Chemical Analysis Report

WQAP-2021-04-23-02

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

Event Description: **Algal Bloom Response - CEROC**
Request ID: **RQ-2021-03-22-10**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

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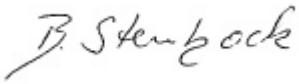

Case Narrative

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 Holden - 90m S of Lake Holden Point **Collection Date/Time: 04/22/2021 11:10**

Field ID: HABCE0072_LakeHolden Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2241953	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P397054	
		Cylindrospermopsin	0.25	U	ug/L	P397054	
		Desmethyl microcystin LR	0.25	U	ug/L	P397054	
		Microcystin HilR**	0.25	U	ug/L	P397054	
		Microcystin HtyR**	0.25	U	ug/L	P397054	
		Microcystin LA	0.25	U	ug/L	P397054	
		Microcystin LF	0.25	U	ug/L	P397054	
		Microcystin LR	0.25	U	ug/L	P397054	
		Microcystin LW	0.25	U	ug/L	P397054	
		Microcystin LY	0.25	U	ug/L	P397054	
		Microcystin RR	0.25	U	ug/L	P397054	
		Microcystin WR	0.50	U	ug/L	P397054	
		Microcystin YR	0.25	U	ug/L	P397054	
		Nodularin-R**	0.25	U	ug/L	P397054	
2241956	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P397899	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P397446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397402	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P397255	
2241959	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397073	

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: Lake Anderson - NW corner **Collection Date/Time: 04/22/2021 09:20**

Field ID: HABCE0049_LakeAnderson Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2241951	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P397054	
		Cylindrospermopsin	0.74	I	ug/L	P397054	
		Desmethyl microcystin LR	0.25	U	ug/L	P397054	
		Microcystin HilR**	0.25	U	ug/L	P397054	
		Microcystin HtyR**	0.25	U	ug/L	P397054	
		Microcystin LA	0.59	I	ug/L	P397054	
		Microcystin LF	0.25	U	ug/L	P397054	
		Microcystin LR	0.97	I	ug/L	P397054	
		Microcystin LW	0.25	U	ug/L	P397054	
		Microcystin LY	0.25	U	ug/L	P397054	
		Microcystin RR	0.25	U	ug/L	P397054	
		Microcystin WR	0.50	U	ug/L	P397054	
		Microcystin YR	0.25	U	ug/L	P397054	
		Nodularin-R**	0.25	U	ug/L	P397054	
2241954	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P397981	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P397446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P397402	
	EPA 365.1 Rev. 2.0	Total-P	0.049		mg P/L	P397255	
2241957	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397073	

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: Lake Conway - SW Shore **Collection Date/Time: 04/22/2021 10:05**

Field ID: HABCE0071_LakeConway2 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2241952	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P397054	
		Cylindrospermopsin	0.25	U	ug/L	P397054	
		Desmethyl microcystin LR	0.25	U	ug/L	P397054	
		Microcystin HilR**	0.25	U	ug/L	P397054	
		Microcystin HtyR**	0.25	U	ug/L	P397054	
		Microcystin LA	0.25	U	ug/L	P397054	
		Microcystin LF	0.25	U	ug/L	P397054	
		Microcystin LR	0.25	U	ug/L	P397054	
		Microcystin LW	0.25	U	ug/L	P397054	
		Microcystin LY	0.25	U	ug/L	P397054	
		Microcystin RR	0.25	U	ug/L	P397054	
		Microcystin WR	0.50	U	ug/L	P397054	
		Microcystin YR	0.25	U	ug/L	P397054	
		Nodularin-R**	0.25	U	ug/L	P397054	
2241955	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P397981	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P397446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P397402	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P397255	
2241958	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P397073	

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.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397899

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397981

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397446

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397402

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397073

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

Reference Method: EPA 8321B
Batch ID: P397054

Component	Result	Code	Units
Anatoxin-a	0.25	U	ug/L
Cylindrospermopsin	0.25	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	0.25	U	ug/L
Microcystin LF	0.25	U	ug/L
Microcystin LR	0.25	U	ug/L
Microcystin LW	0.25	U	ug/L
Microcystin LY	0.25	U	ug/L
Microcystin RR	0.25	U	ug/L
Microcystin WR	0.50	U	ug/L
Microcystin YR	0.25	U	ug/L
Nodularin-R	0.25	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397899

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397981

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397446

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: P397402

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: P397255

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397073

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

Reference Method: EPA 8321B
Batch ID: P397054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	122		P	40 - 150
Cylindrospermopsin	121		P	40 - 150
Desmethyl microcystin LR	108		P	40 - 150
Microcystin HilR	111		P	40 - 150
Microcystin HtyR	110		P	40 - 150
Microcystin LA	117		P	40 - 150
Microcystin LF	96.6		P	40 - 150
Microcystin LR	104		P	40 - 150
Microcystin LW	99.0		P	40 - 150
Microcystin LY	97.6		P	40 - 150
Microcystin RR	105		P	40 - 150
Microcystin WR	106		P	40 - 150
Microcystin YR	94.2		P	40 - 150
Nodularin-R	100		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241956	Ammonia-N	95.8	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397981

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241955	Ammonia-N	96.8	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241928	NO2NO3-N	98.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241888	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241929	O-Phosphate-P	94.5	94.0	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P397054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2241925	Anatoxin-a	123	128	P/P	40 - 150
2241925	Cylindrospermopsin	110	99.9	P/P	40 - 150
2241925	Desmethyl microcystin LR	101	120	P/P	40 - 150
2241925	Microcystin HilR	107	118	P/P	40 - 150
2241925	Microcystin HtyR	104	105	P/P	40 - 150
2241925	Microcystin LA	111	117	P/P	40 - 150
2241925	Microcystin LF	96.0	102	P/P	40 - 150
2241925	Microcystin LR	97.5	109	P/P	40 - 150
2241925	Microcystin LW	93.3	112	P/P	40 - 150
2241925	Microcystin LY	90.8	95.8	P/P	40 - 150
2241925	Microcystin RR	106	112	P/P	40 - 150
2241925	Microcystin WR	105	115	P/P	40 - 150
2241925	Microcystin YR	89.8	95.2	P/P	40 - 150
2241925	Nodularin-R	95.3	105	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241956	Ammonia-N	0.181	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241955	Ammonia-N	0.558	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P397446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241927	Kjeldahl Nitrogen	0.0382	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P397402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241928	NO2NO3-N	0.957	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P397255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241888	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P397073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241929	O-Phosphate-P	0.531	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P397054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241925	Anatoxin-a	3.96	Spike	P	0 - 30
2241925	Cylindrospermopsin	9.76	Spike	P	0 - 30
2241925	Desmethyl microcystin LR	16.7	Spike	P	0 - 30
2241925	Microcystin HilR	10.0	Spike	P	0 - 30
2241925	Microcystin HtyR	1.40	Spike	P	0 - 30
2241925	Microcystin LA	4.64	Spike	P	0 - 30
2241925	Microcystin LF	5.99	Spike	P	0 - 30
2241925	Microcystin LR	10.7	Spike	P	0 - 30
2241925	Microcystin LW	18.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P397054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2241925	Microcystin LY	5.33	Spike	P	0 - 30
2241925	Microcystin RR	5.13	Spike	P	0 - 30
2241925	Microcystin WR	9.47	Spike	P	0 - 30
2241925	Microcystin YR	5.83	Spike	P	0 - 30
2241925	Nodularin-R	9.89	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2241951
Field Sample ID: HABCE0049_LakeAnderson

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	114	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	104	P	30 - 160

Lab Sample ID: 2241952
Field Sample ID: HABCE0071_LakeConway2

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	119	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	93.8	P	30 - 160

Lab Sample ID: 2241953
Field Sample ID: HABCE0072_LakeHolden

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	104	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	98.6	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A104944
Included Lab Sample IDs: 2241957, 2241958, 2241959

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.8	P/P	90 - 110
O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A104961
Included Lab Sample IDs: 2241951, 2241952, 2241953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	114	116	P/P	50 - 160
Cylindrospermopsin	109	119	P/P	60 - 160
Desmethyl microcystin LR	108	111	P/P	60 - 160
Microcystin HilR	106	108	P/P	60 - 160
Microcystin HtyR	109	107	P/P	60 - 160
Microcystin LA	120	118	P/P	50 - 160
Microcystin LF	103	102	P/P	50 - 160
Microcystin LR	106	109	P/P	60 - 160
Microcystin LW	97.1	103	P/P	60 - 160
Microcystin LY	107	95.7	P/P	60 - 160
Microcystin RR	109	121	P/P	60 - 160
Microcystin WR	113	114	P/P	60 - 160
Microcystin YR	94.3	89.5	P/P	60 - 160
Nodularin-R	104	99.1	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A105078
Included Lab Sample IDs: 2241954, 2241955, 2241956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A105082
Included Lab Sample IDs: 2241954, 2241955, 2241956

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A105110
Included Lab Sample IDs: 2241954, 2241955, 2241956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A105291
Included Lab Sample IDs: 2241956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.2	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A105337
Included Lab Sample IDs: 2241954, 2241955

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.8	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	98.8	95.8	96.0			0.181
	Ammonia-N	98.0	96.8	97.4			0.558
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103					0.0382
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.6	99.6			0.957
EPA 365.1 Rev. 2.0	Total-P	104	106	104			1.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	94.5	94.0			0.531
EPA 8321B	Anatoxin-a	122	123	128			3.96
	Cylindrospermopsin	121	110	99.9			9.76
	Desmethyl microcystin LR	108	101	120			16.7
	Microcystin HilR	111	107	118			10.0
	Microcystin HtyR	110	104	105			1.40
	Microcystin LA	117	111	117			4.64
	Microcystin LF	96.6	96.0	102			5.99
	Microcystin LR	104	97.5	109			10.7
	Microcystin LW	99.0	93.3	112			18.6
	Microcystin LY	97.6	90.8	95.8			5.33
	Microcystin RR	105	106	112			5.13
	Microcystin WR	106	105	115			9.47
	Microcystin YR	94.2	89.8	95.2			5.83
	Nodularin-R	100	95.3	105			9.89

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2241954, 2241955, 2241956
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2241954, 2241955, 2241956
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2241954, 2241955, 2241956
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2241954, 2241955, 2241956
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2241957, 2241958, 2241959
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2241951, 2241952, 2241953

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	04/23/2021			05/10/2021 12:49	Ping Hua	2241956
	04/23/2021			05/11/2021 14:06	Ping Hua	2241955
	04/23/2021			05/11/2021 14:20	Ping Hua	2241954
EPA 351.2 Rev. 2.0	04/23/2021	04/29/2021 13:24	Benjamin T. Nordmann	04/30/2021 12:13	Virginia P. Brown	2241954
	04/23/2021	04/29/2021 13:24	Benjamin T. Nordmann	04/30/2021 12:15	Virginia P. Brown	2241955
	04/23/2021	04/29/2021 13:24	Benjamin T. Nordmann	04/30/2021 12:17	Virginia P. Brown	2241956
EPA 353.2 Rev. 2.0	04/23/2021			04/29/2021 11:19	Beverly Y. Sanders	2241954
	04/23/2021			04/29/2021 11:21	Beverly Y. Sanders	2241955
	04/23/2021			04/29/2021 11:22	Beverly Y. Sanders	2241956
EPA 365.1 Rev. 2.0	04/23/2021	04/27/2021 11:54	Yen Ta	04/29/2021 12:28	Shengyu Ding	2241954
	04/23/2021	04/27/2021 11:54	Yen Ta	04/29/2021 12:29	Shengyu Ding	2241955
	04/23/2021	04/27/2021 11:54	Yen Ta	04/29/2021 12:30	Shengyu Ding	2241956
EPA 365.1 Rev. 2.0 dissolved	04/23/2021			04/23/2021 14:34	Blanca Fach	2241957
	04/23/2021			04/23/2021 14:35	Blanca Fach	2241958
	04/23/2021			04/23/2021 14:40	Blanca Fach	2241959
EPA 8321B	04/23/2021	04/23/2021 12:00	Pramila Ghimire	04/25/2021 19:31	Pramila Ghimire	2241951
	04/23/2021	04/23/2021 12:00	Pramila Ghimire	04/25/2021 19:47	Pramila Ghimire	2241952
	04/23/2021	04/23/2021 12:00	Pramila Ghimire	04/25/2021 20:04	Pramila Ghimire	2241953