

Chemical Analysis Report

WQAP-2022-05-19-01

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-2022-04-11-48**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 10-JUN-2022 13:53

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: LSRJ @ 2930 SR 13

Collection Date/Time: 05/18/2022 10:40

Field ID: NEHAB0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2328375	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P414009	MS
		Cylindrospermopsin	0.10	U	ug/L	P414086	
		Desmethyl microcystin LR	0.25	U	ug/L	P414086	
		Microcystin HILR**	0.25	U	ug/L	P414086	
		Microcystin HtyR**	0.25	U	ug/L	P414086	
		Microcystin LA	0.10	U	ug/L	P414086	
		Microcystin LF	0.10	U	ug/L	P414086	
		Microcystin LR	0.25	U	ug/L	P414086	
		Microcystin LW	0.25	U	ug/L	P414086	
		Microcystin LY	0.10	U	ug/L	P414086	
		Microcystin RR	0.10	U	ug/L	P414086	
		Microcystin WR	0.50	U	ug/L	P414086	
		Neosaxitoxin**	0.50	U	ug/L	P414009	MS
		Microcystin YR	0.25	U	ug/L	P414086	
		Saxitoxin	0.50	U	ug/L	P414009	MS
		Nodularin-R**	0.10	U	ug/L	P414086	
2328378	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P414157	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P414285	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P414145	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P414236	
2328380	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P414116	

Sample Location: 183rd Ave Canal off Cross Creek

Collection Date/Time: 05/18/2022 13:05

Field ID: NEHAB0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2328376	EPA 8321B	Anatoxin-a	0.25	U	ug/L	P414009	MS
		Cylindrospermopsin	0.10	U	ug/L	P414086	
		Desmethyl microcystin LR	0.25	U	ug/L	P414086	
		Microcystin HIR**	0.25	U	ug/L	P414086	
		Microcystin HtyR**	0.25	U	ug/L	P414086	
		Microcystin LA	0.54		ug/L	P414086	
		Microcystin LF	0.10	U	ug/L	P414086	
		Microcystin LR	2.3		ug/L	P414086	
		Microcystin LW	0.25	U	ug/L	P414086	
		Microcystin LY	0.10	U	ug/L	P414086	
		Microcystin RR	0.17	I	ug/L	P414086	
		Microcystin WR	0.50	U	ug/L	P414086	
		Neosaxitoxin**	0.50	U	ug/L	P414009	MS
		Microcystin YR	0.25	U	ug/L	P414086	
		Saxitoxin	0.50	U	ug/L	P414009	MS
		Nodularin-R**	0.10	U	ug/L	P414086	
2328379	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P414157	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P414560	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P414351	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P414236	
2328381	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.073		mg P/L	P414115	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414157

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414285

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414560

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414145

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414351

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414236

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414115

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414116

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

Reference Method: EPA 8321B
Batch ID: P414009

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

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P414086

Component	Result	Code	Units
Cylindrospermopsin	0.10	U	ug/L
Desmethyl microcystin LR	0.25	U	ug/L
Microcystin H1R	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: P414157

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414560

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: P414145

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	96.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414351

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414236

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414116

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

Reference Method: EPA 8321B
Batch ID: P414009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	96.8		P	40 - 150
Neosaxitoxin	62.0		P	30 - 150
Saxitoxin	65.1		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P414086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Cylindrospermopsin	106		P	40 - 150
Desmethyl microcystin LR	101		P	40 - 150
Microcystin HllR	98.5		P	40 - 150
Microcystin HtyR	101		P	40 - 150
Microcystin LA	114		P	40 - 150
Microcystin LF	113		P	40 - 150
Microcystin LR	94.5		P	40 - 150
Microcystin LW	93.3		P	40 - 150
Microcystin LY	106		P	40 - 150
Microcystin RR	99.0		P	40 - 150
Microcystin WR	97.0		P	40 - 150
Microcystin YR	98.8		P	40 - 150
Nodularin-R	107		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326288	Ammonia-N	99.4	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327733	Kjeldahl Nitrogen	92.3	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328402	Kjeldahl Nitrogen	99.7	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414145

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2327962	NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414351

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328357	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328378	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414115

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328420	O-Phosphate-P	97.4	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328326	O-Phosphate-P	97.6	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P414009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326817	Anatoxin-a	35.9	35.2	F/F	40 - 150
2326817	Neosaxitoxin	11.3	10.9	F/F	30 - 150
2326817	Saxitoxin	19.2	19.0	F/F	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P414086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2328288	Cylindrospermopsin	101	108	P/P	40 - 150
2328288	Desmethyl microcystin LR	111	114	P/P	40 - 150
2328288	Microcystin HilR	103	106	P/P	40 - 150
2328288	Microcystin HtyR	97.3	104	P/P	40 - 150
2328288	Microcystin LA	88.6	112	P/P	40 - 150
2328288	Microcystin LF	142	116	P/P	40 - 150
2328288	Microcystin LR	110	115	P/P	40 - 150
2328288	Microcystin LW	96.7	119	P/P	40 - 150
2328288	Microcystin LY	82.5	99.4	P/P	40 - 150
2328288	Microcystin RR	92.7	91.2	P/P	40 - 150
2328288	Microcystin WR	102	102	P/P	40 - 150
2328288	Microcystin YR	112	116	P/P	40 - 150
2328288	Nodularin-R	111	108	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326288	Ammonia-N	0.831	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327733	Kjeldahl Nitrogen	5.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328402	Kjeldahl Nitrogen	6.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2327962	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328357	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328378	Total-P	0.736	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328420	O-Phosphate-P	1.29	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P414116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328326	O-Phosphate-P	0.185	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P414009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326817	Anatoxin-a	1.78	Spike	P	0 - 30
2326817	Neosaxitoxin	3.31	Spike	P	0 - 30
2326817	Saxitoxin	1.19	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P414086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2328288	Cylindrospermopsin	6.59	Spike	P	0 - 30
2328288	Desmethyl microcystin LR	2.03	Spike	P	0 - 30
2328288	Microcystin HILR	2.58	Spike	P	0 - 30
2328288	Microcystin HtyR	6.40	Spike	P	0 - 30
2328288	Microcystin LA	23.2	Spike	P	0 - 30
2328288	Microcystin LF	19.7	Spike	P	0 - 30
2328288	Microcystin LR	4.51	Spike	P	0 - 30
2328288	Microcystin LW	20.9	Spike	P	0 - 30
2328288	Microcystin LY	18.6	Spike	P	0 - 30
2328288	Microcystin RR	1.62	Spike	P	0 - 30
2328288	Microcystin WR	0.127	Spike	P	0 - 30
2328288	Microcystin YR	3.95	Spike	P	0 - 30
2328288	Nodularin-R	2.43	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2328375
Field Sample ID: NEHAB0077

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	92.9	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	55.8	P	30 - 160

Lab Sample ID: 2328376
Field Sample ID: NEHAB0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR ethyl-d5	97.4	P	30 - 160
EPA 8321B	Neosaxitoxin-15N7	90.5	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A112267

Included Lab Sample IDs: 2328380, 2328381

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.1	P/P	90 - 110
O-Phosphate-P	99.2	98.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112273

Included Lab Sample IDs: 2328375, 2328376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cylindrospermopsin	84.8	86.1	P/P	50 - 160
Desmethyl microcystin LR	88.8	86.2	P/P	50 - 160
Microcystin HIR	85.9	84.6	P/P	50 - 160
Microcystin HtyR	87.3	90.5	P/P	50 - 160
Microcystin LA	77.2	87.1	P/P	50 - 160
Microcystin LF	92.4	79.2	P/P	50 - 160
Microcystin LR	89.3	91.1	P/P	50 - 160
Microcystin LW	117	123	P/P	50 - 160
Microcystin LY	74.3	88.8	P/P	50 - 160
Microcystin RR	78.4	82.6	P/P	50 - 160
Microcystin WR	97.9	99.6	P/P	50 - 160
Microcystin YR	87.7	91.1	P/P	50 - 160
Nodularin-R	90.0	92.0	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112283

Included Lab Sample IDs: 2328378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112288

Included Lab Sample IDs: 2328378, 2328379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112308

Included Lab Sample IDs: 2328375, 2328376

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	96.9	104	P/P	50 - 160
Neosaxitoxin	79.5	51.8	P/P	50 - 160
Saxitoxin	65.3	60.4	P/P	50 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112394

Included Lab Sample IDs: 2328379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112401

Included Lab Sample IDs: 2328378, 2328379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	P/P	90 - 110
Total-P	101	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112559

Included Lab Sample IDs: 2328378

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112613

Included Lab Sample IDs: 2328379

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	98.6	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	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	99.4	98.4			0.831
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	93.6	92.3	101			5.49
	Kjeldahl Nitrogen	101	99.7	108			6.39
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	96.5	98.0	98.0			0.0
	NO ₂ NO ₃ -N	101	103	102			0.487
EPA 365.1 Rev. 2.0	Total-P	103	105	104			0.736
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	97.4	99.1			1.29
	O-Phosphate-P	101	97.6	97.4			0.185
EPA 8321B	Anatoxin-a	96.8	35.9	35.2			1.78
	Cylindrospermopsin	106	101	108			6.59
	Desmethyl microcystin LR	101	111	114			2.03
	Microcystin HiLR	98.5	103	106			2.58
	Microcystin HtyR	101	97.3	104			6.40
	Microcystin LA	114	88.6	112			23.2
	Microcystin LF	113	142	116			19.7
	Microcystin LR	94.5	110	115			4.51
	Microcystin LW	93.3	96.7	119			20.9
	Microcystin LY	106	82.5	99.4			18.6
	Microcystin RR	99.0	92.7	91.2			1.62
	Microcystin WR	97.0	102	102			0.127
	Microcystin YR	98.8	112	116			3.95
	Neosaxitoxin	62.0	11.3	10.9			3.31
	Nodularin-R	107	111	108			2.43
	Saxitoxin	65.1	19.2	19.0			1.19

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2328378, 2328379
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2328378, 2328379
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2328378, 2328379
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2328378, 2328379
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2328380, 2328381
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2328375, 2328376
EPA 8321B	Saxitoxin in water matrices by HPLC/MS/MS	2328375, 2328376

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	05/19/2022			05/20/2022 09:07	Judith K. Clark	2328378
	05/19/2022			05/20/2022 09:08	Judith K. Clark	2328379
EPA 351.2 Rev. 2.0	05/19/2022	05/25/2022 12:30	Samantha L Bates	06/01/2022 14:05	Alexandra J Mattheus	2328378
	05/19/2022	06/02/2022 15:43	Samantha L Bates	06/03/2022 13:14	Alexandra J Mattheus	2328379
EPA 353.2 Rev. 2.0	05/19/2022			05/20/2022 10:18	Beverly Y. Sanders	2328378
	05/19/2022			05/25/2022 11:53	Beverly Y. Sanders	2328379
EPA 365.1 Rev. 2.0	05/19/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 12:42	James L Waggerby	2328378
	05/19/2022	05/24/2022 03:30	Adam P Silver	05/25/2022 12:47	James L Waggerby	2328379
EPA 365.1 Rev. 2.0 dissolved	05/19/2022			05/19/2022 14:11	James L Waggerby	2328381
	05/19/2022			05/19/2022 14:32	James L Waggerby	2328380
EPA 8321B	05/19/2022	05/19/2022 14:00	Manjita Shrestha	05/19/2022 22:31	Manjita Shrestha	2328375
	05/19/2022	05/19/2022 14:00	Manjita Shrestha	05/19/2022 22:48	Manjita Shrestha	2328376
	05/19/2022	05/19/2022 14:00	Manjita Shrestha	05/21/2022 07:22	Manjita Shrestha	2328376
	05/19/2022	05/19/2022 14:00	Manjita Shrestha	05/21/2022 07:36	Manjita Shrestha	2328375