

Chemical Analysis Report

SO-DIST-2022-02-18-01

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

Event Description: **2022 SMP: Lake Placid**
Request ID: **RQ-2022-02-14-26**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
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Certified by: Colin Wright, Program Administrator

Date Certified: 15-MAR-2022 09:42

A handwritten signature in black ink, appearing to read "Colin Wright", 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 June in Winter

Collection Date/Time: 02/17/2022 11:00

Field ID: G4SD0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306804	DEP SOP: NU-094-1	Color (true)**	11	A	PCU	P410077	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P410079	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P410287	
		Sulfate	25		mg SO4/L	P410286	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P410139	
	SM 2540 C-2011	TDS	96		mg/L	P410636	
	SM 2540 D-2011	TSS	5	I	mg/L	P410498	
	SM 4500 F-C-2011	Fluoride	0.059	I	mg F/L	P410142	
2306806	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P410528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P410108	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P410433	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P410098	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P410454	
2306808	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P410069	

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: PlacidJuneCnl@LkeGrvsRd

Collection Date/Time: 02/17/2022 11:40

Field ID: G4SD0209

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306798	DEP SOP: NU-094-1	Color (true)**	48		PCU	P410078	
	EPA 180.1 Rev. 2.0	Turbidity	0.45	I	NTU	P410079	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P410287	
		Sulfate	20		mg SO4/L	P410286	
	SM 2320 B-2011	Total Alkalinity	2.8		mg CaCO3/L	P410139	
	SM 2540 C-2011	TDS	89		mg/L	P410636	
	SM 2540 D-2011	TSS	2	I	mg/L	P410498	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P410142	
2306800	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P410528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P410108	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P410432	
	EPA 365.1 Rev. 2.0	Total-P	0.023		mg P/L	P410098	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P410454	
2306802	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P410069	

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 Placid @ Center

Collection Date/Time: 02/17/2022 12:45

Field ID: G4SD0191

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306805	DEP SOP: NU-094-1	Color (true)**	8.3	A	PCU	P410078	
	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P410079	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P410287	
		Sulfate	18		mg SO4/L	P410286	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P410139	
	SM 2540 C-2011	TDS	75		mg/L	P410636	
	SM 2540 D-2011	TSS	5	I	mg/L	P410498	
	SM 4500 F-C-2011	Fluoride	0.051	I	mg F/L	P410142	
2306807	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P410528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P410109	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P410433	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P410098	
	SM 5310 B-2011	Organic Carbon	5.2		mg C/L	P410453	
2306809	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P410069	

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: LakePlacidOutletAtSR70W

Collection Date/Time: 02/17/2022 13:15

Field ID: G4SD0213

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2306799	DEP SOP: NU-094-1	Color (true)**	310		PCU	P410077	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P410079	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P410287	
		Sulfate	25		mg SO4/L	P410286	
	SM 2320 B-2011	Total Alkalinity	13		mg CaCO3/L	P410139	
	SM 2540 C-2011	TDS	152		mg/L	P410636	
	SM 2540 D-2011	TSS	14		mg/L	P410498	
	SM 4500 F-C-2011	Fluoride	0.078	I	mg F/L	P410142	
2306801	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P410528	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P410109	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P410433	
	EPA 365.1 Rev. 2.0	Total-P	2.0		mg P/L	P410098	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P410454	
2306803	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	1.7		mg P/L	P410069	

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: DEP SOP: NU-094-1
Batch ID: P410077

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P410078

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410079

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410286

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410287

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410528

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410108

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410109

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410432

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410433

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410098

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410069

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

Reference Method: SM 2320 B-2011
Batch ID: P410139

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-2011
Batch ID: P410636

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P410498

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P410142

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P410453

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

Reference Method: SM 5310 B-2011
Batch ID: P410454

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P410077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.5		P	85 - 115

Reference Method: DEP SOP: NU-094-1
Batch ID: P410078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.3		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410079

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410287

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410108

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410109

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410432

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410433

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410098

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410069

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

Reference Method: SM 2320 B-2011
Batch ID: P410139

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P410142

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P410453

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P410454

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: P410286

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301844	Sulfate	97.8		P	90 - 110
2301846	Sulfate	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P410287

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2301844	Chloride	95.1		P	90 - 110
2301846	Chloride	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P410528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306542	Ammonia-N	95.0	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P410108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306543	Kjeldahl Nitrogen	99.1	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P410109

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306573	Kjeldahl Nitrogen	97.0	93.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P410432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306718	NO2NO3-N	94.5	96.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P410433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306806	NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P410098

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306769	Total-P	107	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P410069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306802	O-Phosphate-P	95.2	96.4	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P410142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306585	Fluoride	101	100	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P410453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2305625	Organic Carbon	94.1		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P410454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2306981	Organic Carbon	101		P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P410077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306804	Color (true)	3.79	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P410078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306805	Color (true)	5.09	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P410079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306696	Turbidity	10.7	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301844	Sulfate	0.467	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P410287

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2301844	Chloride	0.575	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P410528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306542	Ammonia-N	7.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306543	Kjeldahl Nitrogen	2.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P410109

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306573	Kjeldahl Nitrogen	3.28	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306718	NO2NO3-N	1.57	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P410433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306806	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P410098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306769	Total-P	0.601	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P410069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306802	O-Phosphate-P	1.14	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P410139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306585	Total Alkalinity	0.543	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P410636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306731	TDS	2.31	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P410142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306585	Fluoride	0.473	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P410453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2305625	Organic Carbon	1.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P410454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2306981	Organic Carbon	0.213	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: A110497

Included Lab Sample IDs: 2306802, 2306803, 2306808, 2306809

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	100	P/P	90 - 110
O-Phosphate-P	100	99.9	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A110500

Included Lab Sample IDs: 2306798, 2306799, 2306804, 2306805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	85 - 115
Color (true)	98.8	99.5	P/P	85 - 115
Color (true)	99.5	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A110501

Included Lab Sample IDs: 2306798, 2306799, 2306804, 2306805

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

Reference Method: SM 2320 B-2011

Run ID: A110525

Included Lab Sample IDs: 2306798, 2306799, 2306804, 2306805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	97.4	P/P	90 - 110
Total Alkalinity	97.4	98.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A110525

Included Lab Sample IDs: 2306798, 2306799, 2306804, 2306805

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A110543

Included Lab Sample IDs: 2306798, 2306799, 2306804, 2306805

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.3	98.9	P/P	90 - 110
Sulfate	100	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110570

Included Lab Sample IDs: 2306801

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110613

Included Lab Sample IDs: 2306800, 2306801, 2306806, 2306807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.5	95.8	P/P	90 - 110
Kjeldahl Nitrogen	96.8	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110618

Included Lab Sample IDs: 2306800, 2306806, 2306807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	98.8	P/P	90 - 110
Total-P	109	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A110660

Included Lab Sample IDs: 2306800, 2306801, 2306806, 2306807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110664

Included Lab Sample IDs: 2306800, 2306801, 2306806, 2306807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	96.3	P/P	90 - 110
Organic Carbon	96.3	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110696

Included Lab Sample IDs: 2306800, 2306801, 2306806, 2306807

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.4	96.5	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	
DEP SOP: NU-094-1	Color (true)	97.5				3.79	
	Color (true)	98.3				5.09	
EPA 180.1 Rev. 2.0	Turbidity	97.4				10.7	
EPA 300.0 Rev. 2.1	Chloride	99.1	95.1	97.6		0.575	
	Sulfate	99.6	97.8	97.8		0.467	
EPA 350.1 Rev. 2.0	Ammonia-N	95.4	95.0	103			7.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.1	95.1			2.81
	Kjeldahl Nitrogen	97.4	97.0	93.8			3.28
EPA 353.2 Rev. 2.0	NO2NO3-N	97.0	94.5	96.0			1.57
	NO2NO3-N	98.5	99.5	99.0			0.504
EPA 365.1 Rev. 2.0	Total-P	104	107	108			0.601
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	95.2	96.4			1.14
SM 2320 B-2011	Total Alkalinity	99.8				0.543	
SM 2540 C-2011	TDS					2.31	
SM 4500 F-C-2011	Fluoride	101	101	100			0.473
SM 5310 B-2011	Organic Carbon	96.0	94.1				1.95
	Organic Carbon	97.8	101				0.213

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2306798, 2306799, 2306804, 2306805
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2306798, 2306799, 2306804, 2306805
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2306798, 2306799, 2306804, 2306805
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2306798, 2306799, 2306804, 2306805
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2306800, 2306801, 2306806, 2306807
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2306800, 2306801, 2306806, 2306807
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2306800, 2306801, 2306806, 2306807
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2306800, 2306801, 2306806, 2306807
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2306802, 2306803, 2306808, 2306809
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2306798, 2306799, 2306804, 2306805
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2306798, 2306799, 2306804, 2306805
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2306798, 2306799, 2306804, 2306805
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2306798, 2306799, 2306804, 2306805
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2306800, 2306801, 2306806, 2306807

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	02/18/2022			02/18/2022 16:08	Anna M. Plaviak	2306804
	02/18/2022			02/18/2022 16:19	Anna M. Plaviak	2306798
	02/18/2022			02/18/2022 16:20	Anna M. Plaviak	2306805
	02/18/2022			02/18/2022 16:24	Anna M. Plaviak	2306799
EPA 180.1 Rev. 2.0	02/18/2022			02/18/2022 15:11	Khloe J Berg	2306798
	02/18/2022			02/18/2022 15:12	Khloe J Berg	2306799
	02/18/2022			02/18/2022 15:18	Khloe J Berg	2306804
	02/18/2022			02/18/2022 15:19	Khloe J Berg	2306805
EPA 300.0 Rev. 2.1	02/18/2022			02/23/2022 17:13	Roberta Tatti	2306798
	02/18/2022			02/23/2022 17:24	Roberta Tatti	2306799
	02/18/2022			02/23/2022 17:36	Roberta Tatti	2306804
	02/18/2022			02/23/2022 17:48	Roberta Tatti	2306805
EPA 350.1 Rev. 2.0	02/18/2022			03/01/2022 12:39	Ping Hua	2306800
	02/18/2022			03/01/2022 12:40	Ping Hua	2306801
	02/18/2022			03/01/2022 12:41	Ping Hua	2306806
	02/18/2022			03/01/2022 12:43	Ping Hua	2306807
EPA 351.2 Rev. 2.0	02/18/2022	02/22/2022 13:18	Samantha L Bates	02/24/2022 14:57	Alexandra J Mattheus	2306800
	02/18/2022	02/22/2022 13:18	Samantha L Bates	02/24/2022 14:59	Alexandra J Mattheus	2306806
	02/18/2022	02/22/2022 13:18	Samantha L Bates	02/24/2022 16:21	Alexandra J Mattheus	2306801
	02/18/2022	02/22/2022 13:18	Samantha L Bates	02/24/2022 16:22	Alexandra J Mattheus	2306807
EPA 353.2 Rev. 2.0	02/18/2022			02/28/2022 11:30	Beverly Y. Sanders	2306806
	02/18/2022			02/28/2022 11:36	Beverly Y. Sanders	2306801
	02/18/2022			02/28/2022 11:37	Beverly Y. Sanders	2306807
	02/18/2022			02/28/2022 12:25	Beverly Y. Sanders	2306800
EPA 365.1 Rev. 2.0	02/18/2022	02/22/2022 16:05	Simonne.V. Calhoun	02/23/2022 14:29	Shengyu Ding	2306801
	02/18/2022	02/22/2022 16:05	Simonne.V. Calhoun	02/23/2022 14:37	Sarah A Nixon	2306800
	02/18/2022	02/22/2022 16:05	Simonne.V. Calhoun	02/23/2022 14:38	Sarah A Nixon	2306806
	02/18/2022	02/22/2022 16:05	Simonne.V. Calhoun	02/23/2022 14:45	Sarah A Nixon	2306807
EPA 365.1 Rev. 2.0 dissolved	02/18/2022			02/18/2022 14:42	James L Waggeberby	2306802
	02/18/2022			02/18/2022 14:54	James L Waggeberby	2306809
	02/18/2022			02/18/2022 15:18	James L Waggeberby	2306808
	02/18/2022			02/18/2022 15:19	James L Waggeberby	2306803
SM 2320 B-2011	02/18/2022			02/22/2022 04:58	Dale L. Simmons	2306798
	02/18/2022			02/22/2022 05:09	Dale L. Simmons	2306799
	02/18/2022			02/22/2022 05:22	Dale L. Simmons	2306804
	02/18/2022			02/22/2022 06:09	Dale L. Simmons	2306805
SM 2540 C-2011	02/18/2022			02/23/2022 15:49	Yijie Li	2306798, 2306799, 2306804, 2306805
SM 2540 D-2011	02/18/2022			02/23/2022 15:49	Yijie Li	2306798, 2306799, 2306804, 2306805
SM 4500 F-C-2011	02/18/2022			02/22/2022 04:58	Dale L. Simmons	2306798
	02/18/2022			02/22/2022 05:09	Dale L. Simmons	2306799

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	02/18/2022			02/22/2022 05:22	Dale L. Simmons	2306804
	02/18/2022			02/22/2022 06:09	Dale L. Simmons	2306805
SM 5310 B-2011	02/18/2022			02/28/2022 10:01	Touraj Touran	2306807
	02/18/2022			02/28/2022 13:52	Touraj Touran	2306800
	02/18/2022			02/28/2022 14:06	Touraj Touran	2306801
	02/18/2022			02/28/2022 14:20	Touraj Touran	2306806