Chemical Analysis Report

WQAP-2023-06-28-02

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

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-06-12-20**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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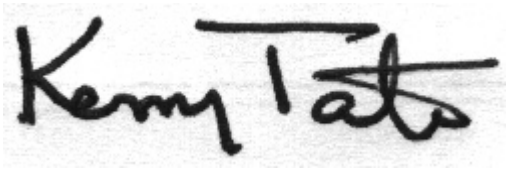
Date Certified: 12-JUL-2023 13:47



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: Lake Rowena near NE corner **Collection Date/Time: 06/27/2023 12:40**

Field ID: HABCE0057_LakeRowena Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2420129	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431852	
		Cylindrospermopsin	0.50		ug/L	P431851	
		Desmethyl microcystin LR	0.25	U	ug/L	P431851	
		Microcystin HilR	0.25	U	ug/L	P431851	
		Microcystin HtyR	0.25	U	ug/L	P431851	
		Microcystin LA	0.17	I	ug/L	P431851	
		Microcystin LF	0.10	U	ug/L	P431851	
		Microcystin LR	0.25	U	ug/L	P431851	
		Microcystin LW	0.25	U	ug/L	P431851	
		Microcystin LY	0.10	U	ug/L	P431851	
		Microcystin RR	0.10	U	ug/L	P431851	
		Microcystin WR	0.50	U	ug/L	P431851	
		Neosaxitoxin	0.50	U	ug/L	P431852	
		Microcystin YR	0.25	U	ug/L	P431851	
		Saxitoxin	0.50	U	ug/L	P431852	
		Nodularin-R	0.10	U	ug/L	P431851	
2420152	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P431992	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P431909	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P432078	
	EPA 365.1 Rev. 2.0	Total-P	0.034		mg P/L	P431903	
2420155	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431892	

Sample Location: Lake Minnehaha - E Dock **Collection Date/Time: 06/27/2023 11:32**

Field ID: HABCE0194_LakeMinnehaha3 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2420130	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431852	
		Cylindrospermopsin	0.19	I	ug/L	P431851	
		Desmethyl microcystin LR	0.25	U	ug/L	P431851	
		Microcystin HilR	0.25	U	ug/L	P431851	
		Microcystin HtyR	0.25	U	ug/L	P431851	
		Microcystin LA	0.10	U	ug/L	P431851	
		Microcystin LF	0.10	U	ug/L	P431851	
		Microcystin LR	0.25	U	ug/L	P431851	
		Microcystin LW	0.25	U	ug/L	P431851	
		Microcystin LY	0.10	U	ug/L	P431851	
		Microcystin RR	0.10	U	ug/L	P431851	
		Microcystin WR	0.50	U	ug/L	P431851	
		Neosaxitoxin	0.50	U	ug/L	P431852	
		Microcystin YR	0.25	U	ug/L	P431851	
		Saxitoxin	0.50	U	ug/L	P431852	
		Nodularin-R	0.10	U	ug/L	P431851	
2420153	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P431992	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P431909	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P432078	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P431903	
2420156	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431892	

Sample Location: Park Lake - W Shore **Collection Date/Time: 06/27/2023 10:15**

Field ID: HABCE0195_ParkLake Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2420131	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P431852	
		Cylindrospermopsin	0.10	U	ug/L	P431851	
		Desmethyl microcystin LR	0.25	U	ug/L	P431851	
		Microcystin HilR	0.25	U	ug/L	P431851	
		Microcystin HtyR	0.25	U	ug/L	P431851	
		Microcystin LA	0.10	U	ug/L	P431851	
		Microcystin LF	0.10	U	ug/L	P431851	
		Microcystin LR	0.65	I	ug/L	P431851	
		Microcystin LW	0.25	U	ug/L	P431851	
		Microcystin LY	0.10	U	ug/L	P431851	
		Microcystin RR	0.10	U	ug/L	P431851	
		Microcystin WR	0.50	U	ug/L	P431851	
		Neosaxitoxin	0.50	U	ug/L	P431852	
		Microcystin YR	0.25	U	ug/L	P431851	
		Saxitoxin	0.50	U	ug/L	P431852	
		Nodularin-R	0.10	U	ug/L	P431851	
2420154	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P431992	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P431909	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P432078	
	EPA 365.1 Rev. 2.0	Total-P	0.044		mg P/L	P431970	
2420157	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P431892	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431992

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431909

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432078

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431903

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431970

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431892

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

Reference Method: EPA 8321B
Batch ID: P431851

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin HilR	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: P431852

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: P431992

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: P431909

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: P432078

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431903

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431970

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431892

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

Reference Method: EPA 8321B
Batch ID: P431851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	87.8		P	40 - 150
Desmethyl microcystin LR	79.7		P	40 - 150
Microcystin HilR	93.2		P	40 - 150
Microcystin HtyR	98.1		P	40 - 150
Microcystin LA	102		P	40 - 150
Microcystin LF	87.9		P	40 - 150
Microcystin LR	84.8		P	40 - 150
Microcystin LW	75.2		P	40 - 150
Microcystin LY	90.5		P	40 - 150
Microcystin RR	77.1		P	40 - 150
Microcystin WR	87.6		P	40 - 150
Microcystin YR	95.1		P	40 - 150
Nodularin-R	90.8		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P431852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	102		P	40 - 150
Neosaxitoxin	83.2		P	40 - 150
Saxitoxin	90.9		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420075	Ammonia-N	95.0	95.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420075	Kjeldahl Nitrogen	97.6	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420152	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431903

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420015	Total-P	102	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431970

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420360	Total-P	97.2	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420051	O-Phosphate-P	102	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P431851

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419770	Cylindrospermopsin	104	103	P/P	40 - 150
2419770	Desmethyl microcystin LR	97.9	104	P/P	40 - 150
2419770	Microcystin HilR	96.0	100	P/P	40 - 150
2419770	Microcystin HtyR	99.0	109	P/P	40 - 150
2419770	Microcystin LA	96.8	115	P/P	40 - 150
2419770	Microcystin LF	107	115	P/P	40 - 150
2419770	Microcystin LR	97.1	104	P/P	40 - 150
2419770	Microcystin LW	71.0	85.5	P/P	40 - 150
2419770	Microcystin LY	106	121	P/P	40 - 150
2419770	Microcystin RR	83.0	82.8	P/P	40 - 150
2419770	Microcystin WR	89.0	100	P/P	40 - 150
2419770	Microcystin YR	103	105	P/P	40 - 150
2419770	Nodularin-R	100	103	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P431852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419770	Anatoxin-a	95.5	80.2	P/P	40 - 150
2419770	Neosaxitoxin	84.5	73.4	P/P	40 - 150
2419770	Saxitoxin	97.8	82.9	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420075	Ammonia-N	0.190	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420075	Kjeldahl Nitrogen	5.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420152	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431903

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420015	Total-P	2.08	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431970

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420360	Total-P	0.392	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P431892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420051	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P431851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419770	Cylindrospermopsin	0.695	Spike	P	0 - 30
2419770	Desmethyl microcystin LR	6.01	Spike	P	0 - 30
2419770	Microcystin HilR	4.61	Spike	P	0 - 30
2419770	Microcystin HtyR	9.23	Spike	P	0 - 30
2419770	Microcystin LA	17.1	Spike	P	0 - 30
2419770	Microcystin LF	7.60	Spike	P	0 - 30
2419770	Microcystin LR	7.10	Spike	P	0 - 30
2419770	Microcystin LW	18.5	Spike	P	0 - 30
2419770	Microcystin LY	13.1	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P431851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419770	Microcystin RR	0.238	Spike	P	0 - 30
2419770	Microcystin WR	11.7	Spike	P	0 - 30
2419770	Microcystin YR	1.07	Spike	P	0 - 30
2419770	Nodularin-R	3.15	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P431852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419770	Anatoxin-a	17.3	Spike	P	0 - 30
2419770	Neosaxitoxin	14.1	Spike	P	0 - 30
2419770	Saxitoxin	16.5	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2420129
Field Sample ID: HABCE0057_LakeRowena

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	70.9	P	30 - 160
EPA 8321B	Saxitoxin-15N7	76.1	P	30 - 160

Lab Sample ID: 2420130
Field Sample ID: HABCE0194_LakeMinnehaha3

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	95.8	P	30 - 160
EPA 8321B	Saxitoxin-15N7	74.9	P	30 - 160

Lab Sample ID: 2420131
Field Sample ID: HABCE0195_ParkLake

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	95.8	P	30 - 160
EPA 8321B	Saxitoxin-15N7	78.1	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A120079
Included Lab Sample IDs: 2420155, 2420156, 2420157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A120080
Included Lab Sample IDs: 2420129, 2420130, 2420131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	102	96.8	P/P	50 - 160
Neosaxitoxin	84.4	82.1	P/P	50 - 160
Saxitoxin	88.7	86.7	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A120090
Included Lab Sample IDs: 2420129, 2420130, 2420131

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	104	99.8	P/P	50 - 160
Desmethyl microcystin LR	100	100	P/P	50 - 160
Microcystin HilR	97.6	96.6	P/P	50 - 160
Microcystin HtyR	103	109	P/P	50 - 160
Microcystin LA	106	118	P/P	50 - 160
Microcystin LF	87.6	69.7	P/P	50 - 160
Microcystin LR	98.2	102	P/P	50 - 160
Microcystin LW	84.8	76.0	P/P	50 - 160
Microcystin LY	107	120	P/P	50 - 160
Microcystin RR	85.7	88.4	P/P	50 - 160
Microcystin WR	95.3	97.3	P/P	50 - 160
Microcystin YR	98.4	105	P/P	50 - 160
Nodularin-R	107	109	P/P	50 - 160

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A120125
Included Lab Sample IDs: 2420152, 2420153, 2420154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A120134
Included Lab Sample IDs: 2420152, 2420153, 2420154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A120159
Included Lab Sample IDs: 2420152, 2420153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A120163
Included Lab Sample IDs: 2420154

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A120182
Included Lab Sample IDs: 2420152, 2420153, 2420154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	101	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	MS
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	95.0	95.2			0.190
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	97.6	105			5.90
EPA 353.2 Rev. 2.0	NO2NO3-N	102	104	104			0.0
EPA 365.1 Rev. 2.0	Total-P	97.8	102	99.8			2.08
	Total-P	96.2	97.2	97.6			0.392
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	102	100			1.32
EPA 8321B	Anatoxin-a	102	95.5	80.2			17.3
	Cylindrospermopsin	87.8	104	103			0.695
	Desmethyl microcystin LR	79.7	97.9	104			6.01
	Microcystin HilR	93.2	96.0	100			4.61
	Microcystin HtyR	98.1	99.0	109			9.23
	Microcystin LA	102	96.8	115			17.1
	Microcystin LF	87.9	107	115			7.60
	Microcystin LR	84.8	97.1	104			7.10
	Microcystin LW	75.2	71.0	85.5			18.5
	Microcystin LY	90.5	106	121			13.1
	Microcystin RR	77.1	83.0	82.8			0.238
	Microcystin WR	87.6	89.0	100			11.7
	Microcystin YR	95.1	103	105			1.07
	Neosaxitoxin	83.2	84.5	73.4			14.1
	Nodularin-R	90.8	100	103			3.15
	Saxitoxin	90.9	97.8	82.9			16.5

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2420152, 2420153, 2420154
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2420152, 2420153, 2420154
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2420152, 2420153, 2420154
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2420152, 2420153, 2420154
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2420155, 2420156, 2420157
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2420129, 2420130, 2420131
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2420129, 2420130, 2420131

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	06/28/2023			06/30/2023 12:08	Khloe J Berg	2420152
	06/28/2023			06/30/2023 12:10	Khloe J Berg	2420153
	06/28/2023			06/30/2023 12:11	Khloe J Berg	2420154
EPA 351.2 Rev. 2.0	06/28/2023	06/29/2023 12:28	Simonne.V. Calhoun	06/30/2023 14:04	Samantha L Bates	2420152
	06/28/2023	06/29/2023 12:28	Simonne.V. Calhoun	06/30/2023 14:06	Samantha L Bates	2420153
	06/28/2023	06/29/2023 12:28	Simonne.V. Calhoun	06/30/2023 14:07	Samantha L Bates	2420154
EPA 353.2 Rev. 2.0	06/28/2023			07/05/2023 11:00	Beverly Y. Sanders	2420152
	06/28/2023			07/05/2023 11:14	Beverly Y. Sanders	2420153
	06/28/2023			07/05/2023 11:15	Beverly Y. Sanders	2420154
EPA 365.1 Rev. 2.0	06/28/2023	06/29/2023 16:14	Adam P Silver	07/05/2023 13:06	James L Waggerby	2420152
	06/28/2023	06/29/2023 16:14	Adam P Silver	07/05/2023 13:07	James L Waggerby	2420153
	06/28/2023	06/30/2023 13:12	Adam P Silver	07/05/2023 15:01	Simonne.V. Calhoun	2420154
EPA 365.1 Rev. 2.0 dissolved	06/28/2023			06/28/2023 15:53	Elise M. Gillis	2420155
	06/28/2023			06/28/2023 15:54	Elise M. Gillis	2420156
	06/28/2023			06/28/2023 15:55	Elise M. Gillis	2420157
EPA 8321B	06/28/2023	06/28/2023 15:30	Hana Lee	06/28/2023 21:01	Tae K Lee	2420129
	06/28/2023	06/28/2023 15:30	Hana Lee	06/28/2023 21:18	Tae K Lee	2420130
	06/28/2023	06/28/2023 15:30	Hana Lee	06/28/2023 21:35	Tae K Lee	2420131
	06/28/2023	06/28/2023 16:00	Hana Lee	06/29/2023 03:05	Tae K Lee	2420129
	06/28/2023	06/28/2023 16:00	Hana Lee	06/29/2023 03:19	Tae K Lee	2420130
	06/28/2023	06/28/2023 16:00	Hana Lee	06/29/2023 03:33	Tae K Lee	2420131