

Chemical Analysis Report

SO-DIST-2015-06-03-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

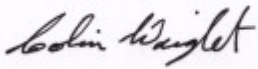
Event Description: **Algal Bloom Response - As needed**
Request ID: **RQ-2015-06-01-68**
Customer: **SO-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Kirby Wolfe

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Certified by: Colin Wright, Environmental Administrator

Date Certified: 08-JUN-2015 12:14



Abbreviations and data remark codes

CERT # - NELAP (National Environmental Laboratory Accreditation Program) Certification Number of the laboratory that performed the analysis.

LCS – Laboratory Control Sample; in the QC Failures column, this notation indicates a batch recovery failure.

MS – Matrix Spike; in the QC Failures column, this notation indicates a batch recovery failure.

RPD – Relative Percent Difference; in the QC Failures column, this notation indicates a batch failure for precision.

CCV – Continuing Calibration Verification; in the QC Failures column, this notation indicates a failure of the calibration verification check sample.

SUR – Surrogate; in the QC Failures column, this notation indicates a recovery failure for the associated surrogate.

RSD – Relative Standard Deviation expressed as a percentage.

SMP – Sample.

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

A - Value reported is the mean of two or more determinations

B - Results based on colony counts outside the acceptable range.

I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

J - Estimated value and/or the analysis did not meet established quality control criteria

K - Actual value is known to be less than value given

L - Actual value is known to be greater than value given

N - Presumptive evidence of presence of material.

O - Sampled, but analysis lost or not performed.

Q - Sample held beyond normal holding time.

T - Value reported is less than the criterion of detection.

U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.

V - Analyte was detected in both sample and method blank.

X - Too few individuals to calculate SCI value.

Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z - Colonies were too numerous to count (TNTC).

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example:
1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Precision is reported as relative percent difference unless otherwise noted.

Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published test performance acceptance criteria.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

All sample collection performed by Bureau of Laboratories staff followed the field Standard Operating Procedures adopted by reference in Rule 62-160 FAC unless otherwise noted.

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Results for NELAP accredited tests contained in this report meet the requirements specified by the National Environmental Laboratory Accreditation Conference (NELAC). All samples received were in acceptable condition and met NELAC requirements unless otherwise noted. Results generated in this report pertain to the samples collected and submitted for analysis.

All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Job: TLH-2015-06-03-08

Group: Pesticides

Job: TLH-2015-06-03-09

Group: Nutrients

Sample Location: Caloosa Rvr @ Old Swing Bridge

Collection Date/Time: 06/02/2015 12:36

Field ID: SD060215-8

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Failures
1707424	DEP SOP LC-038-1 (based on EPA 8321B)	Microcystin LR**	1.0	U	ug/L	P286093	
1707425	EPA 350.1 Rev. 2.0	Ammonia-N	0.050		mg N/L	P286090	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P286066	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.086		mg N/L	P286130	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P286048	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)

Batch ID: P286093

Component	Result	Code	Units
Microcystin LR	1.0	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P286090

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P286066

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P286130

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P286048

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)

Batch ID: P286093

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin LR	97.2	106	P/P	50 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286090

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286066

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P286048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707414	Microcystin LR	98.2	110	P/P	50 - 150

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286090

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707311	Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1705442	Kjeldahl Nitrogen	92.0	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1707256	NO2NO3-N	99.5	100	P/P	90 - 110

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
Batch ID: P286093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707414	Microcystin LR	10.1	Spike	P	0 - 30
LFB	Microcystin LR	8.66	LCS	P	0 - 30

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P286090

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707311	Ammonia-N	0.387	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P286066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1705442	Kjeldahl Nitrogen	3.10	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P286130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1707256	NO2NO3-N	0.259	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P286048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1704902	Total-P	1.29	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A63013
Included Lab Sample IDs: 1707425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A63025
Included Lab Sample IDs: 1707425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
 Run ID: A63034
 Included Lab Sample IDs: 1707425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Run ID: A63040
 Included Lab Sample IDs: 1707425

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: DEP SOP LC-038-1 (based on EPA 8321B)
 Run ID: A63042
 Included Lab Sample IDs: 1707424

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Microcystin LR	98.6	82.1	P/P	60 - 160

* Pass/Fail determinations are made for each bracketing calibration verification check.
 Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
 Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
DEP SOP LC-038-1 (based on EPA 8321B)	Microcystin LR	97.2	106	98.2	110	8.66		10.1
EPA 350.1 Rev. 2.0	Ammonia-N	99.7		100	99.6			0.387
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		92.0	95.6			3.10
EPA 353.2 Rev. 2.0	NO2NO3-N	103		99.5	100			0.259
EPA 365.1 Rev. 2.0	Total-P	101						1.29

Reference Method Descriptions

Method / NELAC Cert. #	Description	Associated Samples
DEP SOP LC-038-1 (based on EPA 8321B) / E31780	Microcystins in water matrices by HPLC/MS/MS	1707424
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1707425
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1707425
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1707425
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1707425

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP LC-038-1 (based on EPA 8321B)	06/03/2015	06/05/2015	Mohammad Ghaffari	06/05/2015	Mohammad Ghaffari	1707424
EPA 350.1 Rev. 2.0	06/03/2015			06/04/2015	Diana M. Turner	1707425
EPA 351.2 Rev. 2.0	06/03/2015	06/04/2015	Christopher Armour	06/05/2015	Virginia P. Brown	1707425
EPA 353.2 Rev. 2.0	06/03/2015			06/04/2015	Peter D. Kaus	1707425
EPA 365.1 Rev. 2.0	06/03/2015	06/04/2015	Christopher Armour	06/05/2015	Lipi Saha	1707425