

Chemical Analysis Report

SE-DIST-2023-09-26-01

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

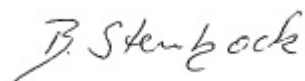
Event Description: **Algal Bloom Response - SE ROC**
Request ID: **RQ-2023-09-18-64**
Customer: **SE-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
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2199 South Rock Road
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 12-OCT-2023 13:32



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 Okeechobee-S308C(Lakeside)

Collection Date/Time: 09/25/2023 10:15

Field ID: SEHAB0062

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2439888	DEP SOP: NU-094-1	Color (true)	38	A	PCU	P435527	
2439891	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P435695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P435939	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P436141	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P435690	
2439894	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.070		mg P/L	P435521	
2439901	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P435489	
		Cylindrospermopsin	0.10	U	ug/L	P435488	
		Desmethyl microcystin LR	0.25	U	ug/L	P435488	
		Microcystin HilR	0.25	U	ug/L	P435488	
		Microcystin HtyR	0.25	U	ug/L	P435488	
		Microcystin LA	0.10	U	ug/L	P435488	
		Microcystin LF	0.10	U	ug/L	P435488	
		Microcystin LR	0.25	U	ug/L	P435488	
		Microcystin LW	0.25	U	ug/L	P435488	
		Microcystin LY	0.10	U	ug/L	P435488	
		Microcystin RR	0.10	U	ug/L	P435488	
		Microcystin WR	0.50	U	ug/L	P435488	
		Neosaxitoxin	0.50	U	ug/L	P435489	
		Microcystin YR	0.25	U	ug/L	P435488	
		Saxitoxin	0.50	U	ug/L	P435489	
		Nodularin-R	0.10	U	ug/L	P435488	

Sample Location: C44 Canal-S308C (Canal side)

Collection Date/Time: 09/25/2023 10:35

Field ID: SEHAB0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2439889	DEP SOP: NU-094-1	Color (true)	37		PCU	P435527	
2439892	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P435695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P435939	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P436141	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P435690	
2439895	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P435521	
2439902	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P435489	
		Cylindrospermopsin	0.10	U	ug/L	P435488	
		Desmethyl microcystin LR	0.25	U	ug/L	P435488	
		Microcystin HilR	0.25	U	ug/L	P435488	
		Microcystin HtyR	0.25	U	ug/L	P435488	
		Microcystin LA	0.10	U	ug/L	P435488	
		Microcystin LF	0.10	U	ug/L	P435488	
		Microcystin LR	0.25	U	ug/L	P435488	
		Microcystin LW	0.25	U	ug/L	P435488	
		Microcystin LY	0.10	U	ug/L	P435488	
		Microcystin RR	0.10	U	ug/L	P435488	
		Microcystin WR	0.50	U	ug/L	P435488	
		Neosaxitoxin	0.50	U	ug/L	P435489	
		Microcystin YR	0.25	U	ug/L	P435488	
		Saxitoxin	0.50	U	ug/L	P435489	
		Nodularin-R	0.10	U	ug/L	P435488	

Sample Location: South Fork New River Rio Nuevo A Condo

Collection Date/Time: 09/25/2023 12:55

Field ID: SEHAB0101

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2439890	DEP SOP: NU-094-1	Color (true)	36		PCU	P435524	
2439893	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P435695	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.3		mg N/L	P435939	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P436141	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P435690	
2439896	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P435521	
2439903	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P435489	
		Cylindrospermopsin	0.10	U	ug/L	P435488	
		Desmethyl microcystin LR	0.25	U	ug/L	P435488	
		Microcystin H1LR	0.25	U	ug/L	P435488	
		Microcystin HtyR	0.25	U	ug/L	P435488	
		Microcystin LA	0.10	U	ug/L	P435488	
		Microcystin LF	0.10	U	ug/L	P435488	
		Microcystin LR	0.25	U	ug/L	P435488	
		Microcystin LW	0.25	U	ug/L	P435488	
		Microcystin LY	0.10	U	ug/L	P435488	
		Microcystin RR	0.10	I	ug/L	P435488	
		Microcystin WR	0.50	U	ug/L	P435488	
		Neosaxitoxin	0.50	U	ug/L	P435489	
		Microcystin YR	0.25	U	ug/L	P435488	
		Saxitoxin	0.50	U	ug/L	P435489	
		Nodularin-R	0.10	U	ug/L	P435488	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P435524

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P435527

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435695

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435939

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436141

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435690

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

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

Reference Method: EPA 8321B
Batch ID: P435488

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin HIR	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P435488

Component	Result	Code	Units
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L
Nodularin-R	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P435489

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: DEP SOP: NU-094-1
Batch ID: P435524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: DEP SOP: NU-094-1
Batch ID: P435527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435695

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: P435939

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: P436141

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: P435690

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

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

Reference Method: EPA 8321B
Batch ID: P435488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	99.9		P	40 - 160
Desmethyl microcystin LR	119		P	40 - 160
Microcystin HIR	108		P	40 - 160
Microcystin HtyR	110		P	40 - 160
Microcystin LA	107		P	40 - 160
Microcystin LF	99.2		P	40 - 160
Microcystin LR	106		P	40 - 160
Microcystin LW	93.6		P	40 - 160
Microcystin LY	94.2		P	40 - 160
Microcystin RR	105		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P435488

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	105		P	40 - 160
Microcystin YR	104		P	40 - 160
Nodularin-R	106		P	40 - 160

Reference Method: EPA 8321B
Batch ID: P435489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	105		P	40 - 150
Neosaxitoxin	96.3		P	40 - 150
Saxitoxin	97.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435695

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439799	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439930	Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439919	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439919	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439824	O-Phosphate-P	98.3	98.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P435488

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439756	Cylindrospermopsin	89.1	109	P/P	40 - 160
2439756	Desmethyl microcystin LR	120	124	P/P	40 - 160
2439756	Microcystin HiLR	108	112	P/P	40 - 160
2439756	Microcystin HtyR	105	112	P/P	40 - 160
2439756	Microcystin LA	102	109	P/P	40 - 160
2439756	Microcystin LF	115	122	P/P	40 - 160
2439756	Microcystin LR	98.6	104	P/P	40 - 160
2439756	Microcystin LW	93.4	102	P/P	40 - 160
2439756	Microcystin LY	103	93.9	P/P	40 - 160
2439756	Microcystin RR	98.7	106	P/P	40 - 160
2439756	Microcystin WR	103	111	P/P	40 - 160
2439756	Microcystin YR	100	106	P/P	40 - 160
2439756	Nodularin-R	99.2	109	P/P	40 - 160

Reference Method: EPA 8321B
Batch ID: P435489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439756	Anatoxin-a	107	110	P/P	40 - 150
2439756	Neosaxitoxin	70.0	72.6	P/P	40 - 150
2439756	Saxitoxin	59.4	62.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P435524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439820	Color (true)	1.74	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P435527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439888	Color (true)	9.01	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439799	Ammonia-N	0.393	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P435939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439930	Kjeldahl Nitrogen	0.675	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439919	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439919	Total-P	0.0691	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439824	O-Phosphate-P	0.406	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P435488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439756	Cylindrospermopsin	19.7	Spike	P	0 - 30
2439756	Desmethyl microcystin LR	4.00	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P435488

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439756	Microcystin HII R	4.05	Spike	P	0 - 30
2439756	Microcystin Hty R	6.72	Spike	P	0 - 30
2439756	Microcystin LA	7.17	Spike	P	0 - 30
2439756	Microcystin LF	5.37	Spike	P	0 - 30
2439756	Microcystin LR	5.56	Spike	P	0 - 30
2439756	Microcystin LW	8.73	Spike	P	0 - 30
2439756	Microcystin LY	9.12	Spike	P	0 - 30
2439756	Microcystin RR	6.98	Spike	P	0 - 30
2439756	Microcystin WR	6.87	Spike	P	0 - 30
2439756	Microcystin YR	5.90	Spike	P	0 - 30
2439756	Nodularin-R	8.99	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P435489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439756	Anatoxin-a	2.31	Spike	P	0 - 30
2439756	Neosaxitoxin	3.54	Spike	P	0 - 30
2439756	Saxitoxin	4.33	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2439901
Field Sample ID: SEHAB0062

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	109	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	74.2	P	30 - 160

Lab Sample ID: 2439902
Field Sample ID: SEHAB0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	106	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	76.3	P	30 - 160

Lab Sample ID: 2439903
Field Sample ID: SEHAB0101

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	104	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	89.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A121772

Included Lab Sample IDs: 2439894, 2439895, 2439896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.6	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A121773

Included Lab Sample IDs: 2439888, 2439889, 2439890

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	100	P/P	90 - 110
Color (true)	99.3	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A121803

Included Lab Sample IDs: 2439901, 2439902, 2439903

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	100	96.3	P/P	60 - 160
Desmethyl microcystin LR	111	101	P/P	50 - 160
Microcystin HILR	98.1	90.0	P/P	60 - 160
Microcystin HtyR	96.4	90.7	P/P	60 - 160
Microcystin LA	95.8	90.6	P/P	50 - 160
Microcystin LF	98.4	89.8	P/P	60 - 160
Microcystin LR	90.6	81.8	P/P	60 - 160
Microcystin LW	78.2	77.0	P/P	60 - 160
Microcystin LY	90.1	83.8	P/P	60 - 160
Microcystin RR	98.4	93.7	P/P	60 - 160
Microcystin WR	93.1	93.2	P/P	60 - 160
Microcystin YR	85.6	84.2	P/P	60 - 160
Nodularin-R	96.1	86.2	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121829

Included Lab Sample IDs: 2439891, 2439892, 2439893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A121836

Included Lab Sample IDs: 2439901, 2439902, 2439903

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	112	112	P/P	50 - 160
Neosaxitoxin	111	111	P/P	50 - 160
Saxitoxin	113	113	P/P	50 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121845

Included Lab Sample IDs: 2439891, 2439892, 2439893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	97.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122012

Included Lab Sample IDs: 2439891, 2439892, 2439893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122047

Included Lab Sample IDs: 2439891, 2439892, 2439893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	92.6	P/P	90 - 110
Kjeldahl Nitrogen	96.3	100	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		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	102				1.74	
	Color (true)	100				9.01	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8	102	102			0.393
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	105	104			0.675
EPA 353.2 Rev. 2.0	NO2NO3-N	103	98.4	98.4			0.0
EPA 365.1 Rev. 2.0	Total-P	99.2	104	104			0.0691
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	98.3	98.7			0.406
EPA 8321B	Anatoxin-a	105	107	110			2.31
	Cylindrospermopsin	99.9	89.1	109			19.7
	Desmethyl microcystin LR	119	120	124			4.00
	Microcystin HilR	108	108	112			4.05
	Microcystin HtyR	110	105	112			6.72
	Microcystin LA	107	102	109			7.17
	Microcystin LF	99.2	115	122			5.37
	Microcystin LR	106	98.6	104			5.56
	Microcystin LW	93.6	93.4	102			8.73
	Microcystin LY	94.2	103	93.9			9.12
	Microcystin RR	105	98.7	106			6.98
	Microcystin WR	105	103	111			6.87
	Microcystin YR	104	100	106			5.90
	Neosaxitoxin	96.3	70.0	72.6			3.54
	Nodularin-R	106	99.2	109			8.99
	Saxitoxin	97.2	59.4	62.1			4.33

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2439888, 2439889, 2439890
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2439891, 2439892, 2439893
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2439891, 2439892, 2439893
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2439891, 2439892, 2439893
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2439891, 2439892, 2439893
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2439894, 2439895, 2439896
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2439901, 2439902, 2439903
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2439901, 2439902, 2439903

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	09/26/2023			09/26/2023 15:39	Alexis Price	2439890
	09/26/2023			09/26/2023 16:07	Alexis Price	2439888
	09/26/2023			09/26/2023 16:08	Alexis Price	2439889
EPA 350.1 Rev. 2.0	09/26/2023			09/28/2023 14:15	Ping Hua	2439891
	09/26/2023			09/28/2023 14:17	Ping Hua	2439892
	09/26/2023			09/28/2023 14:18	Ping Hua	2439893
EPA 351.2 Rev. 2.0	09/26/2023	10/04/2023 14:26	Simonne.V. Calhoun	10/10/2023 13:13	Samantha L Bates	2439891
	09/26/2023	10/04/2023 14:26	Simonne.V. Calhoun	10/10/2023 13:15	Samantha L Bates	2439892
	09/26/2023	10/04/2023 14:26	Simonne.V. Calhoun	10/10/2023 13:19	Samantha L Bates	2439893
EPA 353.2 Rev. 2.0	09/26/2023			10/06/2023 12:38	Fadila Guebre	2439891
	09/26/2023			10/06/2023 12:39	Fadila Guebre	2439892
	09/26/2023			10/06/2023 12:40	Fadila Guebre	2439893
EPA 365.1 Rev. 2.0	09/26/2023	09/28/2023 13:36	Alexis Price	09/29/2023 11:05	Chandler E Cox	2439891
	09/26/2023	09/28/2023 13:36	Alexis Price	09/29/2023 11:06	Chandler E Cox	2439892
	09/26/2023	09/28/2023 13:36	Alexis Price	09/29/2023 11:07	Chandler E Cox	2439893
EPA 365.1 Rev. 2.0 dissolved	09/26/2023			09/26/2023 15:17	Elise M. Gillis	2439894
	09/26/2023			09/26/2023 15:18	Elise M. Gillis	2439895
	09/26/2023			09/26/2023 15:19	Elise M. Gillis	2439896
EPA 8321B	09/26/2023	09/27/2023 12:00	Hana Lee	09/27/2023 18:23	Tae K Lee	2439901
	09/26/2023	09/27/2023 12:00	Hana Lee	09/27/2023 18:38	Tae K Lee	2439902
	09/26/2023	09/27/2023 12:00	Hana Lee	09/27/2023 18:54	Tae K Lee	2439903
	09/26/2023	09/27/2023 12:00	Hana Lee	09/28/2023 15:02	Tae K Lee	2439901
	09/26/2023	09/27/2023 12:00	Hana Lee	09/28/2023 15:16	Tae K Lee	2439902
	09/26/2023	09/27/2023 12:00	Hana Lee	09/28/2023 15:30	Tae K Lee	2439903