

Chemical Analysis Report

WQAP-2021-08-05-01

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

Event Description: **Algal Bloom Response- NEROC**
Request ID: **RQ-2021-07-26-26**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256
Attn: Jeremy Parrish

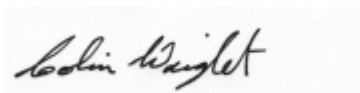
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This Report replaces the previous Report Serial Number: 0131970

Report Comment: Results for sample with Field ID NEHAB0026 have been Y qualified.

Revision certified by: Colin Wright, Program Administrator

Date Certified: 01-SEP-2021 13:59



NON-CONFORMANCE REPORT INCLUDED

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: Christopher Creek below San Jose Blvd

Collection Date/Time: 08/04/2021 11:30

Field ID: NEHAB0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2267805	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P401985	
		Cylindrospermopsin	0.10	U	ug/L	P401985	
		Desmethyl microcystin LR	0.25	U	ug/L	P401985	
		Microcystin HilR**	0.25	U	ug/L	P401985	
		Microcystin HtyR**	0.25	U	ug/L	P401985	
		Microcystin LA	0.10	U	ug/L	P401985	
		Microcystin LF	0.10	U	ug/L	P401985	
		Microcystin LR	1.0		ug/L	P401985	
		Microcystin LW	0.25	U	ug/L	P401985	
		Microcystin LY	0.10	U	ug/L	P401985	
		Microcystin RR	0.10	U	ug/L	P401985	
		Microcystin WR	0.50	U	ug/L	P401985	
		Microcystin YR	0.25	U	ug/L	P401985	
		Nodularin-R**	0.10	U	ug/L	P401985	
2267814	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P402386	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P402474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P402108	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P402119	
2267817	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P402067	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LSJR end of Oakvale Rd

Collection Date/Time: 08/04/2021 13:40

Field ID: NEHAB0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2267806	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P401985	
		Cylindrospermopsin	0.10	U	ug/L	P401985	
		Desmethyl microcystin LR	0.25	U	ug/L	P401985	
		Microcystin HIR**	0.25	U	ug/L	P401985	
		Microcystin HtyR**	0.25	U	ug/L	P401985	
		Microcystin LA	0.10	U	ug/L	P401985	
		Microcystin LF	0.10	U	ug/L	P401985	
		Microcystin LR	0.25	U	ug/L	P401985	
		Microcystin LW	0.25	U	ug/L	P401985	
		Microcystin LY	0.10	U	ug/L	P401985	
		Microcystin RR	0.10	U	ug/L	P401985	
		Microcystin WR	0.50	U	ug/L	P401985	
		Microcystin YR	0.25	U	ug/L	P401985	
		Nodularin-R**	0.10	U	ug/L	P401985	
2267815	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P402386	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P402474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P402108	
	EPA 365.1 Rev. 2.0	Total-P	0.076		mg P/L	P402119	
2267818	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P402067	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: LSJR @ Mandarin Pointe

Collection Date/Time: 08/04/2021 14:30

Field ID: NEHAB0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2267807	EPA 8321B	Anatoxin-a	0.25	UY	ug/L	P401985	
		Cylindrospermopsin	0.10	UY	ug/L	P401985	
		Desmethyl microcystin LR	0.25	UY	ug/L	P401985	
		Microcystin HILR**	0.25	UY	ug/L	P401985	
		Microcystin HtyR**	0.25	UY	ug/L	P401985	
		Microcystin LA	0.10	UY	ug/L	P401985	
		Microcystin LF	0.10	UY	ug/L	P401985	
		Microcystin LR	0.25	UY	ug/L	P401985	
		Microcystin LW	0.25	UY	ug/L	P401985	
		Microcystin LY	0.10	UY	ug/L	P401985	
		Microcystin RR	0.10	UY	ug/L	P401985	
		Microcystin WR	0.50	UY	ug/L	P401985	
		Microcystin YR	0.25	UY	ug/L	P401985	
		Nodularin-R**	0.10	UY	ug/L	P401985	
2267816	EPA 350.1 Rev. 2.0	Ammonia-N	0.020	Y	mg N/L	P402386	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.89	Y	mg N/L	P402474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021	Y	mg N/L	P402108	
	EPA 365.1 Rev. 2.0	Total-P	0.090	Y	mg P/L	P402119	
2267819	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.043	Y	mg P/L	P402067	

Ref. Method and Comment:

EPA 8321B: Y - Sample was received with inadequate sample preservation; see NCR report.

EPA 350.1 Rev. 2.0: Sample was not preserved on ice within 15 minutes of collection.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample. Sample was not preserved on ice within 15 minutes of collection.

EPA 353.2 Rev. 2.0: Sample was not preserved on ice within 15 minutes of collection.

EPA 365.1 Rev. 2.0: Total-P: Sample was not preserved on ice within 15 minutes of collection.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Sample was not preserved on ice within 15 minutes of collection.

Non-Conformance Report

NCR ID: 9012

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
WQAP-2021-08-05-01	TLH-2021-08-05-68	2267807	
WQAP-2021-08-05-01	TLH-2021-08-05-73	2267816	
WQAP-2021-08-05-01	TLH-2021-08-05-73	2267819	

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Samples were not properly preserved on ice within 15 minutes of collection; the sampler indicated that samples were placed on ice 35 minutes after collection.

Resolution: Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 9/1/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402386

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402474

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P402108

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P402119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402067

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

Reference Method: EPA 8321B
Batch ID: P401985

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402386

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402474

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: P402108

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: P402119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P402067

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

Reference Method: EPA 8321B
Batch ID: P401985

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	105		P	40 - 150
Cylindrospermopsin	120		P	40 - 150
Desmethyl microcystin LR	71.9		P	40 - 150
Microcystin HIR	85.3		P	40 - 150
Microcystin HtyR	77.5		P	40 - 150
Microcystin LA	91.1		P	40 - 150
Microcystin LF	106		P	40 - 150
Microcystin LR	77.0		P	40 - 150
Microcystin LW	98.0		P	40 - 150
Microcystin LY	91.5		P	40 - 150
Microcystin RR	95.5		P	40 - 150
Microcystin WR	72.6		P	40 - 150
Microcystin YR	87.7		P	40 - 150
Nodularin-R	97.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267792	Ammonia-N	98.8	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267814	NO2NO3-N	96.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267815	Total-P	107	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P402067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267817	O-Phosphate-P	98.1	97.1	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P401985

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2267068	Anatoxin-a	91.1	90.0	P/P	40 - 150
2267068	Cylindrospermopsin	110	104	P/P	40 - 150
2267068	Desmethyl microcystin LR	70.1	72.9	P/P	40 - 150
2267068	Microcystin H1LR	78.5	80.8	P/P	40 - 150
2267068	Microcystin HtyR	73.2	78.2	P/P	40 - 150
2267068	Microcystin LA	83.8	90.6	P/P	40 - 150
2267068	Microcystin LF	85.5	89.4	P/P	40 - 150
2267068	Microcystin LR	76.6	81.6	P/P	40 - 150
2267068	Microcystin LW	83.4	92.7	P/P	40 - 150
2267068	Microcystin LY	84.0	104	P/P	40 - 150
2267068	Microcystin RR	86.5	89.5	P/P	40 - 150
2267068	Microcystin WR	68.5	75.7	P/P	40 - 150
2267068	Microcystin YR	85.6	86.7	P/P	40 - 150
2267068	Nodularin-R	91.9	97.1	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402386

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267792	Ammonia-N	0.577	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P402474

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267233	Kjeldahl Nitrogen	4.85	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P402108

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267814	NO2NO3-N	0.222	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P402119

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267815	Total-P	1.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P402067

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267817	O-Phosphate-P	0.619	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P401985

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2267068	Anatoxin-a	1.19	Spike	P	0 - 30
2267068	Cylindrospermopsin	5.32	Spike	P	0 - 30
2267068	Desmethyl microcystin LR	3.84	Spike	P	0 - 30
2267068	Microcystin HtIR	2.86	Spike	P	0 - 30
2267068	Microcystin HtyR	6.60	Spike	P	0 - 30
2267068	Microcystin LA	7.80	Spike	P	0 - 30
2267068	Microcystin LF	4.53	Spike	P	0 - 30
2267068	Microcystin LR	6.11	Spike	P	0 - 30
2267068	Microcystin LW	10.6	Spike	P	0 - 30
2267068	Microcystin LY	21.3	Spike	P	0 - 30
2267068	Microcystin RR	3.43	Spike	P	0 - 30
2267068	Microcystin WR	9.91	Spike	P	0 - 30
2267068	Microcystin YR	1.31	Spike	P	0 - 30
2267068	Nodularin-R	5.59	Spike	P	0 - 30

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2267805
Field Sample ID: NEHAB0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	81.7	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	62.5	P	30 - 160

Lab Sample ID: 2267806
Field Sample ID: NEHAB0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	81.0	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	64.0	P	30 - 160

Lab Sample ID: 2267807
Field Sample ID: NEHAB0026

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	83.2	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	64.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107065

Included Lab Sample IDs: 2267817, 2267818, 2267819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.2	P/P	90 - 110
O-Phosphate-P	99.9	99.4	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A107066

Included Lab Sample IDs: 2267805, 2267806, 2267807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	108	109	P/P	50 - 160
Cylindrospermopsin	122	117	P/P	60 - 160
Desmethyl microcystin LR	81.7	83.9	P/P	60 - 160
Microcystin H1R	89.4	90.8	P/P	60 - 160
Microcystin HtyR	89.8	92.2	P/P	60 - 160
Microcystin LA	108	111	P/P	50 - 160
Microcystin LF	133	114	P/P	60 - 160
Microcystin LR	78.1	83.0	P/P	60 - 160
Microcystin LW	123	130	P/P	60 - 160
Microcystin LY	119	106	P/P	60 - 160
Microcystin RR	100	102	P/P	60 - 160
Microcystin WR	90.1	95.1	P/P	60 - 160
Microcystin YR	94.3	95.6	P/P	60 - 160
Nodularin-R	106	108	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107091

Included Lab Sample IDs: 2267814, 2267815, 2267816

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107129

Included Lab Sample IDs: 2267814, 2267815, 2267816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107211

Included Lab Sample IDs: 2267814, 2267815, 2267816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107273

Included Lab Sample IDs: 2267814, 2267815, 2267816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.8	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	98.8	98.0			0.577
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108					4.85
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	96.8				0.222
EPA 365.1 Rev. 2.0	Total-P	106	107	106			1.22
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	98.1	97.1			0.619
EPA 8321B	Anatoxin-a	105	91.1	90.0			1.19
	Cylindrospermopsin	120	110	104			5.32
	Desmethyl microcystin LR	71.9	70.1	72.9			3.84
	Microcystin HiLR	85.3	78.5	80.8			2.86
	Microcystin HtyR	77.5	73.2	78.2			6.60
	Microcystin LA	91.1	83.8	90.6			7.80
	Microcystin LF	106	85.5	89.4			4.53
	Microcystin LR	77.0	76.6	81.6			6.11
	Microcystin LW	98.0	83.4	92.7			10.6
	Microcystin LY	91.5	84.0	104			21.3
	Microcystin RR	95.5	86.5	89.5			3.43
	Microcystin WR	72.6	68.5	75.7			9.91
	Microcystin YR	87.7	85.6	86.7			1.31
	Nodularin-R	97.7	91.9	97.1			5.59

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2267814, 2267815, 2267816
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2267814, 2267815, 2267816
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2267814, 2267815, 2267816
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2267814, 2267815, 2267816
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2267817, 2267818, 2267819
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2267805, 2267806, 2267807

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	08/05/2021			08/12/2021 12:18	Roberta Tatti	2267814
	08/05/2021			08/12/2021 12:19	Roberta Tatti	2267815
	08/05/2021			08/12/2021 12:20	Roberta Tatti	2267816
EPA 351.2 Rev. 2.0	08/05/2021	08/13/2021 13:07	Madeline Gruver	08/16/2021 15:20	Virginia P. Brown	2267814
	08/05/2021	08/13/2021 13:07	Madeline Gruver	08/16/2021 15:21	Virginia P. Brown	2267815
	08/05/2021	08/13/2021 13:07	Madeline Gruver	08/16/2021 15:23	Virginia P. Brown	2267816
EPA 353.2 Rev. 2.0	08/05/2021			08/06/2021 11:22	Beverly Y. Sanders	2267814
	08/05/2021			08/06/2021 11:28	Beverly Y. Sanders	2267815
	08/05/2021			08/06/2021 11:29	Beverly Y. Sanders	2267816
EPA 365.1 Rev. 2.0	08/05/2021	08/09/2021 14:57	Simonne.V. Calhoun	08/10/2021 08:19	Shengyu Ding	2267814
	08/05/2021	08/09/2021 14:57	Simonne.V. Calhoun	08/10/2021 08:20	Shengyu Ding	2267815
	08/05/2021	08/09/2021 14:57	Simonne.V. Calhoun	08/10/2021 08:23	Shengyu Ding	2267816
EPA 365.1 Rev. 2.0 dissolved	08/05/2021			08/05/2021 15:50	Patrick M. Roche	2267817
	08/05/2021			08/05/2021 15:59	Patrick M. Roche	2267818
	08/05/2021			08/05/2021 16:00	Patrick M. Roche	2267819
EPA 8321B	08/05/2021	08/05/2021 11:35	Pramila Ghimire	08/05/2021 16:12	Pramila Ghimire	2267805
	08/05/2021	08/05/2021 11:35	Pramila Ghimire	08/05/2021 16:29	Pramila Ghimire	2267806
	08/05/2021	08/05/2021 11:35	Pramila Ghimire	08/05/2021 16:45	Pramila Ghimire	2267807