

Chemical Analysis Report

CEN-DIST-2021-03-09-02

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

Event Description: **Lake Belle / Lake Leonore**
Request ID: **RQ-2021-02-22-30**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-MAR-2021 12:20

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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 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 Belle East Cove

Collection Date/Time: 03/08/2021 12:20

Field ID: G3CE0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230044	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P394689	
	EPA 300.0 Rev. 2.1	Chloride	35	A	mg Cl/L	P394951	
		Sulfate	33	A	mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	18		PCU	P394707	
	SM 2320 B-2011	Total Alkalinity	41		mg CaCO3/L	P394790	
	SM 2540 C-2011	TDS	171		mg/L	P395160	
	SM 2540 D-2011	TSS	3	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P394793	
2230048	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P394928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.79		mg N/L	P394962	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P394715	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P394821	
	SM 5310 B-2011	Organic Carbon	5.9		mg C/L	P395175	
2230052	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394672	

Ref. Method and Comment:

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

Sample Location: Lake Belle North Cove

Collection Date/Time: 03/08/2021 12:39

Field ID: G3CE0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230045	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P394689	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P394951	
		Sulfate	33		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	17	A	PCU	P394707	
	SM 2320 B-2011	Total Alkalinity	38	A	mg CaCO3/L	P394790	
	SM 2540 C-2011	TDS	143		mg/L	P395160	
	SM 2540 D-2011	TSS	4	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P394793	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P394928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P394962	
2230049	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P394715	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P394823	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P395228	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P394672	
	dissolved						

Ref. Method and Comment:

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

Sample Location: Lake Belle near Peninsula Dr

Collection Date/Time: 03/08/2021 12:54

Field ID: G3CE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230046	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P394689	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P394951	
		Sulfate	33		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	18		PCU	P394707	
	SM 2320 B-2011	Total Alkalinity	37		mg CaCO3/L	P394790	
	SM 2540 C-2011	TDS	126		mg/L	P395160	
	SM 2540 D-2011	TSS	3	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P394793	
2230050	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P394928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P394962	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P394715	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P394823	
	SM 5310 B-2011	Organic Carbon	6.0		mg C/L	P395228	
2230054	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394672	

Ref. Method and Comment:

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

Sample Location: Lake Leonore @ Center

Collection Date/Time: 03/08/2021 11:21

Field ID: G4CE0184

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2230047	EPA 180.1 Rev. 2.0	Turbidity	8.2	A	NTU	P394690	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P394951	
		Sulfate	61		mg SO4/L	P394955	
	SM 2120 B-2011	Color (true)	12		PCU	P394707	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P394790	
	SM 2540 C-2011	TDS	162		mg/L	P395160	
	SM 2540 D-2011	TSS	10	I	mg/L	P395152	
	SM 4500 F-C-2011	Fluoride	0.072	I	mg F/L	P394793	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P394928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P394962	
2230051	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P394715	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P394823	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P395228	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P394672	
	dissolved						

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: P394689

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394690

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394928

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394962

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394715

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394821

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394823

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 dissolved
Batch ID: P394672

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

Reference Method: SM 2120 B-2011
Batch ID: P394707

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P394790

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

Reference Method: SM 2540 C-2011
Batch ID: P395160

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P395152

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394793

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P395175

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

Reference Method: SM 5310 B-2011
Batch ID: P395228

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: P394951

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394928

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394962

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394715

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: P394821

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: P394823

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: P394672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.2		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P394707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P394790

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P395175

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P395228

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.3		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230044	Chloride	103		P	90 - 110
2230373	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230044	Sulfate	102		P	90 - 110
2230373	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230048	Ammonia-N	96.0	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230048	Kjeldahl Nitrogen	97.9	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229968	NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394821

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229946	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230049	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230008	O-Phosphate-P	99.0	96.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P394793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230045	Fluoride	99.0	99.7	P/P	94 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P395175

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2229798	Organic Carbon	94.8	94.5	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P395228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2230293	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229944	Turbidity	0.545	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230047	Turbidity	2.31	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230044	Chloride	0.954	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230044	Sulfate	1.03	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230048	Ammonia-N	2.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230048	Kjeldahl Nitrogen	5.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229968	NO2NO3-N	0.339	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229946	Total-P	0.0413	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230049	Total-P	0.833	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230008	O-Phosphate-P	2.23	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P394707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230045	Color (true)	3.21	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P394790

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230045	Total Alkalinity	1.35	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011

Batch ID: P395160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230006	TDS	2.63	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P394793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230045	Fluoride	0.457	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011

Batch ID: P395175

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2229798	Organic Carbon	0.288	Spike	P	0 - 20

Reference Method: SM 5310 B-2011

Batch ID: P395228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2230293	Organic Carbon	0.735	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 365.1 Rev. 2.0 dissolved

Run ID: A103968

Included Lab Sample IDs: 2230052, 2230053, 2230054, 2230055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103971

Included Lab Sample IDs: 2230044, 2230045, 2230046, 2230047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A103976

Included Lab Sample IDs: 2230044, 2230045, 2230046, 2230047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103979

Included Lab Sample IDs: 2230048, 2230049, 2230050, 2230051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	106	P/P	90 - 110
NO2NO3-N	108	107	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A104006

Included Lab Sample IDs: 2230044, 2230045, 2230046, 2230047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.5	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104006

Included Lab Sample IDs: 2230044, 2230045, 2230046, 2230047

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104047

Included Lab Sample IDs: 2230048, 2230049, 2230050, 2230051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	98.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104054

Included Lab Sample IDs: 2230048, 2230049, 2230050, 2230051

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: A104054

Included Lab Sample IDs: 2230048, 2230049, 2230050, 2230051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104057

Included Lab Sample IDs: 2230044, 2230045, 2230046, 2230047

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104098

Included Lab Sample IDs: 2230048, 2230049, 2230050, 2230051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	95.3	P/P	90 - 110
Kjeldahl Nitrogen	98.6	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104142

Included Lab Sample IDs: 2230048

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104174

Included Lab Sample IDs: 2230049, 2230050, 2230051

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	95.1	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					0.545	
	Turbidity					2.31	
EPA 300.0 Rev. 2.1	Chloride	103	103	102		0.954	
	Sulfate	102	102	100		1.03	
EPA 350.1 Rev. 2.0	Ammonia-N	97.2	96.0	98.2			2.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	97.9	108			5.75
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	103			0.339
EPA 365.1 Rev. 2.0	Total-P	104	107	107			0.0413
	Total-P	107	107	108			0.833
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	99.0	96.0			2.23
SM 2120 B-2011	Color (true)	101				3.21	
SM 2320 B-2011	Total Alkalinity	98.8				1.35	
SM 2540 C-2011	TDS					2.63	
SM 4500 F-C-2011	Fluoride	99.3	99.0	99.7			0.457
SM 5310 B-2011	Organic Carbon	94.4	94.8	94.5			0.288
	Organic Carbon	94.3	101				0.735

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2230044, 2230045, 2230046, 2230047
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2230044, 2230045, 2230046, 2230047
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2230044, 2230045, 2230046, 2230047
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2230048, 2230049, 2230050, 2230051
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2230048, 2230049, 2230050, 2230051
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2230048, 2230049, 2230050, 2230051
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2230048, 2230049, 2230050, 2230051
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2230052, 2230053, 2230054, 2230055
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2230044, 2230045, 2230046, 2230047
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2230044, 2230045, 2230046, 2230047
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2230044, 2230045, 2230046, 2230047
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2230044, 2230045, 2230046, 2230047
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2230044, 2230045, 2230046, 2230047
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2230048, 2230049, 2230050, 2230051

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	03/09/2021			03/09/2021 15:16	Yen Ta	2230044, 2230045, 2230046, 2230047
EPA 300.0 Rev. 2.1	03/09/2021			03/12/2021 21:13	Lipi Saha	2230044
	03/09/2021			03/12/2021 22:01	Lipi Saha	2230045
	03/09/2021			03/12/2021 22:14	Lipi Saha	2230046
	03/09/2021			03/12/2021 22:26	Lipi Saha	2230047
EPA 350.1 Rev. 2.0	03/09/2021			03/13/2021 16:43	Ping Hua	2230048
	03/09/2021			03/13/2021 16:47	Ping Hua	2230049
	03/09/2021			03/13/2021 16:48	Ping Hua	2230050
	03/09/2021			03/13/2021 16:49	Ping Hua	2230051
EPA 351.2 Rev. 2.0	03/09/2021	03/15/2021 11:34	Benjamin T. Nordmann	03/16/2021 15:39	Virginia P. Brown	2230048
	03/09/2021	03/15/2021 11:34	Benjamin T. Nordmann	03/16/2021 15:44	Virginia P. Brown	2230049
	03/09/2021	03/15/2021 11:34	Benjamin T. Nordmann	03/16/2021 15:48	Virginia P. Brown	2230050
	03/09/2021	03/15/2021 11:34	Benjamin T. Nordmann	03/16/2021 15:50	Virginia P. Brown	2230051
EPA 353.2 Rev. 2.0	03/09/2021			03/10/2021 10:17	Beverly Y. Sanders	2230048
	03/09/2021			03/10/2021 10:19	Beverly Y. Sanders	2230049
	03/09/2021			03/10/2021 10:20	Beverly Y. Sanders	2230050
	03/09/2021			03/10/2021 10:54	Beverly Y. Sanders	2230051
EPA 365.1 Rev. 2.0	03/09/2021	03/11/2021 12:40	Yen Ta	03/12/2021 15:51	Shengyu Ding	2230048
	03/09/2021	03/11/2021 12:40	Yen Ta	03/12/2021 15:53	Shengyu Ding	2230049
	03/09/2021	03/11/2021 12:40	Yen Ta	03/12/2021 15:54	Shengyu Ding	2230050
	03/09/2021	03/11/2021 12:40	Yen Ta	03/12/2021 15:55	Shengyu Ding	2230051
EPA 365.1 Rev. 2.0 dissolved	03/09/2021			03/09/2021 13:57	Lipi Saha	2230052
	03/09/2021			03/09/2021 13:58	Lipi Saha	2230053
	03/09/2021			03/09/2021 13:59	Lipi Saha	2230054
	03/09/2021			03/09/2021 14:00	Lipi Saha	2230055
SM 2120 B-2011	03/09/2021			03/09/2021 16:27	Benjamin T. Nordmann	2230044
	03/09/2021			03/09/2021 16:28	Benjamin T. Nordmann	2230045
	03/09/2021			03/09/2021 16:29	Benjamin T. Nordmann	2230046, 2230047
SM 2320 B-2011	03/09/2021			03/11/2021 00:01	Dale L. Simmons	2230045
	03/09/2021			03/11/2021 00:58	Dale L. Simmons	2230044
	03/09/2021			03/11/2021 01:11	Dale L. Simmons	2230046
	03/09/2021			03/11/2021 01:25	Dale L. Simmons	2230047
SM 2540 C-2011	03/09/2021			03/12/2021 14:32	Yijie Li	2230044, 2230045, 2230046, 2230047
SM 2540 D-2011	03/09/2021			03/12/2021 14:32	Yijie Li	2230044, 2230045, 2230046, 2230047
SM 4500 F-C-2011	03/09/2021			03/10/2021 23:49	Dale L. Simmons	2230045
	03/09/2021			03/11/2021 00:58	Dale L. Simmons	2230044
	03/09/2021			03/11/2021 01:11	Dale L. Simmons	2230046
	03/09/2021			03/11/2021 01:25	Dale L. Simmons	2230047
SM 5310 B-2011	03/09/2021			03/18/2021 04:46	Madeline Gruver	2230048
	03/09/2021			03/18/2021 22:43	Madeline Gruver	2230050

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	03/09/2021			03/18/2021 23:03	Madeline Gruver	2230049
	03/09/2021			03/18/2021 23:13	Madeline Gruver	2230051