

Chemical Analysis Report

CEN-DIST-2021-04-14-01

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

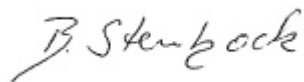
Event Description: **Tomoka + Field Blank**
Request ID: **RQ-2021-04-12-74**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Kalina Warren

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 06-MAY-2021 18:43



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 group are included in this report: Nutrients.

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: Tomoka Basin N of Tomoka State Park

Collection Date/Time: 04/13/2021 12:10

Field ID: G5CE0132

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2239339	EPA 180.1 Rev. 2.0	Turbidity	17		NTU	P396561	
	EPA 300.0 Rev. 2.1	Bromide	47		mg Br/L	P397185	
	SM 2320 B-2011	Total Alkalinity	116	A	mg CaCO3/L	P396666	
	SM 2540 D-2011	TSS	36		mg/L	P396816	
	SM 4500 F-C-2011	Fluoride	0.90		mg F/L	P396668	
2239340	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P397020	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P396973	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P396792	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P396698	
	SM 5310 B-2011	Organic Carbon	8.3		mg C/L	P396854	
2239341	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P396536	

Sample Location: FB04132021

Collection Date/Time: 04/13/2021 13:05

Field ID: FB_04132021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2239342	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P396561	
	EPA 300.0 Rev. 2.1	Bromide	0.013	U	mg Br/L	P397185	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO ₃ /L	P396665	
	SM 2540 D-2011	TSS	2	U	mg/L	P396815	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P396667	
2239343	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P397019	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P396919	MS
	EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	0.004	U	mg N/L	P396840	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P396856	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P396953	
2239344	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P396535	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396561

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397185

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396919

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396973

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396792

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396840

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396698

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396856

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396536

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

Reference Method: SM 2320 B-2011
Batch ID: P396665

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P396666

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P396815

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P396816

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396668

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P396854

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P396953

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397185

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397020

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: P396919

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396973

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: P396792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396698

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396856

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

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: P396536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.7		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P396665

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P396666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P396668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P396854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P396953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240173	Bromide	102	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237567	Ammonia-N	95.8	96.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239606	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239234	Kjeldahl Nitrogen	106	112	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239019	Kjeldahl Nitrogen	111	114	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239011	NO2NO3-N	99.4	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239233	NO2NO3-N	99.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239340	Total-P	97.1	95.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240036	Total-P	105	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239267	O-Phosphate-P	98.1	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239341	O-Phosphate-P	95.8	94.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P396667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239754	Fluoride	104	104	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P396668

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239339	Fluoride	96.5	96.5	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P396854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236178	Organic Carbon	97.0	98.7	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P396953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2239209	Organic Carbon	99.6	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239312	Turbidity	1.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P397185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240173	Bromide	2.48	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237567	Ammonia-N	0.854	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P397020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239606	Ammonia-N	1.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239234	Kjeldahl Nitrogen	4.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239019	Kjeldahl Nitrogen	1.63	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239011	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239233	NO2NO3-N	1.23	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P396698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239340	Total-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P396856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240036	Total-P	0.699	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239267	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239341	O-Phosphate-P	1.53	Spike	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P396665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239754	Total Alkalinity	0.960	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011

Batch ID: P396666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239339	Total Alkalinity	2.23	Sample	P	0 - 8.1

Reference Method: SM 2540 D-2011

Batch ID: P396816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239010	TSS	5.88	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P396667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239754	Fluoride	0.0	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P396668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239339	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236178	Organic Carbon	1.65	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P396953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2239209	Organic Carbon	0.150	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104725

Included Lab Sample IDs: 2239341, 2239344

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104732

Included Lab Sample IDs: 2239339, 2239342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A104779

Included Lab Sample IDs: 2239339, 2239342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.1	P/P	90 - 110
Total Alkalinity	97.3	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104779

Included Lab Sample IDs: 2239339, 2239342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104819

Included Lab Sample IDs: 2239340

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104820

Included Lab Sample IDs: 2239340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104844

Included Lab Sample IDs: 2239343

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104856

Included Lab Sample IDs: 2239340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A104856

Included Lab Sample IDs: 2239340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104883

Included Lab Sample IDs: 2239343

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	97.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104900

Included Lab Sample IDs: 2239339, 2239342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.4	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104901

Included Lab Sample IDs: 2239343

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	98.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104919

Included Lab Sample IDs: 2239343

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104920

Included Lab Sample IDs: 2239340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104941

Included Lab Sample IDs: 2239340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104951

Included Lab Sample IDs: 2239343

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	107	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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.11	
EPA 300.0 Rev. 2.1	Bromide	100	102	99.1			2.48
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	95.8	96.8			0.854
	Ammonia-N	99.4	100	102			1.09
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	106	112			4.08
	Kjeldahl Nitrogen	108	111	114			1.63
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	99.4	99.4			0.0
	NO2NO3-N	97.0	99.0	97.0			1.23
EPA 365.1 Rev. 2.0	Total-P	104	97.1	95.9			1.15
	Total-P	106	105	104			0.699
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	98.1	96.6			1.32
	O-Phosphate-P	98.7	95.8	94.1			1.53
SM 2320 B-2011	Total Alkalinity	99.9				0.960	
	Total Alkalinity	98.5				2.23	
SM 2540 D-2011	TSS					5.88	
SM 4500 F-C-2011	Fluoride	99.1	104	104			0.0
	Fluoride	98.2	96.5	96.5			0.0
SM 5310 B-2011	Organic Carbon	100	97.0	98.7			1.65
	Organic Carbon	97.8	99.6	99.8			0.150

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2239339, 2239342
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2239339, 2239342
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2239340, 2239343
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2239340, 2239343
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2239340, 2239343
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2239340, 2239343
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2239341, 2239344
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2239339, 2239342
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2239339, 2239342
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2239339, 2239342
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2239340, 2239343

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/14/2021			04/14/2021 15:46	Yen Ta	2239339, 2239342
EPA 300.0 Rev. 2.1	04/14/2021			04/22/2021 14:25	Lipi Saha	2239339
	04/14/2021			04/22/2021 14:43	Lipi Saha	2239342
EPA 350.1 Rev. 2.0	04/14/2021			04/22/2021 17:35	Ping Hua	2239343
	04/14/2021			04/22/2021 18:07	Ping Hua	2239340
EPA 351.2 Rev. 2.0	04/14/2021	04/21/2021 14:43	Benjamin T. Nordmann	04/23/2021 15:42	Virginia P. Brown	2239343
	04/14/2021	04/22/2021 13:13	Benjamin T. Nordmann	04/23/2021 11:57	Virginia P. Brown	2239340
EPA 353.2 Rev. 2.0	04/14/2021			04/19/2021 11:20	Beverly Y. Sanders	2239340
	04/14/2021			04/19/2021 14:29	Touraj Touran	2239343
EPA 365.1 Rev. 2.0	04/14/2021	04/16/2021 13:47	Yen Ta	04/19/2021 11:19	Shengyu Ding	2239340
	04/14/2021	04/20/2021 14:25	Yen Ta	04/21/2021 13:10	Shengyu Ding	2239343
EPA 365.1 Rev. 2.0 dissolved	04/14/2021			04/14/2021 13:47	Lipi Saha	2239344
	04/14/2021			04/14/2021 13:49	Lipi Saha	2239341
SM 2320 B-2011	04/14/2021			04/15/2021 20:43	Dale L. Simmons	2239342
	04/14/2021			04/15/2021 23:42	Dale L. Simmons	2239339
SM 2540 D-2011	04/14/2021			04/16/2021 15:36	Yijie Li	2239339, 2239342
SM 4500 F-C-2011	04/14/2021			04/15/2021 20:43	Dale L. Simmons	2239342
	04/14/2021			04/15/2021 23:07	Dale L. Simmons	2239339
SM 5310 B-2011	04/14/2021			04/20/2021 09:36	Lauren Lees	2239340
	04/14/2021			04/21/2021 19:25	Lauren Lees	2239343