

Chemical Analysis Report

CEN-DIST-2022-11-22-01

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

Event Description: **Lakes: Florida, Ellen, Asher, Alma**
Request ID: **RQ-2022-11-21-38**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Matthew Bearden

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 15-DEC-2022 14:53



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 Lucerne SW

Collection Date/Time: 11/21/2022 11:02

Field ID: G4CE0202

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371156	DEP SOP: NU-094-1	Color (true)	7.7		PCU	P422731	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P422740	
	EPA 300.0 Rev. 2.1	Chloride	7.0	A	mg Cl/L	P423087	
		Sulfate	13	A	mg SO4/L	P423089	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P422961	
	SM 2540 C-2015	TDS	178		mg/L	P423110	
	SM 2540 D-2015	TSS	4	I	mg/L	P422927	
	SM 4500-F- C-2011	Fluoride	0.068	I	mg F/L	P422964	
2371159	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P423240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P423342	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P422800	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P422850	
	SM 5310 B-2011	Organic Carbon	2.9		mg C/L	P422887	
2371162	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P422733	

Ref. Method and Comment:

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.

Sample Location: Lake Giles @ Center

Collection Date/Time: 11/21/2022 12:11

Field ID: G4CE0193

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371157	DEP SOP: NU-094-1	Color (true)	8.2		PCU	P422731	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P422740	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P423087	
		Sulfate	17		mg SO4/L	P423089	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P422961	
	SM 2540 C-2015	TDS	84		mg/L	P423110	
	SM 2540 D-2015	TSS	3	I	mg/L	P422927	
2371160	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P422964	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P423240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P423023	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P422800	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P422850	
	SM 5310 B-2011	Organic Carbon	3.3		mg C/L	P422887	
2371163	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P422733	

Ref. Method and Comment:

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.

Sample Location: Lake Emerald @ Center

Collection Date/Time: 11/21/2022 13:12

Field ID: G4CE0204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371158	DEP SOP: NU-094-1	Color (true)	32		PCU	P422731	
	EPA 180.1 Rev. 2.0	Turbidity	2.4	A	NTU	P422740	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P423087	
		Sulfate	10		mg SO4/L	P423089	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P422961	
	SM 2540 C-2015	TDS	130		mg/L	P423110	
	SM 2540 D-2015	TSS	5	I	mg/L	P422927	
	SM 4500-F- C-2011	Fluoride	0.053	I	mg F/L	P422964	
2371161	EPA 350.1 Rev. 2.0	Ammonia-N	0.096		mg N/L	P423240	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P423280	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P422800	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P422980	
	SM 5310 B-2011	Organic Carbon	8.2		mg C/L	P422887	
2371164	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P422733	

Ref. Method and Comment:

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.

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P422731

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422740

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423087

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423089

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423240

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423280

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422800

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422980

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422733

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P422961

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2015
Batch ID: P423110

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P422927

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P422887

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: P422731

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: P422740

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423087

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423089

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423240

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: P423023

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423280

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423342

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422800

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422980

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422733

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

Reference Method: SM 2320 B-2011
Batch ID: P422961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.4		P	94 - 106

Reference Method: SM 2540 C-2015
Batch ID: P423110

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

Reference Method: SM 2540 D-2015
Batch ID: P422927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

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

Reference Method: SM 5310 B-2011
Batch ID: P422887

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371156	Chloride	101		P	90 - 110
2371157	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371156	Sulfate	97.2		P	90 - 110
2371157	Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371160	Ammonia-N	98.0	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371399	Kjeldahl Nitrogen	109	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372746	Kjeldahl Nitrogen	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2373000	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422800

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371160	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370877	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371297	Total-P	106	108	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371163	O-Phosphate-P	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Batch ID: P422887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2370974	Organic Carbon	96.2	96.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P422731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371141	Color (true)	0.0670	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371158	Turbidity	0.411	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371156	Chloride	0.296	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371156	Sulfate	0.332	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371160	Ammonia-N	0.227	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371399	Kjeldahl Nitrogen	6.79	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372746	Kjeldahl Nitrogen	0.737	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2373000	Kjeldahl Nitrogen	0.518	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422800

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371160	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370877	Total-P	1.04	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P422980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371297	Total-P	2.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P422733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371163	O-Phosphate-P	1.38	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P422961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371108	Total Alkalinity	1.13	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P423110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370855	TDS	3.09	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P422964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371108	Fluoride	0.986	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P422887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2370974	Organic Carbon	0.218	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: A116103

Included Lab Sample IDs: 2371156, 2371157, 2371158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A116107

Included Lab Sample IDs: 2371162, 2371163, 2371164

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116109

Included Lab Sample IDs: 2371156, 2371157, 2371158

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116148

Included Lab Sample IDs: 2371159, 2371160, 2371161

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

Reference Method: SM 5310 B-2011

Run ID: A116179

Included Lab Sample IDs: 2371159, 2371160, 2371161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.4	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116192

Included Lab Sample IDs: 2371159, 2371160

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

Reference Method: SM 2320 B-2011

Run ID: A116202

Included Lab Sample IDs: 2371156, 2371157, 2371158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	97.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116202

Included Lab Sample IDs: 2371156, 2371157, 2371158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116227

Included Lab Sample IDs: 2371161

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116259

Included Lab Sample IDs: 2371156, 2371157, 2371158

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	105	P/P	90 - 110
Chloride	105	105	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116263

Included Lab Sample IDs: 2371160

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.3	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116310

Included Lab Sample IDs: 2371159, 2371160, 2371161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116356

Included Lab Sample IDs: 2371161

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.4	94.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116403

Included Lab Sample IDs: 2371159

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	100	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			0.0670	
EPA 180.1 Rev. 2.0	Turbidity	101			0.411	
EPA 300.0 Rev. 2.1	Chloride	104	101	101	0.296	
	Sulfate	103	97.2	96.2	0.332	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	98.0	98.4		0.227
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	109	99.8		6.79
	Kjeldahl Nitrogen	104	100	101		0.737
	Kjeldahl Nitrogen	97.6	103	104		0.518
EPA 353.2 Rev. 2.0	NO2NO3-N	103	103	103		0.0
EPA 365.1 Rev. 2.0	Total-P	102	104	103		1.04
	Total-P	103	106	108		2.10
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	102	101		1.38
SM 2320 B-2011	Total Alkalinity	96.4			1.13	
SM 2540 C-2015	TDS	103			3.09	
SM 2540 D-2015	TSS	98.1				
SM 4500-F- C-2011	Fluoride	101				0.986
SM 5310 B-2011	Organic Carbon	97.1	96.2	96.4		0.218

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2371156, 2371157, 2371158
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2371156, 2371157, 2371158
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2371156, 2371157, 2371158
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2371156, 2371157, 2371158
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2371159, 2371160, 2371161
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2371159, 2371160, 2371161
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2371159, 2371160, 2371161
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2371159, 2371160, 2371161
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2371162, 2371163, 2371164
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2371156, 2371157, 2371158
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2371156, 2371157, 2371158
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2371156, 2371157, 2371158
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2371156, 2371157, 2371158
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2371159, 2371160, 2371161

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	11/22/2022			11/22/2022 13:39	Chandler E Cox	2371156
	11/22/2022			11/22/2022 13:40	Chandler E Cox	2371157, 2371158
	11/22/2022			11/22/2022 13:47	Anna M. Plaviak	2371158
EPA 180.1 Rev. 2.0	11/22/2022			11/22/2022 13:49	Anna M. Plaviak	2371157
	11/22/2022			11/22/2022 13:51	Anna M. Plaviak	2371156
	11/22/2022			12/03/2022 01:28	Anna M. Plaviak	2371156
EPA 300.0 Rev. 2.1	11/22/2022			12/03/2022 01:58	Anna M. Plaviak	2371157
	11/22/2022			12/03/2022 06:45	Anna M. Plaviak	2371158
	11/22/2022			12/07/2022 14:21	Ping Hua	2371160
EPA 350.1 Rev. 2.0	11/22/2022			12/07/2022 14:25	Ping Hua	2371159
	11/22/2022			12/07/2022 14:26	Ping Hua	2371161
	11/22/2022			12/05/2022 13:31	Judith K. Clark	2371160
EPA 351.2 Rev. 2.0	11/22/2022	12/02/2022 13:20	Simonne.V. Calhoun	12/09/2022 12:51	Judith K. Clark	2371161
	11/22/2022	12/08/2022 11:30	Simonne.V. Calhoun	12/13/2022 10:56	Judith K. Clark	2371159
	11/22/2022	12/12/2022 08:10	Judith K. Clark	11/28/2022 11:12	Beverly Y. Sanders	2371159
EPA 353.2 Rev. 2.0	11/22/2022			11/28/2022 11:13	Beverly Y. Sanders	2371160
	11/22/2022			11/28/2022 11:14	Beverly Y. Sanders	2371161
	11/22/2022			11/30/2022 11:48	James L Waggeberby	2371159
EPA 365.1 Rev. 2.0	11/22/2022	11/29/2022 14:43	Adam P Silver	11/30/2022 11:49	James L Waggeberby	2371160
	11/22/2022	11/29/2022 14:43	Adam P Silver	12/02/2022 09:54	James L Waggeberby	2371161
	11/22/2022	12/01/2022 13:57	Adam P Silver	11/22/2022 14:06	Elise M. Gillis	2371163
EPA 365.1 Rev. 2.0 dissolved	11/22/2022			11/22/2022 14:08	Elise M. Gillis	2371162
	11/22/2022			11/22/2022 14:09	Elise M. Gillis	2371164
	11/22/2022			11/30/2022 22:35	Dale L. Simmons	2371156
SM 2320 B-2011	11/22/2022			11/30/2022 22:48	Dale L. Simmons	2371157
	11/22/2022			11/30/2022 22:59	Dale L. Simmons	2371158
	11/22/2022			11/22/2022 16:06	Yijie Li	2371156, 2371157, 2371158
SM 2540 C-2015	11/22/2022			11/22/2022 16:06	Yijie Li	2371156, 2371157, 2371158
SM 2540 D-2015	11/22/2022			11/30/2022 22:35	Dale L. Simmons	2371156
	11/22/2022			11/30/2022 22:48	Dale L. Simmons	2371157
	11/22/2022			11/30/2022 22:59	Dale L. Simmons	2371158
SM 4500-F- C-2011	11/22/2022			11/30/2022 04:25	Khloe J Berg	2371159
	11/22/2022			11/30/2022 04:40	Khloe J Berg	2371160
	11/22/2022			11/30/2022 04:58	Khloe J Berg	2371161