

Chemical Analysis Report

WQAP-2020-09-22-01

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

Event Description: **Algal Bloom Response - SOROC Cape Coral**
Request ID: **RQ-2020-09-14-52**
Customer: **WQAP**
Project ID: **BLOOM-RESP**

Send Reports to:
FL Dept. of Environmental Protection
DEP SO ROC
2295 Victoria Ave
Fort Myers, FL 33901
Attn: Kirby Wolfe

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-OCT-2020 13:54

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

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: Makai Canal

Collection Date/Time: 09/21/2020 11:03

Field ID: CC-092120-001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197367	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P387716	
		Cylindrospermopsin**	0.25	U	ug/L	P387716	
		Desmethyl microcystin LR**	0.25	U	ug/L	P387716	MS
		Microcystin LA**	0.25	U	ug/L	P387716	
		Microcystin LF**	0.25	U	ug/L	P387716	
		Microcystin LR**	0.25	U	ug/L	P387716	MS
		Microcystin LW**	0.25	U	ug/L	P387716	
		Microcystin LY**	0.25	U	ug/L	P387716	
		Microcystin RR**	0.25	U	ug/L	P387716	MS
		Microcystin WR**	0.50	U	ug/L	P387716	MS
		Microcystin YR**	0.25	U	ug/L	P387716	MS
2197370	EPA 350.1 Rev. 2.0	Ammonia-N	0.36		mg N/L	P387886	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P387867	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.4		mg N/L	P387744	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P387920	
2197373	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P387713	

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: Highlander Canal

Collection Date/Time: 09/21/2020 11:13

Field ID: CC-092120-002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197368	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P387716	
		Cylindrospermopsin**	0.25	U	ug/L	P387716	
		Desmethyl microcystin LR**	0.25	U	ug/L	P387716	MS
		Microcystin LA**	0.25	U	ug/L	P387716	
		Microcystin LF**	0.25	U	ug/L	P387716	
		Microcystin LR**	1.1		ug/L	P387716	MS
		Microcystin LW**	0.25	U	ug/L	P387716	
		Microcystin LY**	0.25	U	ug/L	P387716	
		Microcystin RR**	0.25	U	ug/L	P387716	MS
		Microcystin WR**	0.50	U	ug/L	P387716	MS
		Microcystin YR**	0.25	U	ug/L	P387716	MS
2197371	EPA 350.1 Rev. 2.0	Ammonia-N	0.22		mg N/L	P387886	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.8		mg N/L	P387867	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P387744	
	EPA 365.1 Rev. 2.0	Total-P	0.34		mg P/L	P387920	
2197374	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P387714	

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: Aries Canal

Collection Date/Time: 09/21/2020 11:30

Field ID: CC-092120-003

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197369	EPA 8321B	Anatoxin-a**	0.25	U	ug/L	P387716	
		Cylindrospermopsin**	0.25	U	ug/L	P387716	
		Desmethyl microcystin LR**	0.25	U	ug/L	P387716	MS
		Microcystin LA**	0.25	U	ug/L	P387716	
		Microcystin LF**	0.25	U	ug/L	P387716	
		Microcystin LR**	0.25	U	ug/L	P387716	MS
		Microcystin LW**	0.25	U	ug/L	P387716	
		Microcystin LY**	0.25	U	ug/L	P387716	
		Microcystin RR**	0.25	U	ug/L	P387716	MS
		Microcystin WR**	0.50	U	ug/L	P387716	MS
		Microcystin YR**	0.25	U	ug/L	P387716	MS
2197372	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P387886	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P387867	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P387744	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P387920	
2197375	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P387714	

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: P387886

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387867

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387744

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387713

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387714

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

Reference Method: EPA 8321B
Batch ID: P387716

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 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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387886

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387744

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: P387920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387713

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387714

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

Reference Method: EPA 8321B
Batch ID: P387716

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Anatoxin-a	102		P	40 - 140
Cylindrospermopsin	124		P	40 - 140
Desmethyl microcystin LR	122		P	40 - 140
Microcystin LA	125		P	40 - 140
Microcystin LF	114		P	40 - 140
Microcystin LR	109		P	40 - 140
Microcystin LW	95.3		P	40 - 140
Microcystin LY	127		P	40 - 140
Microcystin RR	122		P	40 - 140
Microcystin WR	122		P	40 - 140
Microcystin YR	121		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P387886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197552	Ammonia-N	96.4	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P387744

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197372	NO2NO3-N	99.2	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P387920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197329	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P387713

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197332	O-Phosphate-P	98.4	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P387714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197392	O-Phosphate-P	99.5	99.4	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P387716

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197630	Anatoxin-a	99.5	94.8	P/P	40 - 140
2197630	Cylindrospermopsin	101	92.1	P/P	40 - 140
2197630	Desmethyl microcystin LR	185	163	F/F	40 - 140
2197630	Microcystin LA	120	111	P/P	40 - 140
2197630	Microcystin LF	123	106	P/P	40 - 140
2197630	Microcystin LR	173	162	F/F	40 - 140
2197630	Microcystin LW	97.1	93.2	P/P	40 - 140
2197630	Microcystin LY	111	107	P/P	40 - 140
2197630	Microcystin RR	157	148	F/F	40 - 140
2197630	Microcystin WR	141	134	F/P	40 - 140
2197630	Microcystin YR	180	176	F/F	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197552	Ammonia-N	3.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197370	Kjeldahl Nitrogen	3.93	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197372	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197329	Total-P	0.330	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197332	O-Phosphate-P	0.810	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197392	O-Phosphate-P	0.101	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P387716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197630	Anatoxin-a	4.78	Spike	P	0 - 30
2197630	Cylindrospermopsin	9.42	Spike	P	0 - 30
2197630	Desmethyl microcystin LR	13.0	Spike	P	0 - 30
2197630	Microcystin LA	7.42	Spike	P	0 - 30
2197630	Microcystin LF	14.4	Spike	P	0 - 30
2197630	Microcystin LR	6.61	Spike	P	0 - 30
2197630	Microcystin LW	4.12	Spike	P	0 - 30
2197630	Microcystin LY	3.51	Spike	P	0 - 30
2197630	Microcystin RR	6.34	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P387716

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197630	Microcystin WR	4.97	Spike	P	0 - 30
2197630	Microcystin YR	2.61	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2197367

Field Sample ID: CC-092120-001

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	104	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	100	P	30 - 160

Lab Sample ID: 2197368

Field Sample ID: CC-092120-002

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	111	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	116	P	30 - 160

Lab Sample ID: 2197369

Field Sample ID: CC-092120-003

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Microcystin LR-d7	101	P	30 - 160
EPA 8321B	Microcystin LR ethyl-d5	85.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101150

Included Lab Sample IDs: 2197373, 2197374, 2197375

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101159

Included Lab Sample IDs: 2197370, 2197371, 2197372

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

Reference Method: EPA 8321B

Run ID: A101187

Included Lab Sample IDs: 2197367, 2197368, 2197369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Anatoxin-a	92.5	91.2	P/P	50 - 160
Cylindrospermopsin	110	129	P/P	60 - 160
Desmethyl microcystin LR	110	118	P/P	60 - 160
Microcystin LA	127	124	P/P	50 - 160
Microcystin LF	117	118	P/P	60 - 160
Microcystin LR	112	113	P/P	60 - 160
Microcystin LW	89.7	112	P/P	60 - 160
Microcystin LY	117	127	P/P	60 - 160
Microcystin RR	114	119	P/P	60 - 160
Microcystin WR	121	118	P/P	60 - 160
Microcystin YR	111	108	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101210

Included Lab Sample IDs: 2197370, 2197371, 2197372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.4	98.6	P/P	90 - 110
Ammonia-N	98.6	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101228

Included Lab Sample IDs: 2197370, 2197371, 2197372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	99.7	P/P	90 - 110
Kjeldahl Nitrogen	99.7	94.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101284

Included Lab Sample IDs: 2197370, 2197371, 2197372

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	105	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		Precision	
					LCS	MS
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	96.4	100		3.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1				3.93
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.2	97.7		1.49
EPA 365.1 Rev. 2.0	Total-P	105	108	108		0.330
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.4	99.2		0.810
	O-Phosphate-P	101	99.5	99.4		0.101
EPA 8321B	Anatoxin-a	102	99.5	94.8		4.78
	Cylindrospermopsin	124	101	92.1		9.42
	Desmethyl microcystin LR	122	185	163		13.0
	Microcystin LA	125	120	111		7.42
	Microcystin LF	114	123	106		14.4
	Microcystin LR	109	173	162		6.61
	Microcystin LW	95.3	97.1	93.2		4.12
	Microcystin LY	127	111	107		3.51
	Microcystin RR	122	157	148		6.34
	Microcystin WR	122	141	134		4.97
	Microcystin YR	121	180	176		2.61

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2197370, 2197371, 2197372
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2197370, 2197371, 2197372
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2197370, 2197371, 2197372
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2197370, 2197371, 2197372
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2197373, 2197374, 2197375
EPA 8321B	Microcystins in water matrices by HPLC/MS/MS	2197367, 2197368, 2197369

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	09/22/2020			09/26/2020 15:38	Ping Hua	2197371
	09/22/2020			09/26/2020 15:39	Ping Hua	2197372
	09/22/2020			09/26/2020 15:57	Ping Hua	2197370
EPA 351.2 Rev. 2.0	09/22/2020	09/25/2020 11:45	David Boose	09/28/2020 11:08	Elliott Rodriguez	2197370
	09/22/2020	09/25/2020 11:45	David Boose	09/28/2020 11:23	Elliott Rodriguez	2197371
	09/22/2020	09/25/2020 11:45	David Boose	09/28/2020 11:24	Elliott Rodriguez	2197372
EPA 353.2 Rev. 2.0	09/22/2020			09/23/2020 11:24	Beverly Y. Sanders	2197371
	09/22/2020			09/23/2020 11:25	Beverly Y. Sanders	2197372
	09/22/2020			09/23/2020 11:38	Beverly Y. Sanders	2197370
EPA 365.1 Rev. 2.0	09/22/2020	09/28/2020 12:44	Yen Ta	09/29/2020 15:08	Benjamin T. Nordmann	2197370
	09/22/2020	09/28/2020 12:44	Yen Ta	09/29/2020 15:09	Benjamin T. Nordmann	2197371
	09/22/2020	09/28/2020 12:44	Yen Ta	09/29/2020 15:10	Benjamin T. Nordmann	2197372
EPA 365.1 Rev. 2.0 dissolved	09/22/2020			09/22/2020 16:27	Virginia P. Brown	2197373
	09/22/2020			09/22/2020 16:32	Virginia P. Brown	2197374
	09/22/2020			09/22/2020 16:33	Virginia P. Brown	2197375
EPA 8321B	09/22/2020	09/24/2020 08:30	Mohammad Ghaffari	09/24/2020 14:44	Juyoung Kim	2197367
	09/22/2020	09/24/2020 08:30	Mohammad Ghaffari	09/24/2020 15:00	Juyoung Kim	2197368
	09/22/2020	09/24/2020 08:30	Mohammad Ghaffari	09/24/2020 15:17	Juyoung Kim	2197369