

Chemical Analysis Report

CEN-DIST-2023-11-30-01

Florida DEP Laboratory
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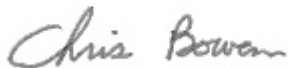
Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2023-10-23-53**
Customer: **CEN-DIST**
Project ID: **BLOOM-RESP**

Send Reports to:
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 14-DEC-2023 10:26



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: Pioneer Lake - NE Shore

Collection Date/Time: 11/29/2023 09:27

Field ID: HABCE0190

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453679	DEP SOP: NU-094-1	Color (true)	42		PCU	P438366	
2453680	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P438568	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P438391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.54		mg N/L	P438473	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P438486	
2453681	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P438370	
2453685	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P438199	
		Cylindrospermopsin	0.10	U	ug/L	P438198	
		Desmethyl microcystin LR	0.25	U	ug/L	P438198	
		Microcystin HilR	0.25	U	ug/L	P438198	
		Microcystin HtyR	0.25	U	ug/L	P438198	
		Microcystin LA	0.10	U	ug/L	P438198	
		Microcystin LF	0.10	U	ug/L	P438198	
		Microcystin LR	0.62	I	ug/L	P438198	
		Microcystin LW	0.25	U	ug/L	P438198	
		Microcystin LY	0.10	U	ug/L	P438198	
		Microcystin RR	0.10	U	ug/L	P438198	
		Microcystin WR	0.50	U	ug/L	P438198	
		Neosaxitoxin	0.50	U	ug/L	P438199	
		Microcystin YR	0.25	U	ug/L	P438198	
		Saxitoxin	0.50	U	ug/L	P438199	
		Nodularin-R	0.10	U	ug/L	P438198	

Sample Location: Pioneer Lake - NE Shore

Collection Date/Time: 11/29/2023 09:38

Field ID: FB_11292023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453682	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P438367	
2453683	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P438568	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P438391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P438473	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P438486	
2453684	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P438370	
2453686	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P438199	
		Cylindrospermopsin	0.10	U	ug/L	P438198	
		Desmethyl microcystin LR	0.25	U	ug/L	P438198	
		Microcystin HiLR	0.25	U	ug/L	P438198	
		Microcystin HtyR	0.25	U	ug/L	P438198	
		Microcystin LA	0.10	U	ug/L	P438198	
		Microcystin LF	0.10	U	ug/L	P438198	
		Microcystin LR	0.25	U	ug/L	P438198	
		Microcystin LW	0.25	U	ug/L	P438198	
		Microcystin LY	0.10	U	ug/L	P438198	
		Microcystin RR	0.10	U	ug/L	P438198	
		Microcystin WR	0.50	U	ug/L	P438198	
		Neosaxitoxin	0.50	U	ug/L	P438199	
		Microcystin YR	0.25	U	ug/L	P438198	
		Saxitoxin	0.50	U	ug/L	P438199	
		Nodularin-R	0.10	U	ug/L	P438198	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438366

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P438367

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438568

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P438370

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

Reference Method: EPA 8321B
Batch ID: P438198

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: P438198

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: P438199

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: P438366

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P438367

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438568

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P438370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.1		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P438198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	76.5		P	40 - 150
Desmethyl microcystin LR	114		P	40 - 150
Microcystin HIR	121		P	40 - 150
Microcystin HtyR	111		P	40 - 150
Microcystin LA	105		P	40 - 150
Microcystin LF	119		P	40 - 150
Microcystin LR	113		P	40 - 150
Microcystin LW	110		P	40 - 150
Microcystin LY	119		P	40 - 150
Microcystin RR	84.6		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P438198

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Microcystin WR	123		P	40 - 150
Microcystin YR	119		P	40 - 150
Nodularin-R	93.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	92.6		P	40 - 150
Neosaxitoxin	89.7		P	40 - 150
Saxitoxin	95.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453695	Ammonia-N	97.0	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453656	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453628	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453629	Total-P	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P438370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453681	O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P438198

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452776	Cylindrospermopsin	79.6	76.2	P/P	40 - 150
2452776	Desmethyl microcystin LR	110	109	P/P	40 - 150
2452776	Microcystin HiLR	125	122	P/P	40 - 150
2452776	Microcystin HtyR	112	119	P/P	40 - 150
2452776	Microcystin LA	101	113	P/P	40 - 150
2452776	Microcystin LF	127	127	P/P	40 - 150
2452776	Microcystin LR	111	112	P/P	40 - 150
2452776	Microcystin LW	124	130	P/P	40 - 150
2452776	Microcystin LY	116	119	P/P	40 - 150
2452776	Microcystin RR	80.6	85.9	P/P	40 - 150
2452776	Microcystin WR	125	127	P/P	40 - 150
2452776	Microcystin YR	120	126	P/P	40 - 150
2452776	Nodularin-R	91.7	94.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452776	Anatoxin-a	97.9	97.1	P/P	40 - 150
2452776	Neosaxitoxin	84.2	86.2	P/P	40 - 150
2452776	Saxitoxin	93.0	98.5	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453625	Color (true)	1.10	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P438367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453693	Color (true)	0.264	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453695	Ammonia-N	1.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453656	Kjeldahl Nitrogen	1.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453628	NO2NO3-N	0.615	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453629	Total-P	2.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P438370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453681	O-Phosphate-P	0.698	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P438198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452776	Cylindrospermopsin	4.42	Spike	P	0 - 30
2452776	Desmethyl microcystin LR	1.54	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P438198

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452776	Microcystin HII R	2.01	Spike	P	0 - 30
2452776	Microcystin Hty R	5.87	Spike	P	0 - 30
2452776	Microcystin LA	11.0	Spike	P	0 - 30
2452776	Microcystin LF	0.593	Spike	P	0 - 30
2452776	Microcystin LR	0.897	Spike	P	0 - 30
2452776	Microcystin LW	5.41	Spike	P	0 - 30
2452776	Microcystin LY	2.39	Spike	P	0 - 30
2452776	Microcystin RR	6.44	Spike	P	0 - 30
2452776	Microcystin WR	1.58	Spike	P	0 - 30
2452776	Microcystin YR	5.09	Spike	P	0 - 30
2452776	Nodularin-R	3.03	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P438199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452776	Anatoxin-a	0.846	Spike	P	0 - 30
2452776	Neosaxitoxin	2.42	Spike	P	0 - 30
2452776	Saxitoxin	5.74	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2453685
Field Sample ID: HABCE0190

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	63.7	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	115	P	30 - 160

Lab Sample ID: 2453686
Field Sample ID: FB_11292023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Anatoxin-a 13C4	52.1	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	104	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122963

Included Lab Sample IDs: 2453679, 2453682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 110
Color (true)	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A122964

Included Lab Sample IDs: 2453681, 2453684

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A122968

Included Lab Sample IDs: 2453685, 2453686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	81.3	81.1	P/P	50 - 160
Desmethyl microcystin LR	121	132	P/P	50 - 160
Microcystin HILR	118	132	P/P	50 - 160
Microcystin HtyR	122	128	P/P	50 - 160
Microcystin LA	114	118	P/P	50 - 160
Microcystin LF	125	126	P/P	50 - 160
Microcystin LR	129	129	P/P	50 - 160
Microcystin LW	118	121	P/P	50 - 160
Microcystin LY	125	121	P/P	50 - 160
Microcystin RR	83.8	85.5	P/P	50 - 160
Microcystin WR	128	130	P/P	50 - 160
Microcystin YR	130	130	P/P	50 - 160
Nodularin-R	98.0	96.7	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A122969

Included Lab Sample IDs: 2453685, 2453686

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	62.4	64.6	P/P	50 - 160
Neosaxitoxin	60.9	60.5	P/P	50 - 160
Saxitoxin	78.0	76.4	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A123014

Included Lab Sample IDs: 2453680, 2453683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A123024

Included Lab Sample IDs: 2453680, 2453683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	92.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123055

Included Lab Sample IDs: 2453680, 2453683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123057

Included Lab Sample IDs: 2453680, 2453683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	97.6	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				1.10	
	Color (true)	101				0.264	
EPA 350.1 Rev. 2.0	Ammonia-N	102	97.0	95.8			1.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	105	107			1.38
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.5				0.615
EPA 365.1 Rev. 2.0	Total-P	102	103	106			2.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.1	101	100			0.698
EPA 8321B	Anatoxin-a	92.6	97.9	97.1			0.846
	Cylindrospermopsin	76.5	79.6	76.2			4.42
	Desmethyl microcystin LR	114	110	109			1.54
	Microcystin HiLR	121	125	122			2.01
	Microcystin HtyR	111	112	119			5.87
	Microcystin LA	105	101	113			11.0
	Microcystin LF	119	127	127			0.593
	Microcystin LR	113	111	112			0.897
	Microcystin LW	110	124	130			5.41
	Microcystin LY	119	116	119			2.39
	Microcystin RR	84.6	80.6	85.9			6.44
	Microcystin WR	123	125	127			1.58
	Microcystin YR	119	120	126			5.09
	Neosaxitoxin	89.7	84.2	86.2			2.42
	Nodularin-R	93.0	91.7	94.6			3.03
	Saxitoxin	95.5	93.0	98.5			5.74

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2453679, 2453682
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2453680, 2453683
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2453680, 2453683
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2453680, 2453683
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2453680, 2453683
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2453681, 2453684
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2453685, 2453686
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2453685, 2453686

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	11/30/2023			11/30/2023 14:00	Blanca Fach	2453679
	11/30/2023			11/30/2023 14:05	Blanca Fach	2453682
EPA 350.1 Rev. 2.0	11/30/2023			12/06/2023 11:44	Ping Hua	2453680
	11/30/2023			12/06/2023 11:46	Ping Hua	2453683
EPA 351.2 Rev. 2.0	11/30/2023	12/01/2023 12:09	Simonne.V. Calhoun	12/05/2023 12:17	Samantha L Bates	2453680
	11/30/2023	12/01/2023 12:09	Simonne.V. Calhoun	12/05/2023 12:21	Samantha L Bates	2453683
EPA 353.2 Rev. 2.0	11/30/2023			12/04/2023 13:25	Fadila Guebre	2453680
	11/30/2023			12/04/2023 13:26	Fadila Guebre	2453683
EPA 365.1 Rev. 2.0	11/30/2023	12/05/2023 12:17	Adam P Silver	12/06/2023 13:40	James L Waggeberby	2453683
	11/30/2023	12/05/2023 12:17	Adam P Silver	12/06/2023 13:43	James L Waggeberby	2453680
EPA 365.1 Rev. 2.0 dissolved	11/30/2023			11/30/2023 15:15	Elise M. Gillis	2453681
	11/30/2023			11/30/2023 15:21	Elise M. Gillis	2453684
EPA 8321B	11/30/2023	11/30/2023 12:00	Hana Lee	11/30/2023 16:49	Tae K Lee	2453685
	11/30/2023	11/30/2023 12:00	Hana Lee	11/30/2023 17:05	Tae K Lee	2453686
	11/30/2023	11/30/2023 12:00	Hana Lee	11/30/2023 20:15	Tae K Lee	2453685
	11/30/2023	11/30/2023 12:00	Hana Lee	11/30/2023 20:28	Tae K Lee	2453686