

Chemical Analysis Report

NW-DIST-2023-04-11-03

Florida DEP Laboratory
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DOH Accreditation E31780

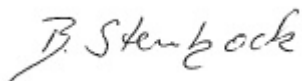
Event Description: **11-Mile Creek Resample**
Request ID: **RQ-2023-04-10-56**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 04-MAY-2023 11:01



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: Elevenmile Creek 500 Yards from Mouth

Collection Date/Time: 04/10/2023 10:21

Field ID: G5NW0007

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399573	DEP SOP: NU-094-1	Color (true)	39		PCU	P428337	
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P428331	
	EPA 300.0 Rev. 2.1	Chloride	640		mg Cl/L	P428764	
		Sulfate	150		mg SO4/L	P428767	
	SM 2320 B-2011	Total Alkalinity	36		mg CaCO3/L	P428508	
	SM 2540 C-2015	TDS	1.21E+03		mg/L	P428904	
	SM 2540 D-2015	TSS	4	I	mg/L	P428821	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P428731	
2399576	EPA 350.1 Rev. 2.0	Ammonia-N	0.084		mg N/L	P428642	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P428475	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.44		mg N/L	P428773	
	EPA 365.1 Rev. 2.0	Total-P	0.052		mg P/L	P428549	
	SM 5310 B-2011	Organic Carbon	5.6		mg C/L	P428482	

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: Tea Lake (Center)

Collection Date/Time: 04/10/2023 10:37

Field ID: G5NW0035

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399574	DEP SOP: NU-094-1	Color (true)	29		PCU	P428337	
	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P428331	
	EPA 300.0 Rev. 2.1	Chloride	3.3E+03		mg Cl/L	P428764	
		Sulfate	500		mg SO4/L	P428767	
	SM 2320 B-2011	Total Alkalinity	34		mg CaCO3/L	P428508	
	SM 2540 C-2015	TDS	5.59E+03		mg/L	P428904	
	SM 2540 D-2015	TSS	5	I	mg/L	P428821	
	SM 4500-F- C-2011	Fluoride	0.25		mg F/L	P428419	
2399577	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P428643	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P428408	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P428431	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P428550	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P428482	

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: Eleven Mile Creek 1700 Yards above mouth

Collection Date/Time: 04/10/2023 10:03

Field ID: G5NW0008

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399575	DEP SOP: NU-094-1	Color (true)	24		PCU	P428337	
	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P428331	
	EPA 300.0 Rev. 2.1	Chloride	370		mg Cl/L	P428764	
		Sulfate	61		mg SO4/L	P428767	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P428508	
	SM 2540 C-2015	TDS	648		mg/L	P428905	
	SM 2540 D-2015	TSS	2	U	mg/L	P428823	
	SM 4500-F- C-2011	Fluoride	0.042	I	mg F/L	P429108	
2399578	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P428521	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28	I	mg N/L	P428408	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P428773	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P428550	
	SM 5310 B-2011	Organic Carbon	3.2		mg C/L	P429038	

Ref. Method and Comment:

SM 2540 C-2015: The reported result is consistent with the conductivity measured in the laboratory, 1349 umhos/cm.

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

SM 4500-F- C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P428337

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428643

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428475

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: P428431

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428773

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428549

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

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

Reference Method: SM 2320 B-2011
Batch ID: P428508

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

Reference Method: SM 2540 C-2015
Batch ID: P428904

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P428905

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428821

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428823

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P428731

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P429108

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P428482

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

Reference Method: SM 5310 B-2011
Batch ID: P429038

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: P428337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428643

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: P428408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428475

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

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: P428773

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: P428549

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

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

Reference Method: SM 2320 B-2011
Batch ID: P428508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.6		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P428904

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

Reference Method: SM 2540 C-2015
Batch ID: P428905

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

Reference Method: SM 2540 D-2015
Batch ID: P428821

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	99.0		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P428823

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P428731

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

Reference Method: SM 4500-F- C-2011
Batch ID: P429108

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

Reference Method: SM 5310 B-2011
Batch ID: P428482

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P429038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399545	Chloride	100		P	90 - 110
2399662	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399545	Sulfate	99.6		P	90 - 110
2399662	Sulfate	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399301	Ammonia-N	96.4	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399577	Ammonia-N	96.8	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398768	Kjeldahl Nitrogen	101	94.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399576	Kjeldahl Nitrogen	99.2	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398767	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428773

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399546	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428549

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399663	Total-P	101	101	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399841	Total-P	94.5	94.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398269	Fluoride	100	99.4	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P428731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399659	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P428482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399702	Organic Carbon	96.1	99.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P429038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399578	Organic Carbon	96.6	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P428337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399511	Color (true)	1.17	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399511	Turbidity	2.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399545	Chloride	1.37	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399545	Sulfate	1.58	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399578	Ammonia-N	0.253	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399301	Ammonia-N	1.56	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399577	Ammonia-N	1.33	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398768	Kjeldahl Nitrogen	5.75	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399576	Kjeldahl Nitrogen	1.40	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398767	NO2NO3-N	0.460	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428773

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399546	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428549

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399663	Total-P	0.681	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399841	Total-P	0.123	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P428508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399501	Total Alkalinity	1.02	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P428904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399464	TDS	5.71	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P428905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399855	TDS	1.87	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398269	Fluoride	0.464	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P428731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399659	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P429108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2400766	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P428482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399702	Organic Carbon	2.21	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P429038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399578	Organic Carbon	0.238	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A118504

Included Lab Sample IDs: 2399573, 2399574, 2399575

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

Reference Method: DEP SOP: NU-094-1

Run ID: A118508

Included Lab Sample IDs: 2399573, 2399574, 2399575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A118544

Included Lab Sample IDs: 2399574

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118550

Included Lab Sample IDs: 2399577

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

Reference Method: SM 5310 B-2011

Run ID: A118566

Included Lab Sample IDs: 2399576, 2399577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A118577

Included Lab Sample IDs: 2399573, 2399574, 2399575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.6	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118584

Included Lab Sample IDs: 2399578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118612

Included Lab Sample IDs: 2399577, 2399578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A118632

Included Lab Sample IDs: 2399576

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A118633

Included Lab Sample IDs: 2399576, 2399577, 2399578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	100	P/P	90 - 110
Total-P	99.2	98.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A118640

Included Lab Sample IDs: 2399576, 2399577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.4	P/P	90 - 110
Ammonia-N	99.4	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A118641

Included Lab Sample IDs: 2399573, 2399574, 2399575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.2	97.2	P/P	90 - 110
Sulfate	97.7	98.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A118673

Included Lab Sample IDs: 2399573

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A118686

Included Lab Sample IDs: 2399576, 2399578

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

Reference Method: SM 5310 B-2011

Run ID: A118807

Included Lab Sample IDs: 2399578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	95.8	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A118831

Included Lab Sample IDs: 2399575

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	105	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	MS
DEP SOP: NU-094-1	Color (true)	100			1.17	
EPA 180.1 Rev. 2.0	Turbidity	99.6			2.11	
EPA 300.0 Rev. 2.1	Chloride	99.9	100	98.8	1.37	
	Sulfate	100	99.6	99.2	1.58	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0				0.253
	Ammonia-N	97.8	96.4	98.0		1.56
	Ammonia-N	97.2	96.8	98.4		1.33
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	101	94.1		5.75
	Kjeldahl Nitrogen	105	99.2	101		1.40
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	103		0.460
	NO2NO3-N	102	103	103		0.0
EPA 365.1 Rev. 2.0	Total-P	100	101	101		0.681
	Total-P	101	94.5	94.6		0.123
SM 2320 B-2011	Total Alkalinity	94.6			1.02	
SM 2540 C-2015	TDS	103			5.71	
	TDS	96.8			1.87	
SM 2540 D-2015	TSS	99.0				
	TSS	102				
SM 4500-F- C-2011	Fluoride	98.8	100	99.4		0.464
	Fluoride	101	102	102		0.0
	Fluoride	100				0.0
SM 5310 B-2011	Organic Carbon	95.4	96.1	99.1		2.21
	Organic Carbon	98.2	96.6	96.9		0.238

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2399573, 2399574, 2399575
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2399573, 2399574, 2399575
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2399573, 2399574, 2399575
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2399573, 2399574, 2399575
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2399576, 2399577, 2399578
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2399576, 2399577, 2399578
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2399576, 2399577, 2399578
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2399576, 2399577, 2399578
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2399573, 2399574, 2399575
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2399573, 2399574, 2399575
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2399573, 2399574, 2399575
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2399573, 2399574, 2399575
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2399576, 2399577, 2399578

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	04/11/2023			04/11/2023 15:30	Anna M. Plaviak	2399573
	04/11/2023			04/11/2023 15:31	Anna M. Plaviak	2399574
	04/11/2023			04/11/2023 15:32	Anna M. Plaviak	2399575
EPA 180.1 Rev. 2.0	04/11/2023			04/11/2023 13:44	Chandler E Cox	2399573
	04/11/2023			04/11/2023 13:45	Chandler E Cox	2399574
	04/11/2023			04/11/2023 13:46	Chandler E Cox	2399575
EPA 300.0 Rev. 2.1	04/11/2023			04/19/2023 16:34	James L Waggeberby	2399573
	04/11/2023			04/19/2023 16:49	James L Waggeberby	2399574
	04/11/2023			04/19/2023 17:04	James L Waggeberby	2399575
EPA 350.1 Rev. 2.0	04/11/2023			04/14/2023 13:42	Ping Hua	2399578
	04/11/2023			04/18/2023 12:52	Khloe J Berg	2399576
	04/11/2023			04/18/2023 13:07	Khloe J Berg	2399577
EPA 351.2 Rev. 2.0	04/11/2023	04/13/2023 12:30	Simonne.V. Calhoun	04/17/2023 14:37	Samantha L Bates	2399577
	04/11/2023	04/13/2023 12:30	Simonne.V. Calhoun	04/17/2023 14:39	Samantha L Bates	2399578
	04/11/2023	04/14/2023 11:34	Simonne.V. Calhoun	04/18/2023 10:48	Samantha L Bates	2399576
EPA 353.2 Rev. 2.0	04/11/2023			04/13/2023 10:39	Beverly Y. Sanders	2399577
	04/11/2023			04/20/2023 10:13	Beverly Y. Sanders	2399576
	04/11/2023			04/20/2023 10:15	Beverly Y. Sanders	2399578
EPA 365.1 Rev. 2.0	04/11/2023	04/17/2023 18:31	Adam P Silver	04/18/2023 11:47	James L Waggeberby	2399576
	04/11/2023	04/17/2023 18:31	Adam P Silver	04/18/2023 12:01	James L Waggeberby	2399577
	04/11/2023	04/17/2023 18:31	Adam P Silver	04/18/2023 12:02	James L Waggeberby	2399578
SM 2320 B-2011	04/11/2023			04/13/2023 22:09	Dale L. Simmons	2399575
	04/11/2023			04/13/2023 22:31	Dale L. Simmons	2399573
	04/11/2023			04/13/2023 23:00	Dale L. Simmons	2399574
SM 2540 C-2015	04/11/2023			04/14/2023 15:46	Yijie Li	2399573, 2399574, 2399575
SM 2540 D-2015	04/11/2023			04/14/2023 15:46	Yijie Li	2399573, 2399574, 2399575
SM 4500-F- C-2011	04/11/2023			04/12/2023 20:35	Dale L. Simmons	2399574
	04/11/2023			04/20/2023 03:03	Dale L. Simmons	2399573
	04/11/2023			04/26/2023 17:07	Dale L. Simmons	2399575
SM 5310 B-2011	04/11/2023			04/14/2023 01:44	Elise M. Gillis	2399576
	04/11/2023			04/14/2023 02:00	Elise M. Gillis	2399577
	04/11/2023			04/26/2023 21:04	Elise M. Gillis	2399578