

Chemical Analysis Report

SW-DIST-2023-05-12-01

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

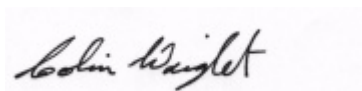
Event Description: **Run 5 - Polk Lakes**
Request ID: **RQ-2023-05-08-04**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-JUN-2023 10:16

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: LAKE WHISTLER AT CENTER

Collection Date/Time: 05/11/2023 09:15

Field ID: G3SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409306	DEP SOP: NU-094-1	Color (true)	16		PCU	P429836	
	EPA 180.1 Rev. 2.0	Turbidity	0.95	I	NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P430019	
		Sulfate	37		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	24	A	mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	135		mg/L	P430415	
	SM 2540 D-2015	TSS	2	I	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.20		mg F/L	P430159	
2409309	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P429971	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P430038	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P429863	
	SM 5310 B-2011	Organic Carbon	6.3		mg C/L	P429963	

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: FB

Collection Date/Time: 05/11/2023 09:30

Field ID: FB_05112023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409307	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P429836	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P429840	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P430019	
		Sulfate	0.20	U	mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	15	U	mg/L	P430415	
	SM 2540 D-2015	TSS	2	U	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P430159	
2409310	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P429972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P430038	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P429863	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P430226	

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 IDA AT CENTER

Collection Date/Time: 05/11/2023 10:20

Field ID: G3SW0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409308	DEP SOP: NU-094-1	Color (true)	24	A	PCU	P429837	
	EPA 180.1 Rev. 2.0	Turbidity	0.90	I	NTU	P429841	RPD
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P430019	
		Sulfate	22		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	170		mg/L	P430415	
	SM 2540 D-2015	TSS	3	I	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.16		mg F/L	P430159	
2409311	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P429972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.70		mg N/L	P430038	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P429863	
	SM 5310 B-2011	Organic Carbon	8.4		mg C/L	P429963	

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: P429836

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429840

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430038

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: P430280

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429863

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

Reference Method: SM 2320 B-2011
Batch ID: P430154

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

Reference Method: SM 2540 C-2015
Batch ID: P430415

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P430220

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429963

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

Reference Method: SM 5310 B-2011
Batch ID: P430226

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: P429836

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

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

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: P429840

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430038

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

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: P429863

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

Reference Method: SM 2320 B-2011
Batch ID: P430154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P430415

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

Reference Method: SM 2540 D-2015
Batch ID: P430220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P430226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Chloride	99.5		P	90 - 110
2409324	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Sulfate	93.6		P	90 - 110
2409324	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409263	Ammonia-N	96.4	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409311	Ammonia-N	96.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409277	Kjeldahl Nitrogen	92.2	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409287	NO2NO3-N	96.8	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429863

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409264	Total-P	103	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409306	Fluoride	104	103	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P429963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409277	Organic Carbon	96.0	96.8	P/P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P430226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409757	Organic Carbon	98.0	96.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409231	Color (true)	1.22	Sample	P	0 - 20

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409308	Color (true)	1.99	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409133	Turbidity	13.5	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409317	Turbidity	51.8	Sample	F	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Chloride	0.0348	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Sulfate	0.498	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409263	Ammonia-N	2.43	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409311	Ammonia-N	0.549	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409277	Kjeldahl Nitrogen	3.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409287	NO2NO3-N	0.372	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409264	Total-P	0.878	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P430154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Total Alkalinity	1.10	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P430415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409207	TDS	3.25	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409277	Organic Carbon	0.610	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P430226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409757	Organic Carbon	1.26	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A119145

Included Lab Sample IDs: 2409306, 2409307, 2409308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 110
Color (true)	103	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119146

Included Lab Sample IDs: 2409306, 2409307, 2409308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	98.0	P/P	95 - 105
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119193

Included Lab Sample IDs: 2409309, 2409310, 2409311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110
Total-P	99.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119211

Included Lab Sample IDs: 2409306, 2409307, 2409308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119213

Included Lab Sample IDs: 2409309, 2409311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	97.4	P/P	90 - 110
Organic Carbon	97.4	96.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119214

Included Lab Sample IDs: 2409309, 2409310, 2409311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.2	P/P	90 - 110
Ammonia-N	99.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119275

Included Lab Sample IDs: 2409309, 2409310, 2409311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.0	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A119302

Included Lab Sample IDs: 2409306, 2409307, 2409308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.1	98.3	P/P	90 - 110
Total Alkalinity	98.3	95.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119302

Included Lab Sample IDs: 2409306, 2409307, 2409308

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

Reference Method: SM 5310 B-2011

Run ID: A119341

Included Lab Sample IDs: 2409310

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.2	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119360

Included Lab Sample IDs: 2409309, 2409310, 2409311

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	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)	101			1.22	
	Color (true)	101			1.99	
EPA 180.1 Rev. 2.0	Turbidity	97.5			13.5	
	Turbidity	97.9			51.8	
EPA 300.0 Rev. 2.1	Chloride	104	99.5	107	0.0348	
	Sulfate	103	93.6	104	0.498	
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	96.4	99.2		2.43
	Ammonia-N	95.0	96.6	97.2		0.549
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	92.2	97.8		3.38
EPA 353.2 Rev. 2.0	NO2NO3-N	102	96.8	96.3		0.372
EPA 365.1 Rev. 2.0	Total-P	102	103	102		0.878
SM 2320 B-2011	Total Alkalinity	98.8			1.10	
SM 2540 C-2015	TDS	99.4			3.25	
SM 2540 D-2015	TSS	96.4				
SM 4500-F- C-2011	Fluoride	103	104	103		0.480
SM 5310 B-2011	Organic Carbon	98.4	96.0	96.8		0.610
	Organic Carbon	97.0	98.0	96.5		1.26

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2409306, 2409307, 2409308
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2409306, 2409307, 2409308
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2409306, 2409307, 2409308
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2409306, 2409307, 2409308
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2409309, 2409310, 2409311
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2409309, 2409310, 2409311
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2409309, 2409310, 2409311
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2409309, 2409310, 2409311
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2409306, 2409307, 2409308
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2409306, 2409307, 2409308
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2409306, 2409307, 2409308
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2409306, 2409307, 2409308
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2409309, 2409310, 2409311

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	05/12/2023			05/12/2023 14:21	Anna M. Plaviak	2409306
	05/12/2023			05/12/2023 14:22	Anna M. Plaviak	2409307
	05/12/2023			05/12/2023 14:25	Anna M. Plaviak	2409308
EPA 180.1 Rev. 2.0	05/12/2023			05/12/2023 12:52	Chandler E Cox	2409306
	05/12/2023			05/12/2023 12:53	Chandler E Cox	2409307
	05/12/2023			05/12/2023 12:57	Chandler E Cox	2409308
EPA 300.0 Rev. 2.1	05/12/2023			05/18/2023 05:32	James L Waggeberby	2409306
	05/12/2023			05/18/2023 05:47	James L Waggeberby	2409307
	05/12/2023			05/18/2023 06:32	James L Waggeberby	2409308
EPA 350.1 Rev. 2.0	05/12/2023			05/17/2023 11:15	Ping Hua	2409309
	05/12/2023			05/17/2023 11:27	Ping Hua	2409311
	05/12/2023			05/17/2023 11:33	Ping Hua	2409310
EPA 351.2 Rev. 2.0	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 12:14	Samantha L Bates	2409309
	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 12:15	Samantha L Bates	2409310
	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 12:16	Samantha L Bates	2409311
EPA 353.2 Rev. 2.0	05/12/2023			05/19/2023 10:48	Anna M. Plaviak	2409309
	05/12/2023			05/19/2023 10:49	Anna M. Plaviak	2409310
	05/12/2023			05/19/2023 10:51	Anna M. Plaviak	2409311
EPA 365.1 Rev. 2.0	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 13:38	James L Waggeberby	2409310
	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 13:52	James L Waggeberby	2409309
	05/12/2023	05/15/2023 14:57	Adam P Silver	05/16/2023 13:53	James L Waggeberby	2409311
SM 2320 B-2011	05/12/2023			05/19/2023 22:29	Dale L. Simmons	2409306
	05/12/2023			05/20/2023 01:22	Dale L. Simmons	2409307
	05/12/2023			05/20/2023 01:36	Dale L. Simmons	2409308
SM 2540 C-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409306, 2409307, 2409308
SM 2540 D-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409306, 2409307, 2409308
SM 4500-F- C-2011	05/12/2023			05/19/2023 22:19	Dale L. Simmons	2409306
	05/12/2023			05/20/2023 01:22	Dale L. Simmons	2409307
	05/12/2023			05/20/2023 01:36	Dale L. Simmons	2409308
SM 5310 B-2011	05/12/2023			05/16/2023 18:30	Elise M. Gillis	2409311
	05/12/2023			05/16/2023 23:28	Elise M. Gillis	2409309
	05/12/2023			05/22/2023 16:18	Elise M. Gillis	2409310