

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: Knothead; Date of last verification: 9/21/18

| Depth Sensor<br>(Daily Calibration &<br>ICV) | Name | Date | Time<br>CT-ET | Calibrated<br>Value (0.00 or<br>Offset), meters | ICV Value,<br>meters | Pass /<br>Fail | Lab /<br>Field |
|----------------------------------------------|------|------|---------------|-------------------------------------------------|----------------------|----------------|----------------|
| Pressure mode in air                         |      |      |               |                                                 |                      | P / F          | L / F          |

Report two decimal places. Round numbers  $\leq 4$  down,  $\geq 5$  up. ICV acceptance criteria  $\pm 5\%$  or  $\pm 0.05$ m, whichever is greater.

COMMENTS: