

Chemical Analysis Report

CEN-DIST-2021-02-12-01

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

Event Description: **Park/Gem/Theresa/Ann**
Request ID: **RQ-2021-02-08-15**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-MAR-2021 08:46

A handwritten signature in black ink, appearing to read "Colin Wright", is placed over a light gray rectangular 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 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: LAKE THERESA @ CENTER

Collection Date/Time: 02/11/2021 13:26

Field ID: G4CE0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2225164	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P393727	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P393882	
		Sulfate	3.8		mg SO4/L	P393885	
		Color (true)	38		PCU	P393734	
	SM 2320 B-2011	Total Alkalinity	87		mg CaCO3/L	P393798	
	SM 2540 C-2011	TDS	142		mg/L	P394109	
	SM 2540 D-2011	TSS	2	I	mg/L	P394093	
	SM 4500 F-C-2011	Fluoride	0.093	I	mg F/L	P393803	
2225167	EPA 350.1 Rev. 2.0	Ammonia-N	0.82		mg N/L	P394187	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P393951	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.032		mg N/L	P393758	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P393872	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P394373	
2225170	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P393731	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Lake Gem at Center

Collection Date/Time: 02/11/2021 10:29

Field ID: G2CE0204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2225165	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P393727	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P393882	
		Sulfate	16		mg SO4/L	P393885	
	SM 2120 B-2011	Color (true)	11	A	PCU	P393734	
	SM 2320 B-2011	Total Alkalinity	79		mg CaCO3/L	P393801	
	SM 2540 C-2011	TDS	147		mg/L	P394109	
	SM 2540 D-2011	TSS	3	I	mg/L	P394093	
	SM 4500 F-C-2011	Fluoride	0.055	I	mg F/L	P393804	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P394187	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.74		mg N/L	P393952	
2225168	EPA 353.2 Rev. 2.0	NO2NO3-N	0.32		mg N/L	P393758	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P393872	
	SM 5310 B-2011	Organic Carbon	7.1		mg C/L	P394373	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P393731	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: LAKE PARK @ CENTER

Collection Date/Time: 02/11/2021 10:44

Field ID: G2CE0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2225166	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P393727	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P393882	
		Sulfate	18		mg SO4/L	P393885	
	SM 2120 B-2011	Color (true)	12		PCU	P393734	
	SM 2320 B-2011	Total Alkalinity	59	A	mg CaCO3/L	P393801	
	SM 2540 C-2011	TDS	125		mg/L	P394109	
	SM 2540 D-2011	TSS	2	U	mg/L	P394093	
	SM 4500 F-C-2011	Fluoride	0.056	I	mg F/L	P393804	
2225169	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P394187	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P393952	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P393758	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P393872	
	SM 5310 B-2011	Organic Carbon	6.1		mg C/L	P394373	
2225172	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P393731	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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: P393727

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393882

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393885

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394187

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393951

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393952

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393758

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393731

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P393734

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P393798

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

Reference Method: SM 2320 B-2011
Batch ID: P393801

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

Reference Method: SM 2540 C-2011
Batch ID: P394109

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394093

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393803

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393804

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P394373

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: P393882

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393885

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394187

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393951

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393758

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393872

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393731

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

Reference Method: SM 2120 B-2011
Batch ID: P393734

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.4		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P393798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P393801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P393803

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P393804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224866	Chloride	106		P	90 - 110
2224986	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224866	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394187

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225169	Ammonia-N	96.4	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225146	Kjeldahl Nitrogen	97.7	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225273	Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225145	NO2NO3-N	99.9	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393872

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225148	Total-P	109	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225172	O-Phosphate-P	95.8	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P393803

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224966	Fluoride	96.8	96.8	P/P	94 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P393804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225166	Fluoride	96.7	96.7	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P394373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225271	Organic Carbon	105		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393727

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224983	Turbidity	3.27	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224866	Chloride	0.00940	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224866	Sulfate	1.00	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394187

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225169	Ammonia-N	0.858	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225146	Kjeldahl Nitrogen	0.919	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225273	Kjeldahl Nitrogen	2.69	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225145	NO2NO3-N	0.416	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225148	Total-P	1.11	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225172	O-Phosphate-P	0.935	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P393734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225165	Color (true)	0.625	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P393798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224966	Total Alkalinity	2.93	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P393801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225166	Total Alkalinity	1.22	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P394109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224986	TDS	2.35	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P393803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224966	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P393804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225166	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225271	Organic Carbon	0.187	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103563

Included Lab Sample IDs: 2225164, 2225165, 2225166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103565

Included Lab Sample IDs: 2225170, 2225171, 2225172

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	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A103566

Included Lab Sample IDs: 2225164, 2225165, 2225166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	99.6	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103580

Included Lab Sample IDs: 2225167, 2225168, 2225169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	106	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103596

Included Lab Sample IDs: 2225164, 2225165, 2225166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	93.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103596

Included Lab Sample IDs: 2225164, 2225165, 2225166

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103628

Included Lab Sample IDs: 2225164, 2225165, 2225166

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103634

Included Lab Sample IDs: 2225168, 2225169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103634

Included Lab Sample IDs: 2225168, 2225169

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103641

Included Lab Sample IDs: 2225167

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103694

Included Lab Sample IDs: 2225167, 2225168, 2225169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103751

Included Lab Sample IDs: 2225167, 2225168, 2225169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103844

Included Lab Sample IDs: 2225167, 2225168, 2225169

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.3	P/P	90 - 110
Organic Carbon	98.3	98.3	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 180.1 Rev. 2.0	Turbidity					3.27	
EPA 300.0 Rev. 2.1	Chloride	103	106	101		0.0094	
	Sulfate	103	105			1.00	
EPA 350.1 Rev. 2.0	Ammonia-N	102	96.4	97.4			0.858
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	97.7	99.5			0.919
	Kjeldahl Nitrogen	98.9	101	105			2.69
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.9	100			0.416
EPA 365.1 Rev. 2.0	Total-P	107	109	108			1.11
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	95.8	96.7			0.935
SM 2120 B-2011	Color (true)	97.4				0.625	
SM 2320 B-2011	Total Alkalinity	98.9				2.93	
	Total Alkalinity	97.7				1.22	
SM 2540 C-2011	TDS					2.35	
SM 4500 F-C-2011	Fluoride	97.6	96.8	96.8			0.0
	Fluoride	96.7	96.7	96.7			0.0
SM 5310 B-2011	Organic Carbon	97.2	105				0.187

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2225164, 2225165, 2225166
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2225164, 2225165, 2225166
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2225164, 2225165, 2225166
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2225167, 2225168, 2225169
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2225167, 2225168, 2225169
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2225167, 2225168, 2225169
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2225167, 2225168, 2225169
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2225170, 2225171, 2225172
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2225164, 2225165, 2225166
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2225164, 2225165, 2225166
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2225164, 2225165, 2225166
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2225164, 2225165, 2225166
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2225164, 2225165, 2225166
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2225167, 2225168, 2225169

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	02/12/2021			02/12/2021 14:02	Yen Ta	2225164, 2225165, 2225166
EPA 300.0 Rev. 2.1	02/12/2021			02/16/2021 16:26	Lipi Saha	2225164
	02/12/2021			02/16/2021 16:38	Lipi Saha	2225165
	02/12/2021			02/16/2021 16:50	Lipi Saha	2225166
EPA 350.1 Rev. 2.0	02/12/2021			02/24/2021 16:25	Ping Hua	2225169
	02/12/2021			02/24/2021 16:29	Ping Hua	2225167
	02/12/2021			02/24/2021 16:30	Ping Hua	2225168
EPA 351.2 Rev. 2.0	02/12/2021	02/18/2021 12:27	Yen Ta	02/19/2021 12:00	Virginia P. Brown	2225167
	02/12/2021	02/18/2021 12:27	Yen Ta	02/19/2021 12:07	Virginia P. Brown	2225168
	02/12/2021	02/18/2021 12:27	Yen Ta	02/19/2021 12:08	Virginia P. Brown	2225169
EPA 353.2 Rev. 2.0	02/12/2021			02/15/2021 11:02	Beverly Y. Sanders	2225167
	02/12/2021			02/15/2021 11:04	Beverly Y. Sanders	2225168
	02/12/2021			02/15/2021 11:05	Beverly Y. Sanders	2225169
EPA 365.1 Rev. 2.0	02/12/2021	02/16/2021 18:52	Madeline Gruver	02/17/2021 14:00	Shengyu Wang	2225168
	02/12/2021	02/16/2021 18:52	Madeline Gruver	02/17/2021 14:01	Shengyu Wang	2225169
	02/12/2021	02/16/2021 18:52	Madeline Gruver	02/17/2021 16:39	Shengyu Wang	2225167
EPA 365.1 Rev. 2.0 dissolved	02/12/2021			02/12/2021 16:27	Julia Storbeck	2225172
	02/12/2021			02/12/2021 16:30	Julia Storbeck	2225171
	02/12/2021			02/12/2021 16:36	Julia Storbeck	2225170
SM 2120 B-2011	02/12/2021			02/12/2021 15:58	Madeline Gruver	2225164
	02/12/2021			02/12/2021 15:59	Madeline Gruver	2225165
	02/12/2021			02/12/2021 16:00	Madeline Gruver	2225166
SM 2320 B-2011	02/12/2021			02/15/2021 22:12	Dale L. Simmons	2225164
	02/12/2021			02/15/2021 23:06	Dale L. Simmons	2225166
	02/12/2021			02/15/2021 23:27	Dale L. Simmons	2225165
SM 2540 C-2011	02/12/2021			02/15/2021 14:26	Yijie Li	2225164, 2225165, 2225166
SM 2540 D-2011	02/12/2021			02/15/2021 14:26	Yijie Li	2225164, 2225165, 2225166
SM 4500 F-C-2011	02/12/2021			02/15/2021 22:12	Dale L. Simmons	2225164
	02/12/2021			02/15/2021 22:56	Dale L. Simmons	2225166
	02/12/2021			02/15/2021 23:27	Dale L. Simmons	2225165
SM 5310 B-2011	02/12/2021			03/01/2021 21:11	Touraj Touran	2225167
	02/12/2021			03/01/2021 21:44	Touraj Touran	2225168
	02/12/2021			03/01/2021 21:54	Touraj Touran	2225169