

Chemical Analysis Report

NE-DIST-2021-06-10-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **unnamed run boat**
Request ID: **RQ-2021-05-24-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 02-JUL-2021 15:03



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: Unnamed Drain @ Eagles Nest Rd

Collection Date/Time: 06/09/2021 12:40

Field ID: 27010079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2254327	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P399530	
	EPA 300.0 Rev. 2.1	Chloride	160		mg Cl/L	P399825	
		Sulfate	18		mg SO4/L	P399827	
		Color (true)	90		PCU	P399533	
	SM 2320 B-2011	Total Alkalinity	150	J	mg CaCO3/L	P400074	LCS
	SM 2540 C-2011	TDS	498	A	mg/L	P400001	
	SM 2540 D-2011	TSS	3	IA	mg/L	P399855	
	SM 4500 F-C-2011	Fluoride	0.092	I	mg F/L	P399739	
2254328	EPA 350.1 Rev. 2.0	Ammonia-N	0.034		mg N/L	P399990	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P400009	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.027		mg N/L	P399691	
	EPA 365.1 Rev. 2.0	Total-P	0.092		mg P/L	P400123	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P400167	
2254329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.053		mg P/L	P399512	

Ref. Method and Comment:

SM 2320 B-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Unnamed Drain South Entrance

Collection Date/Time: 06/09/2021 11:30

Field ID: G5NE0591

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2254324	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P399530	
	SM 2320 B-2011	Total Alkalinity	124		mg CaCO3/L	P399898	
	SM 2540 D-2011	TSS	33	A	mg/L	P399859	
	SM 4500 F-C-2011	Fluoride	1.3		mg F/L	P399740	
2254325	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P400058	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P400011	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P399578	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P400127	
	SM 5310 B-2011	Organic Carbon	3.6		mg C/L	P400252	
2254326	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P399511	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399530

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399825

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399827

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399990

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400058

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400011

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399578

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399691

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: P400123

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400127

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399511

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399512

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

Reference Method: SM 2120 B-2011
Batch ID: P399533

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P399898

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

Reference Method: SM 2320 B-2011
Batch ID: P400074

Component	Result	Code	Units
Total Alkalinity	0.73	I	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P400001

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P399855

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P399859

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399739

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399740

Component	Result	Code	Units
Fluoride	0.035	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P400167

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

Reference Method: SM 5310 B-2011
Batch ID: P400252

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399825

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399827

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399990

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400009

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400011

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399578

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: P399691

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400123

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400127

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: P399511

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399512

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

Reference Method: SM 2120 B-2011
Batch ID: P399533

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P399898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P400074

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

Reference Method: SM 4500 F-C-2011
Batch ID: P399739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P399740

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P400167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.3		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P400252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254247	Chloride	100		P	90 - 110
2254404	Chloride	92.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254247	Sulfate	100		P	90 - 110
2254404	Sulfate	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254344	Ammonia-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252819	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253849	Kjeldahl Nitrogen	96.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254325	Kjeldahl Nitrogen	108	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399578

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254569	NO2NO3-N	95.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254156	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P400123

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254157	Total-P	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400127

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256551	Total-P	96.3	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399511

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254306	O-Phosphate-P	97.8	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254249	O-Phosphate-P	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Batch ID: P399739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254134	Fluoride	102	102	P/P	92 - 107

Reference Method: SM 4500 F-C-2011

Batch ID: P399740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254565	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P400167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2254351	Organic Carbon	96.2	104	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P400252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253760	Organic Carbon	97.3	97.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254272	Turbidity	5.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254247	Chloride	1.15	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254247	Sulfate	1.08	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254344	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P400058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252819	Ammonia-N	0.894	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253849	Kjeldahl Nitrogen	3.09	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254325	Kjeldahl Nitrogen	9.26	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254569	NO2NO3-N	4.60	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P399691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254156	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254157	Total-P	1.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P400127

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256551	Total-P	1.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254306	O-Phosphate-P	1.15	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P399512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254249	O-Phosphate-P	0.797	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P399533

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254404	Color (true)	0.400	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P399898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253306	Total Alkalinity	0.670	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P400001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254327	TDS	7.44	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P399859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254324	TSS	5.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P399739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254134	Fluoride	0.479	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P399740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254565	Fluoride	0.457	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P400167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254351	Organic Carbon	3.88	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P400252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253760	Organic Carbon	0.0	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A105989

Included Lab Sample IDs: 2254326, 2254329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.8	P/P	90 - 110
O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105999

Included Lab Sample IDs: 2254324, 2254327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A106000

Included Lab Sample IDs: 2254327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106025

Included Lab Sample IDs: 2254325

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106065

Included Lab Sample IDs: 2254328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106087

Included Lab Sample IDs: 2254324, 2254327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	105	P/P	90 - 110
Fluoride	107	108	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106105

Included Lab Sample IDs: 2254327

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A106152

Included Lab Sample IDs: 2254324

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106195

Included Lab Sample IDs: 2254328

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106218

Included Lab Sample IDs: 2254325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106227

Included Lab Sample IDs: 2254327

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106255

Included Lab Sample IDs: 2254328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106257

Included Lab Sample IDs: 2254325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	97.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106258

Included Lab Sample IDs: 2254328

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106277

Included Lab Sample IDs: 2254325, 2254328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.1	98.4	P/P	90 - 110
Kjeldahl Nitrogen	97.6	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A106304

Included Lab Sample IDs: 2254325

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.4	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
EPA 180.1 Rev. 2.0	Turbidity				5.11	
EPA 300.0 Rev. 2.1	Chloride	100	100	92.7	1.15	
	Sulfate	99.4	100	95.4	1.08	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.0	98.0		0.0
	Ammonia-N	96.2	105	104		0.894
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	96.2	101		3.09
	Kjeldahl Nitrogen	100	108	96.8		9.26
EPA 353.2 Rev. 2.0	NO2NO3-N	102	95.5	100		4.60
	NO2NO3-N	100	99.0	99.5		0.504
EPA 365.1 Rev. 2.0	Total-P	102	106	104		1.13
	Total-P	103	96.3	97.6		1.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	96.6		1.15
	O-Phosphate-P	104	100	101		0.797
SM 2120 B-2011	Color (true)	101			0.400	
SM 2320 B-2011	Total Alkalinity	99.5			0.670	
	Total Alkalinity	106				
SM 2540 C-2011	TDS				7.44	
SM 2540 D-2011	TSS				5.99	
SM 4500 F-C-2011	Fluoride	102	102	102		0.479
	Fluoride	103	101	101		0.457
SM 5310 B-2011	Organic Carbon	97.3	96.2	104		3.88
	Organic Carbon	97.5	97.3	97.3		0.0

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2254324, 2254327
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2254327
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2254327
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2254325, 2254328
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2254325, 2254328
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2254325, 2254328
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2254325, 2254328
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2254326, 2254329
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2254327
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2254324, 2254327
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2254327
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2254324, 2254327
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2254324, 2254327
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2254325, 2254328

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/10/2021			06/10/2021 14:54	Sarah A Nixon	2254324, 2254327
EPA 300.0 Rev. 2.1	06/10/2021			06/17/2021 00:09	Lipi Saha	2254327
EPA 350.1 Rev. 2.0	06/10/2021			06/21/2021 12:15	Ping Hua	2254328
	06/10/2021			06/22/2021 15:02	Roberta Tatti	2254325
EPA 351.2 Rev. 2.0	06/10/2021	06/21/2021 14:57	Benjamin T. Nordmann	06/24/2021 15:48	Letuzia M De Oliveira	2254328
	06/10/2021	06/21/2021 15:02	Benjamin T. Nordmann	06/24/2021 13:38	Letuzia M De Oliveira	2254325
EPA 353.2 Rev. 2.0	06/10/2021			06/11/2021 13:33	Touraj Touran	2254325
	06/10/2021			06/15/2021 09:51	Beverly Y. Sanders	2254328
EPA 365.1 Rev. 2.0	06/10/2021	06/23/2021 13:50	Shengyu Ding	06/24/2021 12:21	Shengyu Ding	2254328
	06/10/2021	06/23/2021 13:50	Shengyu Ding	06/24/2021 14:08	Shengyu Ding	2254325
EPA 365.1 Rev. 2.0 dissolved	06/10/2021			06/10/2021 13:35	Ping Hua	2254326
	06/10/2021			06/10/2021 13:48	Ping Hua	2254329
SM 2120 B-2011	06/10/2021			06/10/2021 16:28	Madeline Gruver	2254327
SM 2320 B-2011	06/10/2021			06/18/2021 00:57	Dale L. Simmons	2254324
	06/10/2021			06/22/2021 19:47	Patrick M. Roche	2254327
SM 2540 C-2011	06/10/2021			06/15/2021 14:12	Yijie Li	2254327
SM 2540 D-2011	06/10/2021			06/15/2021 14:12	Yijie Li	2254324, 2254327
SM 4500 F-C-2011	06/10/2021			06/15/2021 18:55	Dale L. Simmons	2254327
	06/10/2021			06/15/2021 21:32	Dale L. Simmons	2254324
SM 5310 B-2011	06/10/2021			06/22/2021 23:32	Madeline Gruver	2254328
	06/10/2021			06/24/2021 15:52	Madeline Gruver	2254325