

Chemical Analysis Report

SE-DIST-2019-10-03-01

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

Event Description: **SMP-Nice Lakes**
Request ID: **RQ-2019-09-30-77**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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2199 South Rock Road
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-OCT-2019 16:48

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Henderson Pond @ Center

Collection Date/Time: 10/02/2019 14:40

Field ID: FB_10012019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124607	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P371848	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P372381	
		Sulfate	0.20	U	mg SO4/L	P372385	
	SM 2120 B	Color (true)	2.5	U	PCU	P371853	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P372157	
	SM 2540 C-97	TDS	15	U	mg/L	P372429	
	SM 2540 D-97	TSS	2	U	mg/L	P372226	RPD
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P372160	
2124608	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P372140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P371928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P371949	
2124609	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371905	

Ref. Method and Comment:

EPA 353.2 Rev. 2.0: The result was confirmed on 10/10/2019.

Sample Location: Henderson Pond @ Center

Collection Date/Time: 10/02/2019 14:45

Field ID: G2SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124601	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P371848	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P372381	
		Sulfate	2.1		mg SO4/L	P372385	
	SM 2120 B	Color (true)	120		PCU	P371853	
	SM 2320 B-97	Total Alkalinity	9.3		mg CaCO3/L	P372157	
	SM 2540 C-97	TDS	121		mg/L	P372428	
	SM 2540 D-97	TSS	2	U	mg/L	P372225	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P372160	
2124602	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P372140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P371928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P371919	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P371949	
2124603	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371905	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 10/08/2019.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Henderson Pond @ Center

Collection Date/Time: 10/02/2019 14:50

Field ID: G2SE0050_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124610	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P371848	
	EPA 300.0 Rev. 2.1	Chloride	38	A	mg Cl/L	P372382	
		Sulfate	2.1	A	mg SO4/L	P372386	
	SM 2120 B	Color (true)	120		PCU	P371853	
	SM 2320 B-97	Total Alkalinity	9.4	A	mg CaCO3/L	P372158	
	SM 2540 C-97	TDS	117		mg/L	P372428	
	SM 2540 D-97	TSS	3	I	mg/L	P372225	
	SM 4500 F-C-97	Fluoride	0.045	I	mg F/L	P372161	
2124611	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P372140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P371928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P372037	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P371949	
2124612	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371905	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 10/08/2019.

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Eden

Collection Date/Time: 10/02/2019 15:20

Field ID: G2SE0014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2124604	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P371848	
	EPA 300.0 Rev. 2.1	Chloride	41		mg Cl/L	P372381	
		Sulfate	4.0		mg SO4/L	P372385	
	SM 2120 B	Color (true)	170		PCU	P371853	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P372157	
	SM 2540 C-97	TDS	142		mg/L	P372428	
	SM 2540 D-97	TSS	2	U	mg/L	P372225	
	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P372160	
2124605	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P372140	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P371928	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P372036	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P371920	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P371949	
2124606	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P371905	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371848

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372381

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372385

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371928

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372036

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

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: P371919

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371905

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

Reference Method: SM 2120 B
Batch ID: P371853

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P372157

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

Reference Method: SM 2320 B-97
Batch ID: P372158

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

Reference Method: SM 2540 C-97
Batch ID: P372428

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P372429

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P372225

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P372226

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P372160

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371949

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: P372381

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372385

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372140

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371928

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: P372036

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.3		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371905

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

Reference Method: SM 2120 B
Batch ID: P371853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.7		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P372157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 2320 B-97
Batch ID: P372158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372160

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371949

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372381

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124556	Chloride	99.1		P	90 - 110
2124564	Chloride	97.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Chloride	98.5		P	90 - 110
2124728	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124556	Sulfate	99.7		P	90 - 110
2124564	Sulfate	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124590	Ammonia-N	99.1	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124559	Kjeldahl Nitrogen	107	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124544	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124641	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371919

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124544	Total-P	96.6	95.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124643	Total-P	99.4	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371905

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124539	O-Phosphate-P	95.7	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P372160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2125112	Fluoride	96.1	96.1	P/P	89 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124610	Fluoride	96.0	95.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371949

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2124734	Organic Carbon	97.4	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124637	Turbidity	3.45	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124556	Chloride	0.0144	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Chloride	0.416	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124556	Sulfate	0.0936	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P372386

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Sulfate	0.372	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P372140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124590	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124559	Kjeldahl Nitrogen	0.0139	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124544	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P372037

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124641	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124544	Total-P	0.759	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124643	Total-P	1.21	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124539	O-Phosphate-P	1.66	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P371853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124564	Color (true)	1.46	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P372157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125112	Total Alkalinity	0.121	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
Batch ID: P372158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Total Alkalinity	0.222	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P372428

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124524	TDS	0.617	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P372429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124649	TDS	1.76	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P372226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124649	TSS	13.7	Sample	F	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P372160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2125112	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-97
Batch ID: P372161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124610	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P371949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2124734	Organic Carbon	0.0307	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: A94709

Included Lab Sample IDs: 2124601, 2124604, 2124607, 2124610

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

Reference Method: SM 2120 B

Run ID: A94710

Included Lab Sample IDs: 2124601, 2124604, 2124607, 2124610

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94721

Included Lab Sample IDs: 2124603, 2124606, 2124609, 2124612

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.0	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94727

Included Lab Sample IDs: 2124602, 2124605, 2124608, 2124611

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

Reference Method: SM 5310 B-00

Run ID: A94743

Included Lab Sample IDs: 2124602, 2124605, 2124608, 2124611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	101	P/P	90 - 110
Organic Carbon	101	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94759

Included Lab Sample IDs: 2124602, 2124605, 2124608, 2124611

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94808

Included Lab Sample IDs: 2124602, 2124605, 2124608, 2124611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.7	P/P	90 - 110
Ammonia-N	99.7	99.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-97

Run ID: A94818

Included Lab Sample IDs: 2124601, 2124604, 2124607, 2124610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94818

Included Lab Sample IDs: 2124601, 2124604, 2124607, 2124610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	98.1	P/P	90 - 110
Fluoride	98.6	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94853

Included Lab Sample IDs: 2124602, 2124605, 2124608, 2124611

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	98.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94920

Included Lab Sample IDs: 2124601, 2124604, 2124607, 2124610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	101	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	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
EPA 180.1 Rev. 2.0	Turbidity				3.45	
EPA 300.0 Rev. 2.1	Chloride	99.9	99.1	97.8	0.0144	
	Chloride	100	98.5	99.3	0.416	
	Sulfate	100	99.7	100	0.0936	
	Sulfate	100	99.9		0.372	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	99.1	101		1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	107	107		0.0139
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102		0.0
	NO2NO3-N	101	100	100		0.499
EPA 365.1 Rev. 2.0	Total-P	94.3	96.6	95.8		0.759
	Total-P	101	99.4	98.2		1.21
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103	95.7	97.3		1.66
SM 2120 B	Color (true)	99.7			1.46	
SM 2320 B-97	Total Alkalinity	104			0.121	
	Total Alkalinity	104			0.222	
SM 2540 C-97	TDS				0.617	
	TDS				1.76	
SM 2540 D-97	TSS				13.7	
SM 4500 F-C-97	Fluoride	95.9	96.1	96.1		0.0
	Fluoride	96.4	96.0	95.5		0.473
SM 5310 B-00	Organic Carbon	96.4	97.4	97.4		0.0307

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2124601, 2124604, 2124607, 2124610
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2124601, 2124604, 2124607, 2124610
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2124601, 2124604, 2124607, 2124610
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2124602, 2124605, 2124608, 2124611
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2124602, 2124605, 2124608, 2124611
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2124602, 2124605, 2124608, 2124611
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2124602, 2124605, 2124608, 2124611
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2124603, 2124606, 2124609, 2124612
SM 2120 B / E31780	True Color measured at 450 nm	2124601, 2124604, 2124607, 2124610
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2124601, 2124604, 2124607, 2124610
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2124601, 2124604, 2124607, 2124610
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2124601, 2124604, 2124607, 2124610
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2124601, 2124604, 2124607, 2124610
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2124602, 2124605, 2124608, 2124611

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	10/03/2019			10/03/2019 16:10	Rosalyn Ballman	2124601, 2124604, 2124607, 2124610
EPA 300.0 Rev. 2.1	10/03/2019			10/12/2019 04:25	Julia Storbeck	2124601
	10/03/2019			10/12/2019 04:37	Julia Storbeck	2124604
	10/03/2019			10/12/2019 04:49	Julia Storbeck	2124607
	10/03/2019			10/12/2019 06:14	Julia Storbeck	2124610
EPA 350.1 Rev. 2.0	10/03/2019			10/08/2019 13:48	Ping Hua	2124602
	10/03/2019			10/08/2019 13:49	Ping Hua	2124605
	10/03/2019			10/08/2019 13:51	Ping Hua	2124611
	10/03/2019			10/08/2019 14:03	Ping Hua	2124608
EPA 351.2 Rev. 2.0	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/09/2019 15:50	Virginia P. Brown	2124602
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/09/2019 15:51	Virginia P. Brown	2124605
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/09/2019 15:53	Virginia P. Brown	2124608
	10/03/2019	10/04/2019 14:15	Jhamieka S. Greenwood	10/09/2019 15:54	Virginia P. Brown	2124611
EPA 353.2 Rev. 2.0	10/03/2019			10/04/2019 11:31	Beverly Y. Sanders	2124605
	10/03/2019			10/04/2019 11:44	Beverly Y. Sanders	2124602
	10/03/2019			10/04/2019 11:45	Beverly Y. Sanders	2124611
	10/03/2019			10/04/2019 11:46	Beverly Y. Sanders	2124608
EPA 365.1 Rev. 2.0	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 13:36	Lipi Saha	2124602
	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 13:39	Lipi Saha	2124605, 2124608
	10/03/2019	10/04/2019 14:00	Vijayalakshmi Reddy	10/07/2019 13:40	Lipi Saha	2124611
EPA 365.1 Rev. 2.0 dissolved	10/03/2019			10/03/2019 16:04	Samantha Davila	2124603
	10/03/2019			10/03/2019 16:05	Samantha Davila	2124606
	10/03/2019			10/03/2019 16:06	Samantha Davila	2124609
	10/03/2019			10/03/2019 16:07	Samantha Davila	2124612
SM 2120 B	10/03/2019			10/03/2019 17:00	Madeline Funaro	2124601
	10/03/2019			10/03/2019 17:01	Madeline Funaro	2124607
	10/03/2019			10/03/2019 17:02	Madeline Funaro	2124610
	10/03/2019			10/03/2019 17:27	Madeline Funaro	2124604
SM 2320 B-97	10/03/2019			10/09/2019 03:37	Dale L. Simmons	2124601
	10/03/2019			10/09/2019 03:49	Dale L. Simmons	2124604
	10/03/2019			10/09/2019 04:02	Dale L. Simmons	2124607
	10/03/2019			10/09/2019 05:33	Dale L. Simmons	2124610
SM 2540 C-97	10/03/2019			10/04/2019 20:17	Rosalyn Ballman	2124601, 2124604, 2124607, 2124610
SM 2540 D-97	10/03/2019			10/04/2019 20:17	Rosalyn Ballman	2124601, 2124604, 2124607, 2124610
SM 4500 F-C-97	10/03/2019			10/09/2019 03:37	Dale L. Simmons	2124601
	10/03/2019			10/09/2019 03:49	Dale L. Simmons	2124604
	10/03/2019			10/09/2019 04:02	Dale L. Simmons	2124607
	10/03/2019			10/09/2019 05:24	Dale L. Simmons	2124610
SM 5310 B-00	10/03/2019			10/05/2019 06:24	Madeline Funaro	2124602
	10/03/2019			10/05/2019 07:07	Madeline Funaro	2124605

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	10/03/2019			10/05/2019 07:19	Madeline Funaro	2124608
	10/03/2019			10/05/2019 07:31	Madeline Funaro	2124611