

Algal Bloom Response

Central Laboratory Submittal Form

last revised Apr 7, 2016

Customer: WQAP

Requester: Michael Linger

Field Report Prepared By: Natalie Ayala

Project ID: BLOOM-RESP

Collected By: Natalie Ayala / Mike Linger

Sampling Agency: FDEP (CEROC)

Loca	Algal Bloom @ Orienta Lake		Orienta 1  Field ID ↑ STORET ↓  Orienta 1		☐ Comp ☒ Grab	Collection (comp begin or grab) Date 4/12/2017 Time 0950	Eastern Central	Composite end Date	Bottle Group(s) (See pg 2)
Field			Matrix (type, e.g., Salt, Fresh, etc) Fresh		Diss. Oxygen 8.1		☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	A/B/
STO	Date: 04/12/17		Temp (C) 24.5		pH 8.8		Sample Depth 0.2	☐ ft ☒ m	Sp. Conductance (umho/cm) 239 C/D
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt) N/A	Comments ALGAL BLOOM RESPONSE SEE: Cheryl Swenson				
Location			☐ Comp ☐ Grab		Collection (comp begin or grab) Date	Eastern Central	Composite end Date	Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #			Temp (C)		pH		Sample Depth	☐ ft ☐ m	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments				
Location			☐ Comp ☐ Grab		Collection (comp begin or grab) Date	Eastern Central	Composite end Date	Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #			Temp (C)		pH		Sample Depth	☐ ft ☐ m	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments				
Location			☐ Comp ☐ Grab		Collection (comp begin or grab) Date	Eastern Central	Composite end Date	Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #			Temp (C)		pH		Sample Depth	☐ ft ☐ m	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments				
Location			☐ Comp ☐ Grab		Collection (comp begin or grab) Date	Eastern Central	Composite end Date	Bottle Group(s)	
Field ID			Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)	
STORET #			Temp (C)		pH		Sample Depth	☐ ft ☐ m	
Latitude	☐ dd ☐ dms	Longitude	☐ dd ☐ dms	Salinity (ppt)	Comments				

Relinquished By: Natalie Ayala	Date/Time: 4/12/17	Shipping Method: Fed Ex	Number of Coolers Shipped: 1	Received By: J.O.	Date/Time: 4/13/17 10:10
--------------------------------	--------------------	-------------------------	------------------------------	-------------------	--------------------------

Group: A	Bottle Type:	PT-50ML	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
BLOOM-ID							
Group: B	Bottle Type:	BG-WD250	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
W-MCYST-AA							
Group: C	Bottle Type:	BP-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
CHLSUITE-W							
Group: C	Bottle Type:	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
W-NH3							
W-NO2NO3							
W-S-A-TP							
W-TKN							
Group: C	Bottle Type:	P-125ML	# of Bottles: 1	Preservative:	ICE-FLTR	Enter Number of Bottles Sent to Lab	1
W-PO4-F							
Group: D	Bottle Type:	BP-1L	# of Bottles: 1	Preservative:	Lugols	Enter Number of Bottles Sent to Lab	1
DTY-QN-C							
PKD-QN-C							

Date of Request: 02-FEB-2017
 Created By: LINGER_M On: 02-FEB-2017
 Modified By: SWANSON_C On: 03-FEB-2017
 Customer: WQAP
 Project: BLOOM-RESP
 Division: Division of Environmental Assessment and Restoration
 District: CEROC
 Sampling Event: Algal Bloom Response

Send Coolers To:

Phone: 407-897-4180
 3319 Maguire Blvd
 Suite 232
 Orlando, FL 32803
 Attn: Mike Linger

Program Module Number:

Priority: 3
 Event Status: S
 Criminal Investigation: NO
 Chemistry Request Reviewed By: WATTS_J On: 02-FEB-2017
 Biology Request Reviewed By: SWANSON_C On: 03-FEB-2017
 Sampling Kit Required: YES Ship on: 15-FEB-2017
 Sampling Kit Shipped: YES On: 14-FEB-2017
 Sampling Kit Packed By: GREENWOO_J
 Preservatives Needed: NO
 Date to Receive Samples: 20-FEB-2017
 Received By:

Send Final Report To:

3319 Maguire Blvd
 Suite 232
 Orlando, FL 32803
 Attn: Mike Linger

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

Comments: Analyze toxin upon receipt after consultation with Biology's Taxonomy Manager.

Bottle Groups A/B - separate event, priority 1
 Bottle Groups C/D - separate event, C - priority 3, D - priority 12

Bottle Group A - Priority 1
 For algal dominant taxon.

Bottle Group B - Priority 1
 For toxin testing.

Bottle Group C - Priority 3
 Water quality testing

Bottle Group D - Priority 12
 For algal full ID.

There are multiple bottles per Group in case multiple sample targets or sample locations are needed. Samplers use best professional judgement to decide which samples are appropriate to collect for a particular response. All sets of bottles do not have to be filled at one time.

Bottle Group A (Biological) With 2 Samples:

Bottle Type: PT-50ML Number of Bottles: 2 Preserved With: ICE
 BLOOM-ID Template: DEFAULT (SOP-AB05) Assessment of dominant algal taxa in bloom or mat sample

Bottle Group B (Water) With 1 Samples:

Bottle Type: BG-WD250 Number of Bottles: 1 Preserved With: ICE
 W-MCYST-AA Template: DEFAULT (EPA 8321B) Microcystins in water matrices by HPLC/MS/MS

Bottle Group C (Water) With 1 Samples:

Bottle Type: BP-1L Number of Bottles: 1 Preserved With: ICE
 CHLSUITE-W Template: DEFAULT (SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry
 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
 W-NO2NO3 Template: DEFAULT (EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L

Bottle Group C (Water) With 1 Samples:

Bottle Type: P-500ML	Number of Bottles: 1	Preserved With: ICE And H2SO4
W-S-A-TP	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
W-TKN	Template: DEFAULT	(EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
Bottle Type: P-125ML	Number of Bottles: 1	Preserved With: ICE-FLTR
W-PO4-F	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L

Bottle Group D (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.
PKD-QN-C	Template: DEFAULT	(SOP-AB05) No. of wet taxa of quantitative phytoplankton sample.

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

Log-in Checklist

RQ- 2017-02-20-418

Shipping Method: Fed Ex

Date/Time of Receipt: 4/13/17 10:10

Cooler ID	Cooler Temperature*	No. Sample Containers in Cooler	Evidence Tape				Tracking # (fill out only if waybill copy is damaged)
			Present?		*Intact?		
			Yes	No	Yes	No	
RED	1.3°C	6		✓			811 7111 9532

*If the temperature of a cooler is above 6.0 °C (or above 10.0 °C for W-1-4-DIOX), or if Evidence Seal is damaged, identify the containers in the affected cooler(s) on back of this form.

****Note:** If "No" is checked in any of the fields below, fill out the back of this form with additional details (Field ID, Test IDs, etc.) and generate an NCR.

**Chain of Custody/ Field Sheet(s) Included? Yes ☒ No ☐

CONTAINER CHECK

**Evidence Tape on Bottles? Yes ☐ No ☒ If yes, is it intact? Yes ☐ No ☐

**Caps on tight? Yes ☒ No ☐ **Containers intact? Yes ☒ No ☐

**Sufficient Sample Volume: Yes ☒ No ☐

CHLORINE CHECK (Blue dot on container)

Check the Box marked "Yes" or "No" for the Presence of Chlorine. If Cl detected, an NCR is required.					
Analysis	Yes	No	Analysis	Yes	No
W-1,4 DIOX			W-PC-AA-SF		
W-AHERB-AA (-AHB-AA-R)			W-PCL-SQ (-R)		
W-BNA (-625, -R)			W-PDQUAT		
W-CARB-AA (-CAB-AA-R)			W-PESTNP-R		
W-ENDO-AA			W-PSCL-TQ		
W-GLYPH			W-PSNP-TQ		
W-NP-AA-SF			W-PST-CL-R		
W-PAH (-R)			W-TR-TQ		
W-PCB-R			W-CT-CI-R		

PRESERVATION CHECK (EXCLUDING SAMPLES SENT TO OVERFLOW LABS, "OV-")

**Acid Preserved Samples: pH ≤ 2.0? Yes ☒ No ☐ NA ☐ Init: QD

**W-1-4-DIOX (Green dot on container) preserved to pH < 4.0? Yes ☐ No ☐ NA ☒ Init: QD

Coolers Unpacked/Checked by: QD Date: 4/13/17 NCRs (Y/N)? ☐

Event ID: WQAP-2017-04-13-03 NCR # ☐

WQAP-2017-04-13-05
WQAP-2017-04-13-06

Log-in Checklist

Samples with Incorrect pH Preservation or presence of Chlorine

Field ID	Bottle Test ID(s)	pH / Cl	Action Taken

Samples in Coolers with Incorrect Preservation or Damaged Evidence Tape

Cooler ID	Field ID	Bottle Test ID(s)

Bottles Not Intact

Field ID	Bottle Test ID(s)	Loose Cap	Damaged Cap		Damaged Container		Evidence Tape Not Intact
			CK	BR	CK	BR	

Samples with Insufficient Volume for Analyses

Field ID	Bottle Test ID(s)	Action Taken

ENCORE SAMPLES

S-VOC-MS samples in Encores must be frozen within 48 hours of collection.

Were Encore samples received? Yes ☐ No ☒

Date and time placed in freezer _____

Were all samples placed in freezer within 48 hours of collection? Yes ☐ No ☐

If no, were samples shipped on dry ice? Yes ☐ No ☐

FOR CLEAN LAB USE ONLY – Total Mercury Preservation Check (W-HG-AF; W-HG-AF-F):

Samples preserved within 48 hours? Yes ☐ No ☐

Date and time samples preserved: _____

Additional Comments:

CYANOBACTERIA BLOOM RESPONSE FIELD DATA SHEET

(7-6-06 V2)

WATERBODY <u>Lake Orienta</u>		DATE (M/D/YY): <u>4/12/17</u>	TIME: (AM) <u>0950</u>	Case ID#
COUNTY: <u>Seminole</u>	LOCATION: <u>Ramp @ Lake Orienta Park</u>		NEAREST TOWN/CITY: <u>Altamonte</u>	
Visit Type: Initial ☐ Recon ☐ Sampling ☒ Follow-up ☐	Samples collected: ☒ yes ☐ no	Samples submitted to: <u>FDEP</u>		Photos Taken: ☐ yes ☐ no
Sample collection method: Single Grab: ☒ Grab Composite: ☐ Depth integrated composite: ☐				
Sample & Analysis types: Aqueous: ☒ Surface Scum: ☐ Benthic mat: ☐ Tissue: ☐				
Algal ID & enumeration: ☒ Nutrients: ☒ Chl-a: ☒ AGP: ☒ Turbidity: ☒ Toxin: ☒				
Estimated size of bloom: <u>entire lake</u>		Impounded: ☐ yes ☒ no		
Lake/Estuary Typical depth <u>N/A</u> m deep		Stream/River/Canal ☐ m wide		
Inflows: ☐ yes ☒ no		Typical Transect ☐ m deep ☐ m deep ☐ m deep		
Outflows: ☐ yes ☒ no		Water velocity ☐ m/s ☐ m/s ☐ m/s		
		Left bank Middle Right bank		

Contains
1:1
Sulfuric Acid
SA-6242080
EXP: 08/29/17
Warning!
See SDS

Canopy Cover: Open: ☒ Lightly Shaded (11-45%): ☐ Moderately Shaded (46-80%): ☐ Heavily Shaded: ☐
Description of Bloom/ Latitude Degrees Minutes Seconds Longitude Degrees Minutes Seconds
Present Weather conditions <u>Wind Direction blowing SW.</u> <u>28.65 2039</u> <u>- 81.380981</u> Print a map from GIS tool or Internet mapping service (e.g., Mapquest, Google Map) Sketch bloom area on the attached map. Indicate wind direction. <u>Bloom covers entire lake.</u> Last rain event <u>April 6, 2017</u> Rainfall amount <u>0.03 in</u>

WATER QUALITY	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm) or Salinity (ppt):	Secch(m)
Top	<u>0.2 m</u>	<u>24.5</u>	<u>8.8</u>	<u>8.1</u>	<u>239</u>	<u>0.4 m</u>
Mid-depth				<u>97%</u>		
Bottom	<u>N/A</u>					
System Type: Stream: ☐ (1st - 2nd order 3rd - 4th order 5th - 6th order 7th order or greater) Lake: ☒ Wetland: ☐ Estuary: ☐ Other: ☐						
Water Odors (check box): Normal: ☒ Sewage: ☐ Petroleum: ☐ Chemical: ☐ Other: ☐						
Water Surface (check box): Clear: ☒ Scum: ☐ Globbs: ☐ Slick: ☐						
Water Clarity (check box): Clear: ☐ Slightly turbid: ☐ Turbid: ☒ Opaque: ☐						
Bloom Color (check box): Green: ☐ Red: ☐ Brown: ☒ Other: ☐						
Notes				Abundance: Periphyton ☐ Absent ☐ Rare ☐ Common ☐ Abundant ☐ Fish ☐ Aquatic Macrophytes ☐ Iron/sulfur Bacteria ☐		

VISIT TEAM:

<u>FDEP-CEROL</u>	AGENCY: <u>Natalie Ayala</u>
-------------------	------------------------------

Algal Bloom @
Orienta Lake



Ayala, Natalie

From: Warren, Kalina
Sent: Wednesday, April 12, 2017 3:14 PM
To: Espy, Julie; Drennan, Lawrence; Ayala, Natalie
Cc: Linger, Michael
Subject: RE: Fw: Algal Bloom

I do not know that, we will ask.

Thank you,

Kalina

(I am in Tampa today, Matt and I are interviewing today for the ES I CS, 5 interviews done, one more to go☺)

From: Espy, Julie
Sent: Wednesday, April 12, 2017 12:21 PM
To: Drennan, Lawrence <Lawrence.Drennan@dep.state.fl.us>; Ayala, Natalie <Natalie.Ayala@dep.state.fl.us>; Warren, Kalina <Kalina.Warren@dep.state.fl.us>
Cc: Linger, Michael <Michael.Linger@dep.state.fl.us>
Subject: RE: Fw: Algal Bloom

I don't believe this is a toxin producer, so we likely won't run the analysis but the lab can make that decision.
Has the City of Altamonte let the citizens know or done any kind of outreach?

Julie

Sent from my Verizon Wireless 4G LTE smartphone

----- Original message -----

From: "Drennan, Lawrence" <Lawrence.Drennan@dep.state.fl.us>
Date: 04/12/2017 8:45 AM (GMT-05:00)
To: "Ayala, Natalie" <Natalie.Ayala@dep.state.fl.us>, "Warren, Kalina" <Kalina.Warren@dep.state.fl.us>, "Espy, Julie" <Julie.Espy@dep.state.fl.us>
Cc: "Linger, Michael" <Michael.Linger@dep.state.fl.us>
Subject: RE: Fw: Algal Bloom

Good morning,

For what it's worth I just looked at this under the scope and agree that they are Botryococcus cells embedded in colonial mucilage.

Thanks,

Mike D

From: Ayala, Natalie
Sent: Wednesday, April 12, 2017 8:09 AM
To: Warren, Kalina <Kalina.Warren@dep.state.fl.us>; Espy, Julie <Julie.Espy@dep.state.fl.us>
Cc: Linger, Michael <Michael.Linger@dep.state.fl.us>; Drennan, Lawrence <Lawrence.Drennan@dep.state.fl.us>
Subject: FW: Fw: Algal Bloom

Kalina and Julie,

The City of Altamonte has identified the algae as botryococcus. The bloom's been recurring for a year. We're prepared to sample today. Let us know if this new information changes how we should respond.

Thanks,

Natalie

From: Danielle Marshall [<mailto:DMarshall@Altamonte.org>]
Sent: Wednesday, April 12, 2017 7:13 AM
To: Wetzel, Shannon <SWetzel@seminolecountyfl.gov>; Ayala, Natalie <Natalie.Ayala@dep.state.fl.us>
Cc: Warren, Kalina <Kalina.Warren@dep.state.fl.us>; April Verpoorten <AVerpoorten@Altamonte.org>
Subject: RE: Fw: Algal Bloom

Good morning,

Lake Orienta has been experiencing an off and on algal bloom for a year. What we have been experiencing is a heavy algae (botryococcus), causing a brown/orange discoloration in the lake. Please let us know if you find anything different.

DANIELLE MARSHALL, CFM
Division Director, Streets and Stormwater
DMarshall@altamonte.org

P: (407) 571-8610
F: (407) 571-8612



950 Calabria Drive
Altamonte Springs, FL 32714
www.Altamonte.org



Information provided in this email is subject to disclosure to the public pursuant to Florida Sunshine Law. Email sent on the City system is considered public and is only withheld from disclosure if deemed confidential pursuant to state law.

From: Wetzel, Shannon [<mailto:SWetzel@seminolecountyfl.gov>]
Sent: Tuesday, April 11, 2017 7:29 PM
To: Ayala, Natalie <natalie.ayala@dep.state.fl.us>
Cc: Warren, Kalina <kalina.warren@dep.state.fl.us>; April Verpoorten <AVerpoorten@Altamonte.org>; Danielle Marshall <DMarshall@Altamonte.org>
Subject: Re: Fw: Algal Bloom

Thanks, I'm copying April and Danielle with the city of Altamonte Springs. They conduct the monitoring on this lake.

Shannon

Get [Outlook for Android](#)

From: Ayala, Natalie
Sent: Tuesday, April 11, 7:11 PM
Subject: Fw: Algal Bloom
To: Wetzel, Shannon
Cc: Warren, Kalina

Shannon,

I wanted to share with you this complaint we received about Lake Orienta. We plan on sampling the lake tomorrow morning.

Thanks,

Natalie

From: Ayala, Natalie
Sent: Tuesday, April 11, 2017 6:07 PM
To: Espy, Julie; Warren, Kalina

Cc: Gardner, Ashley; Linger, Michael
Subject: Re: Algal Bloom

Julie,

Mike and I visited Lake Orienta this afternoon. There's a brown bloom all over the lake that's concentrated near the public ramp. A fisherman at the park noted that the bloom had been going on for at least 3 weeks. We're going to revisit the lake tomorrow morning to collect samples and meter readings. We've visited this site before (I'll have to check our records for the date when I'm back at the office) for a similar complaint. I called the homeowner and left a voice message detailing what we'd done. I'll submit photos and more info tomorrow after we sample.

Thanks,

Natalie

From: Espy, Julie
Sent: Tuesday, April 11, 2017 4:24:25 PM
To: Warren, Kalina; Ayala, Natalie
Cc: Gardner, Ashley; Linger, Michael
Subject: RE: Algal Bloom

Please let me know what you found out.

Julie

From: Warren, Kalina
Sent: Tuesday, April 11, 2017 2:13 PM
To: Ayala, Natalie <Natalie.Ayala@dep.state.fl.us>
Cc: Gardner, Ashley <Ashley.Gardner@dep.state.fl.us>; Linger, Michael <Michael.Linger@dep.state.fl.us>; Espy, Julie <Julie.Espy@dep.state.fl.us>
Subject: RE: Algal Bloom

Thank you for handling this. Leif, Terry and I are done with the second site, heading back to office.

Sent from my Verizon Wireless 4G LTE smartphone

----- Original message -----

From: "Ayala, Natalie" <Natalie.Ayala@dep.state.fl.us>

Date: 04/11/2017 1:37 PM (GMT-05:00)

To: "Warren, Kalina" <Kalina.Warren@dep.state.fl.us>

Cc: "Gardner, Ashley" <Ashley.Gardner@dep.state.fl.us>, "Linger, Michael" <Michael.Linger@dep.state.fl.us>

Subject: Algal Bloom

Kalina,

Mike and I are heading to check out a possible algal bloom on Lake Orienta. A homeowner near the lake called to report that the lake was completely brown and that it would often clear up during the day and then flare up again at night. She said it looked like a gas which I'm assuming might mean that its suspended in the water column. She was very upset and mentioned that she would contact the news if we didn't visit the site. I assured her that we take these complaints seriously and that we routinely send teams out to investigate complaints like these as soon as possible. I mentioned that it sounds like an algal bloom but she seems certain that someone is dumping something into the lake.

The lake is nearby so Mike and I are going to check it out. We've got an algal bloom kit and should be back within a couple hours.

We'll be launching at Lake Orienta Park if necessary.



Thank you,

Natalie Ayala

Environmental Specialist III

Division of Environmental Assessment and Restoration

3319 Maguire Blvd Suite 232

Orlando, FL 32803

Office: 407-897-4178

******Florida has a very broad Public Records Law. Virtually all written communications to or from State and Local Officials and employees are public records available to the public and media upon request. Seminole County policy does not differentiate between personal and business emails. E-mail sent on the County system will be considered public and will only be withheld from disclosure if deemed confidential pursuant to State Law.******

