Chemical Analysis Report

NW-DIST-2023-02-06-01

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

Event Description: **Dune Lakes Run**
Request ID: **RQ-2023-01-30-57**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

For additional information please contact
Colin Wright, Ph.D.
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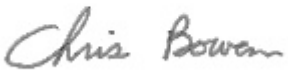
Phone (850) 245-8085

Certified by: Chris Bowen, Environmental Administrator

Date Certified: 01-MAR-2023 08:34



NON-CONFORMANCE REPORT INCLUDED

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: Alligator Lake **Collection Date/Time: 02/01/2023 11:55**

Field ID: G3NW0219 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2384953	DEP SOP: NU-094-1	Color (true)	180	YQ	PCU	P425480	
	EPA 180.1 Rev. 2.0	Turbidity	0.90	I YQ	NTU	P425477	
	EPA 300.0 Rev. 2.1	Chloride	2.5E+03		mg Cl/L	P426056	
		Sulfate	350	Y	mg SO4/L	P426059	
	SM 2320 B-2011	Total Alkalinity	23	Y	mg CaCO3/L	P425570	
	SM 2540 C-2015	TDS	4.80E+03	Y	mg/L	P426041	
	SM 2540 D-2015	TSS	3	UY	mg/L	P426001	
	SM 4500-F- C-2011	Fluoride	0.17		mg F/L	P425696	
2384955	EPA 350.1 Rev. 2.0	Ammonia-N	0.019	Y	mg N/L	P425770	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.43	Y	mg N/L	P425748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I Y	mg N/L	P425518	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I Y	mg P/L	P425542	
	SM 5310 B-2011	Organic Carbon	13	Y	mg C/L	P425588	

Ref. Method and Comment:
DEP SOP: NU-094-1: The sample expired prior to receipt. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 300.0 Rev. 2.1: Sulfate: Sample received outside of the acceptable temperature range. Please see NCR.
SM 2320 B-2011: Sample received outside of the acceptable temperature range. Please see NCR.
SM 2540 C-2015: Sample received outside of the acceptable temperature range. Please see NCR. The reported result is consistent with the conductivity measured in the laboratory, 8430 umhos/cm.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 350.1 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 351.2 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 353.2 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 365.1 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
SM 5310 B-2011: Sample received outside of the acceptable temperature range. Please see NCR.

Sample Location: Western Lake **Collection Date/Time: 02/01/2023 10:35**

Field ID: G3NW0007 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2384954	DEP SOP: NU-094-1	Color (true)	82	YQ	PCU	P425480	
	EPA 180.1 Rev. 2.0	Turbidity	0.60	I YQ	NTU	P425477	
	EPA 300.0 Rev. 2.1	Chloride	2.6E+03		mg Cl/L	P426265	
		Sulfate	350	Y	mg SO4/L	P426059	
	SM 2320 B-2011	Total Alkalinity	34	Y	mg CaCO3/L	P425709	
	SM 2540 C-2015	TDS	4.68E+03	Y	mg/L	P426040	
	SM 2540 D-2015	TSS	2	UY	mg/L	P425998	
	SM 4500-F- C-2011	Fluoride	0.18		mg F/L	P426066	
2384956	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I Y	mg N/L	P425770	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52	Y	mg N/L	P425748	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I Y	mg N/L	P425518	
	EPA 365.1 Rev. 2.0	Total-P	0.008	I Y	mg P/L	P425542	
	SM 5310 B-2011	Organic Carbon	9.1	Y	mg C/L	P425587	

Ref. Method and Comment:
DEP SOP: NU-094-1: The sample expired prior to receipt. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 180.1 Rev. 2.0: The sample expired prior to receipt. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 300.0 Rev. 2.1: Sulfate: Sample received outside of the acceptable temperature range. Please see NCR.
SM 2320 B-2011: Sample received outside of the acceptable temperature range. Please see NCR.
SM 2540 C-2015: Sample received outside of the acceptable temperature range. Please see NCR.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample received outside of the acceptable temperature range. Please see NCR.
EPA 350.1 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 351.2 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 353.2 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
EPA 365.1 Rev. 2.0: Sample received outside of the acceptable temperature range. Please see NCR.
SM 5310 B-2011: Sample received outside of the acceptable temperature range. Please see NCR.

Non-Conformance Report

NCR ID: 9738

Event(s)	Job(s)	Sample(s)	Test(s)
NW-DIST-2023-02-06-01	TLH-2023-02-06-05		

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: Samples arrived late, samples received outside the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.

Authorized by/Date: Kyle Klug 2/9/2023

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P425480

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425477

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426056

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426059

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426265

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425770

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425518

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425542

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: P425570

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

Reference Method: SM 2320 B-2011
Batch ID: P425709

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

Reference Method: SM 2540 C-2015
Batch ID: P426040

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2015
Batch ID: P426041

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P425998

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426001

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426066

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P425587

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P425588

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: P425480

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: P425477

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426059

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425770

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425518

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: P425542

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P425570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.9		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P425709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.9		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P426040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.3		P	90 - 110

Reference Method: SM 2540 C-2015
Batch ID: P426041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.6		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P425998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 2540 D-2015
Batch ID: P426001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	99.8		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	96 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P426066

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

Reference Method: SM 5310 B-2011
Batch ID: P425587

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P425588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426056

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386165	Chloride	91.6		P	90 - 110
2386243	Chloride	95.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386165	Sulfate	93.0		P	90 - 110
2386243	Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383815	Chloride	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425770

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384857	Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384956	Kjeldahl Nitrogen	92.5	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384855	NO2NO3-N	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385263	Total-P	100	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2383791	Fluoride	94.0	95.2	P/P	94 - 104

Reference Method: SM 4500-F- C-2011
Batch ID: P426066

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384793	Fluoride	103	102	P/P	94 - 104

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P425587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384797	Organic Carbon	95.1	97.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P425588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2384229	Organic Carbon	90.4	89.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P425480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384948	Color (true)	1.10	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385024	Turbidity	9.82	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386165	Chloride	2.55	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386165	Sulfate	2.91	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383815	Chloride	3.29	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384857	Ammonia-N	0.160	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384956	Kjeldahl Nitrogen	4.43	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P425518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384855	NO2NO3-N	1.41	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385263	Total-P	2.36	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P425570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384889	Total Alkalinity	0.342	Sample	P	0 - 3.8

Reference Method: SM 2320 B-2011
Batch ID: P425709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385218	Total Alkalinity	0.143	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384704	TDS	5.51	Sample	P	0 - 10

Reference Method: SM 2540 C-2015
Batch ID: P426041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385132	TDS	4.30	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P425696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2383791	Fluoride	0.978	Spike	P	0 - 1.6

Reference Method: SM 4500-F- C-2011
Batch ID: P426066

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384793	Fluoride	0.464	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P425587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384797	Organic Carbon	2.02	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P425588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2384229	Organic Carbon	1.13	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: A117299
Included Lab Sample IDs: 2384953, 2384954

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: A117300
Included Lab Sample IDs: 2384953, 2384954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	99.3	P/P	90 - 110
Color (true)	96.1	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117314
Included Lab Sample IDs: 2384955, 2384956

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

Reference Method: SM 2320 B-2011
Run ID: A117337
Included Lab Sample IDs: 2384953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.8	99.1	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A117348
Included Lab Sample IDs: 2384955, 2384956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.2	93.4	P/P	90 - 110
Organic Carbon	98.6	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117353
Included Lab Sample IDs: 2384955, 2384956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	97.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A117395
Included Lab Sample IDs: 2384953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.0	99.1	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A117401
Included Lab Sample IDs: 2384954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A117401
Included Lab Sample IDs: 2384954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.7	94.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A117426
Included Lab Sample IDs: 2384953

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	94.9	94.9	P/P	90 - 110
Sulfate	99.2	98.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A117427
Included Lab Sample IDs: 2384955, 2384956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A117531
Included Lab Sample IDs: 2384954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117550
Included Lab Sample IDs: 2384955, 2384956

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.5	94.3	P/P	90 - 110
Kjeldahl Nitrogen	97.2	95.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A117607
Included Lab Sample IDs: 2384954

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	104	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				1.10	
EPA 180.1 Rev. 2.0	Turbidity	101				9.82	
EPA 300.0 Rev. 2.1	Chloride	95.3	91.6	95.9		2.55	
	Chloride	106	104			3.29	
	Sulfate	99.8	93.0	98.1		2.91	
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	105	105			0.160
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	92.5	97.4			4.43
EPA 353.2 Rev. 2.0	NO2NO3-N	102	106	108			1.41
EPA 365.1 Rev. 2.0	Total-P	105	100	103			2.36
SM 2320 B-2011	Total Alkalinity	96.9				0.342	
	Total Alkalinity	96.9				0.143	
SM 2540 C-2015	TDS	96.3				5.51	
	TDS	94.6				4.30	
SM 2540 D-2015	TSS	93.1					
	TSS	99.8					
SM 4500-F- C-2011	Fluoride	96.1	94.0	95.2			0.978
	Fluoride	102	103	102			0.464
SM 5310 B-2011	Organic Carbon	95.4	95.1	97.1			2.02
	Organic Carbon	93.0	90.4	89.0			1.13

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2384953, 2384954
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2384953, 2384954
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2384953, 2384954
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2384953, 2384954
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2384955, 2384956
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2384955, 2384956
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2384955, 2384956
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2384955, 2384956
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2384953, 2384954
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2384953, 2384954
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2384953, 2384954
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2384953, 2384954
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2384955, 2384956

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	02/06/2023			02/07/2023 14:19	Alexis Price	2384954
	02/06/2023			02/07/2023 15:01	Alexis Price	2384953
EPA 180.1 Rev. 2.0	02/06/2023			02/07/2023 13:17	Anna M. Plaviak	2384953
	02/06/2023			02/07/2023 13:18	Anna M. Plaviak	2384954
EPA 300.0 Rev. 2.1	02/06/2023			02/18/2023 01:38	Anna M. Plaviak	2384953
	02/06/2023			02/18/2023 01:53	Anna M. Plaviak	2384954
	02/06/2023			02/22/2023 20:55	Anna M. Plaviak	2384954
EPA 350.1 Rev. 2.0	02/06/2023			02/14/2023 11:19	Ping Hua	2384955
	02/06/2023			02/14/2023 11:21	Ping Hua	2384956
EPA 351.2 Rev. 2.0	02/06/2023	02/14/2023 13:15	Simonne.V. Calhoun	02/20/2023 14:31	Samantha L Bates	2384955
	02/06/2023	02/14/2023 13:15	Simonne.V. Calhoun	02/20/2023 14:36	Samantha L Bates	2384956
EPA 353.2 Rev. 2.0	02/06/2023			02/08/2023 10:33	Beverly Y. Sanders	2384955
	02/06/2023			02/08/2023 10:34	Beverly Y. Sanders	2384956
EPA 365.1 Rev. 2.0	02/06/2023	02/08/2023 16:06	Adam P Silver	02/09/2023 12:14	Simonne.V. Calhoun	2384955
	02/06/2023	02/08/2023 16:06	Adam P Silver	02/09/2023 12:15	Simonne.V. Calhoun	2384956
SM 2320 B-2011	02/06/2023			02/09/2023 06:21	Dale L. Simmons	2384953
	02/06/2023			02/11/2023 06:57	Dale L. Simmons	2384954
SM 2540 C-2015	02/06/2023			02/08/2023 10:10	Yijie Li	2384954
	02/06/2023			02/08/2023 10:18	Yijie Li	2384953
SM 2540 D-2015	02/06/2023			02/08/2023 10:10	Yijie Li	2384954
	02/06/2023			02/08/2023 10:18	Yijie Li	2384953
SM 4500-F- C-2011	02/06/2023			02/10/2023 02:44	Dale L. Simmons	2384953
	02/06/2023			02/18/2023 02:53	Dale L. Simmons	2384954
SM 5310 B-2011	02/06/2023			02/08/2023 19:37	Elise M. Gillis	2384956
	02/06/2023			02/09/2023 04:52	Elise M. Gillis	2384955