

Chemical Analysis Report

WQAP-2023-05-31-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-05-29-51**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 12-JUN-2023 13:57

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Nutrients and Pesticides.

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.

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.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- 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).

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.

Sample Location: Wauseon Bay - E Lobe

Collection Date/Time: 05/30/2023 11:15

Field ID: HABCE0199_WauseonBay

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2413320	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P430586	
		Cylindrospermopsin	0.10	U	ug/L	P430584	
		Desmethyl microcystin LR	0.25	U	ug/L	P430584	
		Microcystin HILR	0.25	U	ug/L	P430584	
		Microcystin HtyR	0.25	U	ug/L	P430584	
		Microcystin LA	0.10	U	ug/L	P430584	RPD
		Microcystin LF	0.10	U	ug/L	P430584	
		Microcystin LR	0.25	U	ug/L	P430584	
		Microcystin LW	0.25	U	ug/L	P430584	
		Microcystin LY	0.10	U	ug/L	P430584	
		Microcystin RR	0.10	U	ug/L	P430584	
		Microcystin WR	0.50	U	ug/L	P430584	
		Neosaxitoxin	0.50	U	ug/L	P430586	
		Microcystin YR	0.25	U	ug/L	P430584	
		Saxitoxin	0.50	U	ug/L	P430586	
		Nodularin-R	0.10	U	ug/L	P430584	
2413325	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P430743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P430670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430840	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P430673	
2413330	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P430607	

Sample Location: St Johns River - Mullet Lake Park

Collection Date/Time: 05/30/2023 12:39

Field ID: HABCE0198_StJohnsRiver2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2413319	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P430586	
		Cylindrospermopsin	0.10	U	ug/L	P430584	
		Desmethyl microcystin LR	0.25	U	ug/L	P430584	
		Microcystin HILR	0.25	U	ug/L	P430584	
		Microcystin HtyR	0.25	U	ug/L	P430584	
		Microcystin LA	0.10	U	ug/L	P430584	RPD
		Microcystin LF	0.10	U	ug/L	P430584	
		Microcystin LR	0.25	U	ug/L	P430584	
		Microcystin LW	0.25	U	ug/L	P430584	
		Microcystin LY	0.10	U	ug/L	P430584	
		Microcystin RR	0.10	U	ug/L	P430584	
		Microcystin WR	0.50	U	ug/L	P430584	
		Neosaxitoxin	0.50	U	ug/L	P430586	
		Microcystin YR	0.25	U	ug/L	P430584	
		Saxitoxin	0.50	U	ug/L	P430586	
		Nodularin-R	0.10	U	ug/L	P430584	
2413324	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P430743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P430670	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430840	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P430673	
2413329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P430607	

Sample Location: LAKE SUE FAWSETT RAMP

Collection Date/Time: 05/30/2023 14:22

Field ID: HABCE0128_LakeSue2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2413316	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P430586	
		Cylindrospermopsin	0.12	I	ug/L	P430584	
		Desmethyl microcystin LR	0.25	U	ug/L	P430584	
		Microcystin HILR	0.25	U	ug/L	P430584	
		Microcystin HtyR	0.25	U	ug/L	P430584	
		Microcystin LA	0.37	I	ug/L	P430584	RPD
		Microcystin LF	0.10	U	ug/L	P430584	
		Microcystin LR	0.25	U	ug/L	P430584	
		Microcystin LW	0.25	U	ug/L	P430584	
		Microcystin LY	0.10	U	ug/L	P430584	
		Microcystin RR	0.10	U	ug/L	P430584	
		Microcystin WR	0.50	U	ug/L	P430584	
		Neosaxitoxin	0.50	U	ug/L	P430586	
		Microcystin YR	0.25	U	ug/L	P430584	
		Saxitoxin	0.50	U	ug/L	P430586	
		Nodularin-R	0.10	U	ug/L	P430584	
2413321	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P430743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P430669	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.019		mg N/L	P430840	
	EPA 365.1 Rev. 2.0	Total-P	0.077		mg P/L	P430673	
2413326	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P430607	

Sample Location: LAKE PEARL WOODSIDE VILLAGE RAMP

Collection Date/Time: 05/30/2023 13:33

Field ID: HABCE0178_LakePearl2

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2413317	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P430586	
		Cylindrospermopsin	0.10	U	ug/L	P430584	
		Desmethyl microcystin LR	0.25	U	ug/L	P430584	
		Microcystin HILR	0.25	U	ug/L	P430584	
		Microcystin HtyR	0.25	U	ug/L	P430584	
		Microcystin LA	0.10	U	ug/L	P430584	RPD
		Microcystin LF	0.10	U	ug/L	P430584	
		Microcystin LR	0.25	U	ug/L	P430584	
		Microcystin LW	0.25	U	ug/L	P430584	
		Microcystin LY	0.10	U	ug/L	P430584	
		Microcystin RR	0.10	U	ug/L	P430584	
		Microcystin WR	0.50	U	ug/L	P430584	
		Neosaxitoxin	0.50	U	ug/L	P430586	
		Microcystin YR	0.25	U	ug/L	P430584	
		Saxitoxin	0.50	U	ug/L	P430586	
		Nodularin-R	0.10	U	ug/L	P430584	
2413322	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P430743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P430669	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430840	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P430673	
2413327	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P430607	

Sample Location: CAYWOOD POND SW DOCK

Collection Date/Time: 05/30/2023 09:54

Field ID: HABCE0193_CaywoodPond

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2413318	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P430586	
		Cylindrospermopsin	0.10	U	ug/L	P430584	
		Desmethyl microcystin LR	0.25	U	ug/L	P430584	
		Microcystin HILR	0.25	U	ug/L	P430584	
		Microcystin HtyR	0.25	U	ug/L	P430584	
		Microcystin LA	0.10	U	ug/L	P430584	RPD
		Microcystin LF	0.10	U	ug/L	P430584	
		Microcystin LR	0.89	I	ug/L	P430584	
		Microcystin LW	0.25	U	ug/L	P430584	
		Microcystin LY	0.10	U	ug/L	P430584	
		Microcystin RR	0.10	U	ug/L	P430584	
		Microcystin WR	0.50	U	ug/L	P430584	
		Neosaxitoxin	0.50	U	ug/L	P430586	
		Microcystin YR	0.25	U	ug/L	P430584	
		Saxitoxin	0.50	U	ug/L	P430586	
		Nodularin-R	0.10	U	ug/L	P430584	
2413323	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P430743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P430669	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430840	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P430673	
2413328	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P430607	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430743

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430669

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430670

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430840

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430673

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430607

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P430584

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin H1LR	0.25	U	ug/L
Microcystin HtyR	0.25	U	ug/L
Microcystin LA	0.10	U	ug/L
Microcystin LF	0.10	U	ug/L
Microcystin LR	0.25	U	ug/L
Microcystin LW	0.25	U	ug/L
Microcystin LY	0.10	U	ug/L
Microcystin RR	0.10	U	ug/L
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L
Nodularin-R	0.10	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P430586

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Neosaxitoxin	0.50	U	ug/L
Saxitoxin	0.50	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430669

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	109		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P430584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	115		P	40 - 150
Desmethyl microcystin LR	126		P	40 - 150
Microcystin H1LR	127		P	40 - 150
Microcystin HtyR	114		P	40 - 150
Microcystin LA	104		P	40 - 150
Microcystin LF	98.0		P	40 - 150
Microcystin LR	121		P	40 - 150
Microcystin LW	73.2		P	40 - 150
Microcystin LY	103		P	40 - 150
Microcystin RR	127		P	40 - 150
Microcystin WR	106		P	40 - 150
Microcystin YR	116		P	40 - 150
Nodularin-R	118		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P430586

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	104		P	40 - 150
Neosaxitoxin	97.1		P	40 - 150
Saxitoxin	87.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413302	Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413302	Kjeldahl Nitrogen	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413325	Kjeldahl Nitrogen	107	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413302	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413325	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413306	O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P430584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413242	Cylindrospermopsin	112	99.6	P/P	40 - 150
2413242	Desmethyl microcystin LR	127	109	P/P	40 - 150
2413242	Microcystin H1R	125	109	P/P	40 - 150
2413242	Microcystin HtyR	121	101	P/P	40 - 150
2413242	Microcystin LA	113	79.8	P/P	40 - 150
2413242	Microcystin LF	110	85.6	P/P	40 - 150
2413242	Microcystin LR	124	107	P/P	40 - 150
2413242	Microcystin LW	103	82.1	P/P	40 - 150
2413242	Microcystin LY	84.0	95.4	P/P	40 - 150
2413242	Microcystin RR	132	108	P/P	40 - 150
2413242	Microcystin WR	116	95.6	P/P	40 - 150
2413242	Microcystin YR	111	92.4	P/P	40 - 150
2413242	Nodularin-R	119	103	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P430586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413242	Anatoxin-a	116	118	P/P	40 - 150
2413242	Neosaxitoxin	89.6	89.2	P/P	40 - 150
2413242	Saxitoxin	80.4	81.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413302	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413302	Kjeldahl Nitrogen	0.422	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413325	Kjeldahl Nitrogen	5.06	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413302	NO2NO3-N	0.471	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413325	Total-P	0.513	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P430607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413306	O-Phosphate-P	0.997	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P430584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413242	Cylindrospermopsin	12.0	Spike	P	0 - 30
2413242	Desmethyl microcystin LR	15.3	Spike	P	0 - 30
2413242	Microcystin HtLR	14.3	Spike	P	0 - 30
2413242	Microcystin HtyR	18.0	Spike	P	0 - 30
2413242	Microcystin LA	34.5	Spike	F	0 - 30
2413242	Microcystin LF	24.8	Spike	P	0 - 30
2413242	Microcystin LR	14.7	Spike	P	0 - 30
2413242	Microcystin LW	22.5	Spike	P	0 - 30
2413242	Microcystin LY	12.7	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P430584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413242	Microcystin RR	19.5	Spike	P	0 - 30
2413242	Microcystin WR	19.3	Spike	P	0 - 30
2413242	Microcystin YR	18.1	Spike	P	0 - 30
2413242	Nodularin-R	14.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P430586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413242	Anatoxin-a	1.38	Spike	P	0 - 30
2413242	Neosaxitoxin	0.445	Spike	P	0 - 30
2413242	Saxitoxin	1.86	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2413316
Field Sample ID: HABCE0128_LakeSue2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	112	P	30 - 160
EPA 8321B	Saxitoxin-15N7	70.6	P	30 - 160

Lab Sample ID: 2413317
Field Sample ID: HABCE0178_LakePearl2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	102	P	30 - 160
EPA 8321B	Saxitoxin-15N7	56.0	P	30 - 160

Lab Sample ID: 2413318
Field Sample ID: HABCE0193_CaywoodPond

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	105	P	30 - 160
EPA 8321B	Saxitoxin-15N7	37.5	P	30 - 160

Lab Sample ID: 2413319
Field Sample ID: HABCE0198_StJohnsRiver2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	102	P	30 - 160
EPA 8321B	Saxitoxin-15N7	66.4	P	30 - 160

Lab Sample ID: 2413320
Field Sample ID: HABCE0199_WauseonBay

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	103	P	30 - 160
EPA 8321B	Saxitoxin-15N7	71.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A119493

Included Lab Sample IDs: 2413326, 2413327, 2413328, 2413329, 2413330

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	99.1	P/P	90 - 110
O-Phosphate-P	99.1	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119504

Included Lab Sample IDs: 2413316, 2413317, 2413318, 2413319, 2413320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	114	114	P/P	50 - 160
Desmethyl microcystin LR	124	130	P/P	50 - 160
Microcystin HILR	119	119	P/P	50 - 160
Microcystin HtyR	114	108	P/P	50 - 160
Microcystin LA	103	91.9	P/P	50 - 160
Microcystin LF	97.8	87.5	P/P	50 - 160
Microcystin LR	113	113	P/P	50 - 160
Microcystin LW	88.2	99.3	P/P	50 - 160
Microcystin LY	99.2	83.7	P/P	50 - 160
Microcystin RR	127	133	P/P	50 - 160
Microcystin WR	116	117	P/P	50 - 160
Microcystin YR	105	110	P/P	50 - 160
Nodularin-R	125	125	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A119505

Included Lab Sample IDs: 2413316, 2413317, 2413318, 2413319, 2413320

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	114	110	P/P	50 - 160
Neosaxitoxin	101	102	P/P	50 - 160
Saxitoxin	94.4	93.7	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119547

Included Lab Sample IDs: 2413321, 2413324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119550

Included Lab Sample IDs: 2413321, 2413322, 2413323, 2413324, 2413325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119553

Included Lab Sample IDs: 2413322, 2413323, 2413325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119573

Included Lab Sample IDs: 2413321, 2413322, 2413323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119581

Included Lab Sample IDs: 2413324, 2413325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119596

Included Lab Sample IDs: 2413321, 2413322, 2413323, 2413324, 2413325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	104	P/P	90 - 110

* 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		Precision	
					LCS	SMP
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	99.6	101		1.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	104	103		0.422
	Kjeldahl Nitrogen	108	107	101		5.06
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	106		0.471
EPA 365.1 Rev. 2.0	Total-P	100	103	102		0.513
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.8	101		0.997
EPA 8321B	Anatoxin-a	104	116	118		1.38
	Cylindrospermopsin	115	112	99.6		12.0
	Desmethyl microcystin LR	126	127	109		15.3
	Microcystin H1LR	127	125	109		14.3
	Microcystin HtyR	114	121	101		18.0
	Microcystin LA	104	113	79.8		34.5
	Microcystin LF	98.0	110	85.6		24.8
	Microcystin LR	121	124	107		14.7
	Microcystin LW	73.2	103	82.1		22.5
	Microcystin LY	103	84.0	95.4		12.7
	Microcystin RR	127	132	108		19.5
	Microcystin WR	106	116	95.6		19.3
	Microcystin YR	116	111	92.4		18.1
	Neosaxitoxin	97.1	89.6	89.2		0.445
	Nodularin-R	118	119	103		14.4
	Saxitoxin	87.2	80.4	81.9		1.86

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2413321, 2413322, 2413323, 2413324, 2413325
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2413321, 2413322, 2413323, 2413324, 2413325
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2413321, 2413322, 2413323, 2413324, 2413325
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2413321, 2413322, 2413323, 2413324, 2413325
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2413326, 2413327, 2413328, 2413329, 2413330
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2413316, 2413317, 2413318, 2413319, 2413320
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2413316, 2413317, 2413318, 2413319, 2413320

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	05/31/2023			06/02/2023 15:06	Khloe J Berg	2413321
	05/31/2023			06/02/2023 15:07	Khloe J Berg	2413322
	05/31/2023			06/02/2023 15:09	Khloe J Berg	2413323
	05/31/2023			06/02/2023 15:10	Khloe J Berg	2413324
	05/31/2023			06/02/2023 15:11	Khloe J Berg	2413325
EPA 351.2 Rev. 2.0	05/31/2023	06/02/2023 10:00	Dana G. Hughes	06/05/2023 11:09	Samantha L Bates	2413321
	05/31/2023	06/02/2023 10:00	Dana G. Hughes	06/05/2023 11:11	Samantha L Bates	2413322
	05/31/2023	06/02/2023 10:00	Dana G. Hughes	06/05/2023 11:12	Samantha L Bates	2413323
	05/31/2023	06/02/2023 10:00	Dana G. Hughes	06/05/2023 14:39	Samantha L Bates	2413324
	05/31/2023	06/02/2023 10:00	Dana G. Hughes	06/05/2023 14:41	Samantha L Bates	2413325
EPA 353.2 Rev. 2.0	05/31/2023			06/06/2023 11:06	Beverly Y. Sanders	2413321
	05/31/2023			06/06/2023 11:07	Beverly Y. Sanders	2413322
	05/31/2023			06/06/2023 11:08	Beverly Y. Sanders	2413323
	05/31/2023			06/06/2023 11:09	Beverly Y. Sanders	2413324
	05/31/2023			06/06/2023 11:10	Beverly Y. Sanders	2413325
EPA 365.1 Rev. 2.0	05/31/2023	06/01/2023 11:40	Alexis Price	06/02/2023 13:09	Simonne.V. Calhoun	2413321
	05/31/2023	06/01/2023 11:40	Alexis Price	06/02/2023 13:12	Simonne.V. Calhoun	2413324
	05/31/2023	06/01/2023 11:40	Alexis Price	06/02/2023 13:59	Simonne.V. Calhoun	2413325
	05/31/2023	06/01/2023 11:40	Alexis Price	06/02/2023 14:00	Simonne.V. Calhoun	2413322
	05/31/2023	06/01/2023 11:40	Alexis Price	06/02/2023 14:01	Simonne.V. Calhoun	2413323
EPA 365.1 Rev. 2.0 dissolved	05/31/2023			05/31/2023 14:34	Elise M. Gillis	2413326
	05/31/2023			05/31/2023 14:35	Elise M. Gillis	2413327
	05/31/2023			05/31/2023 14:41	Elise M. Gillis	2413328, 2413329
	05/31/2023			05/31/2023 14:42	Elise M. Gillis	2413330
EPA 8321B	05/31/2023	05/31/2023 13:00	Touraj Touran	05/31/2023 18:37	Touraj Touran	2413316
	05/31/2023	05/31/2023 13:00	Touraj Touran	05/31/2023 18:54	Touraj Touran	2413317
	05/31/2023	05/31/2023 13:00	Touraj Touran	05/31/2023 19:11	Touraj Touran	2413318
	05/31/2023	05/31/2023 13:00	Touraj Touran	05/31/2023 19:27	Touraj Touran	2413319
	05/31/2023	05/31/2023 13:00	Touraj Touran	05/31/2023 19:44	Touraj Touran	2413320
	05/31/2023	05/31/2023 13:00	Touraj Touran	06/01/2023 02:58	Touraj Touran	2413316
	05/31/2023	05/31/2023 13:00	Touraj Touran	06/01/2023 03:12	Touraj Touran	2413317
	05/31/2023	05/31/2023 13:00	Touraj Touran	06/01/2023 03:25	Touraj Touran	2413318
	05/31/2023	05/31/2023 13:00	Touraj Touran	06/01/2023 03:39	Touraj Touran	2413319
	05/31/2023	05/31/2023 13:00	Touraj Touran	06/01/2023 03:53	Touraj Touran	2413320