Chemical Analysis Report

SE-DIST-2023-02-23-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **SMP - Highlands Boat**
Request ID: **RQ-2023-02-06-34**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
2199 South Rock Road
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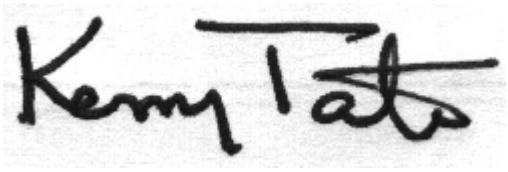
Date Certified: 17-MAR-2023 10:46



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 Placid near center **Collection Date/Time: 02/22/2023 10:45**

Field ID: G4SE0163 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389632	DEP SOP: NU-094-1	Color (true)	13		PCU	P426303	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P426309	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P426693	
		Sulfate	18		mg SO4/L	P426696	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	84		mg/L	P426801	
	SM 2540 D-2015	TSS	5	I	mg/L	P426740	
	SM 4500-F- C-2011	Fluoride	0.050	I	mg F/L	P426598	
2389633	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P426543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62	J	mg N/L	P426718	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426537	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P426823	
	SM 5310 B-2011	Organic Carbon	5.7		mg C/L	P426788	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Lake Apthorpe near center **Collection Date/Time: 02/22/2023 11:30**

Field ID: G4SE0161 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389624	DEP SOP: NU-094-1	Color (true)	18	A	PCU	P426303	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P426309	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P426693	
		Sulfate	36		mg SO4/L	P426696	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	134		mg/L	P426801	
	SM 2540 D-2015	TSS	2	I	mg/L	P426740	
	SM 4500-F- C-2011	Fluoride	0.050	I	mg F/L	P426598	
2389628	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P426543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P426717	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P426537	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P426823	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P426788	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Henry near center **Collection Date/Time: 02/22/2023 12:15**

Field ID: G4SE0162 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389625	DEP SOP: NU-094-1	Color (true)	12		PCU	P426303	
	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P426309	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P426693	
		Sulfate	24		mg SO4/L	P426696	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	87		mg/L	P426801	
	SM 2540 D-2015	TSS	4	I	mg/L	P426740	
	SM 4500-F- C-2011	Fluoride	0.067	I	mg F/L	P426598	
2389629	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P426543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P426718	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426537	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P426823	
	SM 5310 B-2011	Organic Carbon	9.1		mg C/L	P426788	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Francis near center **Collection Date/Time: 02/22/2023 13:00**

Field ID: G4SE0165 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389626	DEP SOP: NU-094-1	Color (true)	10		PCU	P426303	
	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P426309	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P426693	
		Sulfate	26		mg SO4/L	P426696	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	110		mg/L	P426801	
	SM 2540 D-2015	TSS	4	I	mg/L	P426740	
	SM 4500-F- C-2011	Fluoride	0.059	I	mg F/L	P426598	
2389630	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P426543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P426718	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426537	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P426823	
	SM 5310 B-2011	Organic Carbon	7.0		mg C/L	P426788	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Carrie near center **Collection Date/Time: 02/22/2023 13:30**

Field ID: G4SE0164 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2389627	DEP SOP: NU-094-1	Color (true)	130		PCU	P426303	
	EPA 180.1 Rev. 2.0	Turbidity	7.9		NTU	P426309	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P426693	
		Sulfate	5.6		mg SO4/L	P426696	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P426594	
	SM 2540 C-2015	TDS	100		mg/L	P426801	
	SM 2540 D-2015	TSS	5	I	mg/L	P426740	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P426598	
2389631	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P426543	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P426718	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426537	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P426823	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P426788	

Ref. Method and Comment:
SM 2540 D-2015: 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: P426303

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426309

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426693

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426696

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426543

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426717

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426718

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426537

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426823

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P426594

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

Reference Method: SM 2540 C-2015
Batch ID: P426801

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426740

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P426788

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: P426303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426309

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426696

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426543

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: P426717

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426718

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426823

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P426594

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.8		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P426801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.2		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P426740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426788

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389573	Chloride	94.4		P	90 - 110
2389625	Chloride	93.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389573	Sulfate	98.7		P	90 - 110
2389625	Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389628	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389482	Kjeldahl Nitrogen	106	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389633	Kjeldahl Nitrogen	104	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389618	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426823

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389545	Total-P	100	99.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389872	Fluoride	99.9	99.3	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426788

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389629	Organic Carbon	94.5	95.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389624	Color (true)	1.97	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389573	Turbidity	11.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389573	Chloride	0.153	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389573	Sulfate	0.831	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389628	Ammonia-N	1.21	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389482	Kjeldahl Nitrogen	3.06	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389633	Kjeldahl Nitrogen	4.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389618	NO2NO3-N	0.494	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426823

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389545	Total-P	0.776	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P426594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389872	Total Alkalinity	0.146	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389380	TDS	4.49	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P426598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389872	Fluoride	0.482	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389629	Organic Carbon	0.996	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A117629
Included Lab Sample IDs: 2389624, 2389625, 2389626, 2389627, 2389632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A117632
Included Lab Sample IDs: 2389624, 2389625, 2389626, 2389627, 2389632

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A117687
Included Lab Sample IDs: 2389624, 2389625, 2389626, 2389627, 2389632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.6	95.6	P/P	90 - 110
Chloride	95.6	96.6	P/P	90 - 110
Sulfate	98.0	98.1	P/P	90 - 110
Sulfate	98.1	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117735
Included Lab Sample IDs: 2389628, 2389629, 2389630, 2389631, 2389633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A117738
Included Lab Sample IDs: 2389628, 2389629, 2389630, 2389631, 2389633

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

Reference Method: SM 2320 B-2011
Run ID: A117758
Included Lab Sample IDs: 2389624, 2389625, 2389626, 2389627, 2389632

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.4	99.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A117758
Included Lab Sample IDs: 2389624, 2389625, 2389626, 2389627, 2389632

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A117844
Included Lab Sample IDs: 2389628, 2389629, 2389630, 2389631, 2389633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	95.4	P/P	90 - 110
Organic Carbon	95.4	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117881
Included Lab Sample IDs: 2389628

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.2	94.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117914
Included Lab Sample IDs: 2389629, 2389630, 2389631, 2389633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.6	95.8	P/P	90 - 110
Kjeldahl Nitrogen	97.2	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117936
Included Lab Sample IDs: 2389628, 2389629, 2389630, 2389631, 2389633

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	99.0	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		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	101				1.97	
EPA 180.1 Rev. 2.0	Turbidity	99.8				11.0	
EPA 300.0 Rev. 2.1	Chloride	94.5	94.4	93.8		0.153	
	Sulfate	97.5	98.7	96.0		0.831	
EPA 350.1 Rev. 2.0	Ammonia-N	102	100	102			1.21
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	106	100			3.06
	Kjeldahl Nitrogen	100	104	111			4.71
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	101			0.494
EPA 365.1 Rev. 2.0	Total-P	98.9	100	99.4			0.776
SM 2320 B-2011	Total Alkalinity	97.8				0.146	
SM 2540 C-2015	TDS	94.2				4.49	
SM 2540 D-2015	TSS	93.3					
SM 4500-F- C-2011	Fluoride	100	99.9	99.3			0.482
SM 5310 B-2011	Organic Carbon	94.1	94.5	95.9			0.996

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2389624, 2389625, 2389626, 2389627, 2389632
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2389624, 2389625, 2389626, 2389627, 2389632
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2389624, 2389625, 2389626, 2389627, 2389632
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2389624, 2389625, 2389626, 2389627, 2389632
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2389628, 2389629, 2389630, 2389631, 2389633
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2389628, 2389629, 2389630, 2389631, 2389633
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2389628, 2389629, 2389630, 2389631, 2389633
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2389628, 2389629, 2389630, 2389631, 2389633
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2389624, 2389625, 2389626, 2389627, 2389632
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2389624, 2389625, 2389626, 2389627, 2389632
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2389624, 2389625, 2389626, 2389627, 2389632
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2389624, 2389625, 2389626, 2389627, 2389632
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2389628, 2389629, 2389630, 2389631, 2389633

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	02/23/2023			02/23/2023 14:15	Alexis Price	2389624
	02/23/2023			02/23/2023 14:16	Alexis Price	2389625, 2389626
	02/23/2023			02/23/2023 14:17	Alexis Price	2389627, 2389632
EPA 180.1 Rev. 2.0	02/23/2023			02/23/2023 14:38	Khloe J Berg	2389624
	02/23/2023			02/23/2023 14:39	Khloe J Berg	2389625
	02/23/2023			02/23/2023 14:40	Khloe J Berg	2389626
	02/23/2023			02/23/2023 14:41	Khloe J Berg	2389627
	02/23/2023			02/23/2023 14:42	Khloe J Berg	2389632
EPA 300.0 Rev. 2.1	02/23/2023			03/04/2023 01:09	Judith K. Clark	2389625
	02/23/2023			03/04/2023 04:24	Judith K. Clark	2389624
	02/23/2023			03/04/2023 04:39	Judith K. Clark	2389626
	02/23/2023			03/04/2023 04:54	Judith K. Clark	2389627
	02/23/2023			03/04/2023 05:09	Judith K. Clark	2389632
EPA 350.1 Rev. 2.0	02/23/2023			03/01/2023 11:19	Khloe J Berg	2389628
	02/23/2023			03/01/2023 11:20	Khloe J Berg	2389629
	02/23/2023			03/01/2023 11:21	Khloe J Berg	2389630
	02/23/2023			03/01/2023 11:23	Khloe J Berg	2389631
	02/23/2023			03/01/2023 11:24	Khloe J Berg	2389633
EPA 351.2 Rev. 2.0	02/23/2023	03/07/2023 09:18	Simonne.V. Calhoun	03/08/2023 16:17	Judith K. Clark	2389628
	02/23/2023	03/07/2023 09:18	Simonne.V. Calhoun	03/09/2023 17:50	Judith K. Clark	2389629
	02/23/2023	03/07/2023 09:18	Simonne.V. Calhoun	03/09/2023 17:51	Judith K. Clark	2389630
	02/23/2023	03/07/2023 09:18	Simonne.V. Calhoun	03/09/2023 17:56	Judith K. Clark	2389631
	02/23/2023	03/07/2023 09:18	Simonne.V. Calhoun	03/09/2023 17:57	Judith K. Clark	2389633
EPA 353.2 Rev. 2.0	02/23/2023			02/28/2023 12:13	Beverly Y. Sanders	2389628
	02/23/2023			02/28/2023 12:14	Beverly Y. Sanders	2389629
	02/23/2023			02/28/2023 12:15	Beverly Y. Sanders	2389630
	02/23/2023			02/28/2023 12:16	Beverly Y. Sanders	2389631
	02/23/2023			02/28/2023 12:17	Beverly Y. Sanders	2389633
EPA 365.1 Rev. 2.0	02/23/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:16	James L Waggerby	2389628
	02/23/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:17	James L Waggerby	2389629
	02/23/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:18	James L Waggerby	2389630
	02/23/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:19	James L Waggerby	2389631
	02/23/2023	03/08/2023 02:00	Alexis Price	03/10/2023 12:20	James L Waggerby	2389633
SM 2320 B-2011	02/23/2023			03/01/2023 22:41	Dale L. Simmons	2389624
	02/23/2023			03/01/2023 22:54	Dale L. Simmons	2389625
	02/23/2023			03/01/2023 23:07	Dale L. Simmons	2389626
	02/23/2023			03/01/2023 23:20	Dale L. Simmons	2389627
	02/23/2023			03/01/2023 23:33	Dale L. Simmons	2389632
SM 2540 C-2015	02/23/2023			02/27/2023 16:17	Yijie Li	2389624, 2389625, 2389626, 2389627, 2389632

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2015	02/23/2023			02/27/2023 16:17	Yijie Li	2389624, 2389625, 2389626, 2389627, 2389632
SM 4500-F- C-2011	02/23/2023			03/01/2023 22:41	Dale L. Simmons	2389624
	02/23/2023			03/01/2023 22:54	Dale L. Simmons	2389625
	02/23/2023			03/01/2023 23:07	Dale L. Simmons	2389626
	02/23/2023			03/01/2023 23:20	Dale L. Simmons	2389627
	02/23/2023			03/01/2023 23:33	Dale L. Simmons	2389632
SM 5310 B-2011	02/23/2023			03/06/2023 14:47	Elise M. Gillis	2389629
	02/23/2023			03/06/2023 15:45	Elise M. Gillis	2389630
	02/23/2023			03/06/2023 17:40	Elise M. Gillis	2389628
	02/23/2023			03/06/2023 17:54	Elise M. Gillis	2389631
	02/23/2023			03/06/2023 18:08	Elise M. Gillis	2389633