

Chemical Analysis Report

SO-DIST-2023-02-08-01

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

Event Description: **2023 SMP : Land O' Lakes**
Request ID: **RQ-2023-01-30-52**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Colin Wright, Program Administrator

Date Certified: 03-MAR-2023 13:57

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink 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: Bonnet Creek @ SR 64

Collection Date/Time: 02/07/2023 10:15

Field ID: G4SD0107

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385932	DEP SOP: NU-094-1	Color (true)	170		PCU	P425783	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P425560	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P426093	
		Sulfate	22		mg SO4/L	P426096	
	SM 2320 B-2011	Total Alkalinity	24	A	mg CaCO3/L	P425851	
	SM 2540 C-2015	TDS	144		mg/L	P426111	
	SM 2540 D-2015	TSS	2	I	mg/L	P426004	
	SM 4500-F- C-2011	Fluoride	0.084	I	mg F/L	P425854	
2385933	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P425978	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P425807	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P425774	
	EPA 365.1 Rev. 2.0	Total-P	0.70		mg P/L	P425760	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P425681	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

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

Sample Location: Lake June in Winter

Collection Date/Time: 02/07/2023 12:55

Field ID: G4SD0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385924	DEP SOP: NU-094-1	Color (true)	10		PCU	P425783	
	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P425560	
	EPA 300.0 Rev. 2.1	Chloride	18	A	mg Cl/L	P426093	
		Sulfate	26	A	mg SO4/L	P426096	
	SM 2320 B-2011	Total Alkalinity	20		mg CaCO3/L	P425849	
	SM 2540 C-2015	TDS	116		mg/L	P426111	
	SM 2540 D-2015	TSS	4	I	mg/L	P426004	
	SM 4500-F- C-2011	Fluoride	0.061	I	mg F/L	P425853	
2385926	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P426086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P425754	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P425773	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P425760	
	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P425680	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

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

Sample Location: Red Water Lake

Collection Date/Time: 02/07/2023 12:10

Field ID: G4SD0224

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385928	DEP SOP: NU-094-1	Color (true)	16		PCU	P425783	
	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P425560	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P426093	
		Sulfate	30		mg SO4/L	P426096	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P425851	
	SM 2540 C-2015	TDS	116		mg/L	P426111	
	SM 2540 D-2015	TSS	5	I	mg/L	P426004	
2385929	SM 4500-F- C-2011	Fluoride	0.052	I	mg F/L	P425854	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P425978	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P425807	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425774	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P425798	
	SM 5310 B-2011	Organic Carbon	9.6		mg C/L	P425681	

Ref. Method and Comment:

DEP SOP: NU-094-1: Batch relative percent difference is unavailable because of analytical difficulties.

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

Sample Location: Lake Glenada

Collection Date/Time: 02/07/2023 11:00

Field ID: G4SD0179

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2385925	DEP SOP: NU-094-1	Color (true)	51	A	PCU	P425558	
	EPA 180.1 Rev. 2.0	Turbidity	17		NTU	P425560	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P426093	
		Sulfate	16		mg SO4/L	P426096	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P425849	
	SM 2540 C-2015	TDS	110		mg/L	P426111	
	SM 2540 D-2015	TSS	16		mg/L	P426004	
	SM 4500-F- C-2011	Fluoride	0.078	I	mg F/L	P425853	
2385927	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P426086	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P425807	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P425774	
	EPA 365.1 Rev. 2.0	Total-P	0.069		mg P/L	P425760	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P425680	

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: P425558

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P425783

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425560

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426093

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426096

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425978

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426086

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425754

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425807

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425773

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425774

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425760

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425798

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

Reference Method: SM 2320 B-2011
Batch ID: P425849

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

Reference Method: SM 2320 B-2011
Batch ID: P425851

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

Reference Method: SM 2540 C-2015
Batch ID: P426111

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426004

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425853

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P425854

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425680

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

Reference Method: SM 5310 B-2011
Batch ID: P425681

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: P425558

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P425783

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425560

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426093

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426096

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425978

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425754

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425807

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425773

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425774

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: P425760

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425798

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.3		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P425849

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P425851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P426111

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

Reference Method: SM 2540 D-2015
Batch ID: P426004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.5		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P425854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P425681

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385924	Chloride	93.5		P	90 - 110
2385928	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385924	Sulfate	94.6		P	90 - 110
2385928	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386245	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385926	Ammonia-N	99.0	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385507	Kjeldahl Nitrogen	98.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385927	Kjeldahl Nitrogen	95.0	99.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385791	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385927	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425760

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385960	Total-P	103	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425798

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383819	Total-P	98.6	99.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P425853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385842	Fluoride	101	102	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P425854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385932	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P425680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385792	Organic Carbon	95.2	97.8	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P425681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386245	Organic Carbon	96.6	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P425558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385925	Color (true)	1.79	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385879	Turbidity	0.953	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385924	Chloride	3.43	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385924	Sulfate	3.25	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386245	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385926	Ammonia-N	2.44	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385507	Kjeldahl Nitrogen	2.41	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385927	Kjeldahl Nitrogen	2.54	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385791	NO2NO3-N	0.272	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385927	NO2NO3-N	0.494	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425760

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385960	Total-P	2.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425798

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383819	Total-P	0.978	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P425849

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385842	Total Alkalinity	2.50	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P425851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385932	Total Alkalinity	0.531	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385790	TDS	7.87	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385842	Fluoride	0.506	Spike	P	0 - 1.6

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P425854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385932	Fluoride	0.492	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385792	Organic Carbon	1.79	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P425681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386245	Organic Carbon	1.49	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: A117332

Included Lab Sample IDs: 2385924, 2385925, 2385928, 2385932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 110
Color (true)	104	102	P/P	90 - 110
Color (true)	104	104	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A117333

Included Lab Sample IDs: 2385924, 2385925, 2385928, 2385932

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

Reference Method: SM 5310 B-2011

Run ID: A117394

Included Lab Sample IDs: 2385926, 2385927, 2385929, 2385933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	100	P/P	90 - 110
Organic Carbon	99.3	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117426

Included Lab Sample IDs: 2385924, 2385925, 2385928, 2385932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	97.9	P/P	90 - 110
Chloride	97.9	98.7	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110
Sulfate	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A117432

Included Lab Sample IDs: 2385926, 2385927, 2385929, 2385933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117452

Included Lab Sample IDs: 2385924, 2385925, 2385928, 2385932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.9	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117452

Included Lab Sample IDs: 2385924, 2385925, 2385928, 2385932

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117466

Included Lab Sample IDs: 2385927, 2385933

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117469

Included Lab Sample IDs: 2385926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A117485

Included Lab Sample IDs: 2385929

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117495

Included Lab Sample IDs: 2385929, 2385933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117528

Included Lab Sample IDs: 2385927, 2385929, 2385933

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	97.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117540

Included Lab Sample IDs: 2385926, 2385927

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117569

Included Lab Sample IDs: 2385926

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.8	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)	102				1.79	
	Color (true)	102					
EPA 180.1 Rev. 2.0	Turbidity	100				0.953	
EPA 300.0 Rev. 2.1	Chloride	99.2	93.5	96.8		3.43	
	Sulfate	102	94.6	99.4		3.25	
EPA 350.1 Rev. 2.0	Ammonia-N	100	102	101			1.18
	Ammonia-N	97.6	99.0	102			2.44
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	98.8	101			2.41
	Kjeldahl Nitrogen	101	95.0	99.6			2.54
EPA 353.2 Rev. 2.0	NO2NO3-N	102	100	99.5			0.272
	NO2NO3-N	102	102	101			0.494
EPA 365.1 Rev. 2.0	Total-P	101	100	103			2.37
	Total-P	98.3	98.6	99.9			0.978
SM 2320 B-2011	Total Alkalinity	99.0				2.50	
	Total Alkalinity	100				0.531	
SM 2540 C-2015	TDS	98.9				7.87	
SM 2540 D-2015	TSS	96.5					
SM 4500-F- C-2011	Fluoride	102	101	102			0.506
	Fluoride	101	101	101			0.492
SM 5310 B-2011	Organic Carbon	95.2	95.2	97.8			1.79
	Organic Carbon	99.8	96.6	98.1			1.49

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2385924, 2385925, 2385928, 2385932
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2385924, 2385925, 2385928, 2385932
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2385924, 2385925, 2385928, 2385932
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2385924, 2385925, 2385928, 2385932
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2385926, 2385927, 2385929, 2385933
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2385926, 2385927, 2385929, 2385933
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2385926, 2385927, 2385929, 2385933
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2385926, 2385927, 2385929, 2385933
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2385924, 2385925, 2385928, 2385932
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2385924, 2385925, 2385928, 2385932
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2385924, 2385925, 2385928, 2385932
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2385924, 2385925, 2385928, 2385932
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2385926, 2385927, 2385929, 2385933

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	02/08/2023			02/08/2023 15:01	Alexis Price	2385924
	02/08/2023			02/08/2023 15:03	Alexis Price	2385928
	02/08/2023			02/08/2023 15:12	Alexis Price	2385925
	02/08/2023			02/08/2023 15:30	Alexis Price	2385932
EPA 180.1 Rev. 2.0	02/08/2023			02/08/2023 14:27	Khloe J Berg	2385924
	02/08/2023			02/08/2023 14:28	Khloe J Berg	2385925
	02/08/2023			02/08/2023 14:29	Khloe J Berg	2385928
	02/08/2023			02/08/2023 14:31	Khloe J Berg	2385932
EPA 300.0 Rev. 2.1	02/08/2023			02/17/2023 05:06	Anna M. Plaviak	2385924
	02/08/2023			02/17/2023 05:36	Anna M. Plaviak	2385928
	02/08/2023			02/17/2023 08:51	Anna M. Plaviak	2385925
	02/08/2023			02/17/2023 09:06	Anna M. Plaviak	2385932
EPA 350.1 Rev. 2.0	02/08/2023			02/16/2023 12:55	Ping Hua	2385929
	02/08/2023			02/16/2023 12:56	Ping Hua	2385933
	02/08/2023			02/20/2023 10:43	Khloe J Berg	2385926
	02/08/2023			02/20/2023 10:50	Khloe J Berg	2385927
EPA 351.2 Rev. 2.0	02/08/2023	02/14/2023 13:15	Simonne.V. Calhoun	02/21/2023 11:40	Samantha L Bates	2385926
	02/08/2023	02/15/2023 11:46	Samantha L Bates	02/17/2023 15:07	Samantha L Bates	2385927
	02/08/2023	02/15/2023 11:46	Samantha L Bates	02/17/2023 15:12	Samantha L Bates	2385929
	02/08/2023	02/15/2023 11:46	Samantha L Bates	02/17/2023 15:14	Samantha L Bates	2385933
EPA 353.2 Rev. 2.0	02/08/2023			02/14/2023 10:26	Beverly Y. Sanders	2385926
	02/08/2023			02/14/2023 10:33	Beverly Y. Sanders	2385927
	02/08/2023			02/14/2023 10:39	Beverly Y. Sanders	2385929
	02/08/2023			02/14/2023 10:41	Beverly Y. Sanders	2385933
EPA 365.1 Rev. 2.0	02/08/2023	02/14/2023 13:21	Adam P Silver	02/15/2023 15:04	Simonne.V. Calhoun	2385927
	02/08/2023	02/14/2023 13:21	Adam P Silver	02/15/2023 15:05	Simonne.V. Calhoun	2385933
	02/08/2023	02/14/2023 13:21	Adam P Silver	02/15/2023 15:41	Simonne.V. Calhoun	2385926
	02/08/2023	02/15/2023 13:30	Adam P Silver	02/16/2023 12:42	James L Waggeberby	2385929
SM 2320 B-2011	02/08/2023			02/15/2023 04:07	Dale L. Simmons	2385924
	02/08/2023			02/15/2023 04:20	Dale L. Simmons	2385925
	02/08/2023			02/15/2023 05:18	Dale L. Simmons	2385932
	02/08/2023			02/15/2023 05:40	Dale L. Simmons	2385928
SM 2540 C-2015	02/08/2023			02/10/2023 16:01	Yijie Li	2385924, 2385925, 2385928, 2385932
SM 2540 D-2015	02/08/2023			02/10/2023 16:01	Yijie Li	2385924, 2385925, 2385928, 2385932
SM 4500-F- C-2011	02/08/2023			02/15/2023 04:07	Dale L. Simmons	2385924
	02/08/2023			02/15/2023 04:20	Dale L. Simmons	2385925
	02/08/2023			02/15/2023 05:08	Dale L. Simmons	2385932
	02/08/2023			02/15/2023 05:40	Dale L. Simmons	2385928
SM 5310 B-2011	02/08/2023			02/10/2023 20:44	Elise M. Gillis	2385926
	02/08/2023			02/10/2023 20:58	Elise M. Gillis	2385927

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	02/08/2023			02/10/2023 23:03	Elise M. Gillis	2385929
	02/08/2023			02/10/2023 23:17	Elise M. Gillis	2385933