

Chemical Analysis Report

SW-DIST-2021-07-27-01

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

Event Description: **Run 15**
Request ID: **RQ-2021-04-05-22**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 24-AUG-2021 10:43

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: Lake Innisbrook

Collection Date/Time: 07/26/2021 10:20

Field ID: G5SW0040

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265108	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P401602	
	EPA 300.0 Rev. 2.1	Chloride	82		mg Cl/L	P401814	
		Sulfate	18		mg SO4/L	P401817	
	SM 2120 B-2011	Color (true)	110		PCU	P401606	
	SM 2320 B-2011	Total Alkalinity	93		mg CaCO3/L	P401668	
	SM 2540 C-2011	TDS	311		mg/L	P402088	
	SM 2540 D-2011	TSS	5	I	mg/L	P401831	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P401672	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.081		mg N/L	P402060	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P402633	
2265109	EPA 353.2 Rev. 2.0	NO2NO3-N	0.010		mg N/L	P401628	
	EPA 365.1 Rev. 2.0	Total-P	0.40		mg P/L	P401694	MS
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P402249	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.25		mg P/L	P401599	
2265110	EPA 365.1 Rev. 2.0 dissolved						

Ref. Method and Comment:

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

Sample Location: Boggy Bayou South

Collection Date/Time: 07/26/2021 11:20

Field ID: G5SW0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265111	EPA 180.1 Rev. 2.0	Turbidity	1.7	A	NTU	P401604	
	EPA 300.0 Rev. 2.1	Bromide	60		mg Br/L	P401786	
	SM 2320 B-2011	Total Alkalinity	128	A	mg CaCO3/L	P401670	
	SM 2540 D-2011	TSS	3	U	mg/L	P401836	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P401674	
2265114	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P402059	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P402476	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.081		mg N/L	P401749	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P401759	
	SM 5310 B-2011	Organic Carbon	5.3		mg C/L	P401869	
2265117	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401600	

Sample Location: Boggy Bayou North

Collection Date/Time: 07/26/2021 12:00

Field ID: G5SW0080

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265112	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P401604	
	EPA 300.0 Rev. 2.1	Bromide	54		mg Br/L	P401786	
	SM 2320 B-2011	Total Alkalinity	136		mg CaCO3/L	P401670	
	SM 2540 D-2011	TSS	3	U	mg/L	P401836	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P401674	
2265115	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P402059	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P402476	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P401749	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P401759	
	SM 5310 B-2011	Organic Carbon	6.2		mg C/L	P401869	
2265118	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401600	

Sample Location: Salt Springs #1

Collection Date/Time: 07/26/2021 13:15

Field ID: G5SW0158

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265113	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P401604	
	EPA 300.0 Rev. 2.1	Bromide	31		mg Br/L	P401786	
	SM 2320 B-2011	Total Alkalinity	142		mg CaCO3/L	P401670	
	SM 2540 D-2011	TSS	14	A	mg/L	P401836	
	SM 4500 F-C-2011	Fluoride	0.48	I	mg F/L	P401674	
2265116	EPA 350.1 Rev. 2.0	Ammonia-N	0.062		mg N/L	P402059	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P402476	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P401749	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P401759	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P402251	
2265119	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.064		mg P/L	P401600	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401602

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401604

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401786

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401814

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401817

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402059

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402060

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402476

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402633

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: P401628

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401749

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401694

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401759

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401599

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401600

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

Reference Method: SM 2120 B-2011
Batch ID: P401606

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P401668

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

Reference Method: SM 2320 B-2011
Batch ID: P401670

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P402088

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P401831

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P401836

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401672

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401674

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P401869

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

Reference Method: SM 5310 B-2011
Batch ID: P402249

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

Reference Method: SM 5310 B-2011
Batch ID: P402251

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: P401786

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401814

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: P401817

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402059

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402060

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402476

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402633

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401628

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: P401749

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401694

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401759

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401599

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401600

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

Reference Method: SM 2120 B-2011

Batch ID: P401606

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P401668

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 2320 B-2011

Batch ID: P401670

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

Reference Method: SM 4500 F-C-2011

Batch ID: P401672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 4500 F-C-2011

Batch ID: P401674

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P401869

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

Reference Method: SM 5310 B-2011
Batch ID: P402249

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

Reference Method: SM 5310 B-2011
Batch ID: P402251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265266	Bromide	93.9	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264973	Chloride	101		P	90 - 110
2265165	Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401817

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264973	Sulfate	102		P	90 - 110
2265165	Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402059

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265393	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265948	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264324	Kjeldahl Nitrogen	105	114	P/F	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265183	Kjeldahl Nitrogen	95.0	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401628

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264981	NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401749

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265083	NO2NO3-N	96.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401694

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265091	Total-P	109	111	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401759

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265114	Total-P	98.7	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265193	O-Phosphate-P	94.4	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265118	O-Phosphate-P	92.2	92.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P401672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265061	Fluoride	99.0	99.0	P/P	92 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P401674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265111	Fluoride	96.7	95.3	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P401869

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264739	Organic Carbon	95.9	96.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P402249

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264982	Organic Carbon	101	99.6	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P402251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265394	Organic Carbon	94.2	96.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265061	Turbidity	0.656	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265111	Turbidity	1.20	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265266	Bromide	1.80	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265165	Chloride	1.27	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265165	Sulfate	1.29	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402059

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265393	Ammonia-N	0.886	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265948	Ammonia-N	0.588	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264324	Kjeldahl Nitrogen	6.20	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P402633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265183	Kjeldahl Nitrogen	1.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264981	NO2NO3-N	0.179	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265083	NO2NO3-N	0.187	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401694

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265091	Total-P	0.817	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265114	Total-P	1.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265193	O-Phosphate-P	0.423	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265118	O-Phosphate-P	0.109	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P401606

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265182	Color (true)	0.569	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P401668

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265061	Total Alkalinity	1.21	Sample	P	0 - 5.2

Reference Method: SM 2320 B-2011
Batch ID: P401670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265111	Total Alkalinity	0.749	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P402088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265061	TDS	4.20	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P401836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265113	TSS	8.70	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P401672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265061	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
Batch ID: P401674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265111	Fluoride	0.915	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P401869

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264739	Organic Carbon	0.351	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P402249

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264982	Organic Carbon	0.916	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P402251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265394	Organic Carbon	2.19	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: A106851

Included Lab Sample IDs: 2265110, 2265117, 2265118, 2265119

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	95.6	P/P	90 - 110
O-Phosphate-P	97.8	96.9	P/P	90 - 110
O-Phosphate-P	98.6	97.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106852

Included Lab Sample IDs: 2265108, 2265111, 2265112, 2265113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A106853

Included Lab Sample IDs: 2265108

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106874

Included Lab Sample IDs: 2265109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106891

Included Lab Sample IDs: 2265108, 2265111, 2265112, 2265113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106891

Included Lab Sample IDs: 2265108, 2265111, 2265112, 2265113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	102	P/P	90 - 110
Fluoride	102	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106905

Included Lab Sample IDs: 2265108

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106930

Included Lab Sample IDs: 2265111, 2265112, 2265113

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106936

Included Lab Sample IDs: 2265114, 2265115, 2265116

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106943

Included Lab Sample IDs: 2265109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	104	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106978

Included Lab Sample IDs: 2265114, 2265115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	95.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106995

Included Lab Sample IDs: 2265114, 2265115

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107028

Included Lab Sample IDs: 2265116

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107064

Included Lab Sample IDs: 2265109, 2265114, 2265115, 2265116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.3	P/P	90 - 110
Ammonia-N	99.1	98.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107149

Included Lab Sample IDs: 2265109, 2265116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.0	97.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A107149

Included Lab Sample IDs: 2265109, 2265116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107272

Included Lab Sample IDs: 2265114, 2265115, 2265116

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107354

Included Lab Sample IDs: 2265109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.1	103	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					0.656	
	Turbidity					1.20	
EPA 300.0 Rev. 2.1	Bromide	99.2	93.9	96.8			1.80
	Chloride	99.9	98.7	101		1.27	
	Sulfate	99.8	99.4	102		1.29	
EPA 350.1 Rev. 2.0	Ammonia-N	100	104	105			0.886
	Ammonia-N	100	102	102			0.588
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	105	114			6.20
	Kjeldahl Nitrogen	105	95.0	97.8			1.66
EPA 353.2 Rev. 2.0	NO2NO3-N	102	97.5				0.179
	NO2NO3-N	99.5	96.8				0.187
EPA 365.1 Rev. 2.0	Total-P	108	109	111			0.817
	Total-P	108	98.7	101			1.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.4	94.8			0.423
	O-Phosphate-P	99.9	92.2	92.1			0.109
SM 2120 B-2011	Color (true)	99.6				0.569	
SM 2320 B-2011	Total Alkalinity	102				1.21	
	Total Alkalinity	103				0.749	
SM 2540 C-2011	TDS					4.20	
SM 2540 D-2011	TSS					8.70	
SM 4500 F-C-2011	Fluoride	101	99.0	99.0			0.0
	Fluoride	101	96.7	95.3			0.915
SM 5310 B-2011	Organic Carbon	97.4	95.9	96.3			0.351
	Organic Carbon	96.4	101	99.6			0.916
	Organic Carbon	97.6	94.2	96.6			2.19

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2265108, 2265111, 2265112, 2265113
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2265111, 2265112, 2265113
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2265108
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2265108
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2265109, 2265114, 2265115, 2265116
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2265109, 2265114, 2265115, 2265116
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2265109, 2265114, 2265115, 2265116
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2265109, 2265114, 2265115, 2265116
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2265110, 2265117, 2265118, 2265119
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2265108
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2265108, 2265111, 2265112, 2265113
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2265108
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2265108, 2265111, 2265112, 2265113
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2265108, 2265111, 2265112, 2265113
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2265109, 2265114, 2265115, 2265116

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	07/27/2021			07/27/2021 15:40	Sarah A Nixon	2265108, 2265111, 2265112, 2265113
EPA 300.0 Rev. 2.1	07/27/2021			07/30/2021 13:04	Lipi Saha	2265111
	07/27/2021			07/30/2021 13:23	Lipi Saha	2265112
	07/27/2021			07/30/2021 13:42	Lipi Saha	2265113
	07/27/2021			07/31/2021 05:01	Lipi Saha	2265108
EPA 350.1 Rev. 2.0	07/27/2021			08/05/2021 12:45	Ping Hua	2265116
	07/27/2021			08/05/2021 12:51	Ping Hua	2265114
	07/27/2021			08/05/2021 12:53	Ping Hua	2265115
	07/27/2021			08/05/2021 13:09	Ping Hua	2265109
EPA 351.2 Rev. 2.0	07/27/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 13:01	Virginia P. Brown	2265114
	07/27/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 13:02	Virginia P. Brown	2265115
	07/27/2021	08/13/2021 13:09	Madeline Gruver	08/16/2021 13:04	Virginia P. Brown	2265116
	07/27/2021	08/18/2021 14:21	Benjamin T. Nordmann	08/19/2021 10:52	Virginia P. Brown	2265109
EPA 353.2 Rev. 2.0	07/27/2021			07/28/2021 10:37	Beverly Y. Sanders	2265109
	07/27/2021			07/30/2021 11:34	Beverly Y. Sanders	2265114
	07/27/2021			07/30/2021 11:35	Beverly Y. Sanders	2265115
	07/27/2021			07/30/2021 11:36	Beverly Y. Sanders	2265116
EPA 365.1 Rev. 2.0	07/27/2021	07/29/2021 12:32	Simonne.V. Calhoun	07/30/2021 13:16	Shengyu Ding	2265109
	07/27/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 09:39	Shengyu Ding	2265116
	07/27/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 12:08	Shengyu Ding	2265114
	07/27/2021	07/30/2021 15:31	Simonne.V. Calhoun	08/02/2021 12:09	Shengyu Ding	2265115
EPA 365.1 Rev. 2.0 dissolved	07/27/2021			07/27/2021 15:19	Ping Hua	2265118
	07/27/2021			07/27/2021 15:27	Ping Hua	2265117
	07/27/2021			07/27/2021 15:28	Ping Hua	2265119
	07/27/2021			07/27/2021 16:03	Ping Hua	2265110
SM 2120 B-2011	07/27/2021			07/27/2021 16:48	Madeline Gruver	2265108
SM 2320 B-2011	07/27/2021			07/28/2021 19:07	Dale L. Simmons	2265108
	07/27/2021			07/28/2021 23:39	Dale L. Simmons	2265111
	07/27/2021			07/28/2021 23:53	Dale L. Simmons	2265112
	07/27/2021			07/29/2021 00:08	Dale L. Simmons	2265113
SM 2540 C-2011	07/27/2021			07/30/2021 15:15	Yijie Li	2265108
SM 2540 D-2011	07/27/2021			07/30/2021 15:15	Yijie Li	2265108, 2265111, 2265112, 2265113
SM 4500 F-C-2011	07/27/2021			07/28/2021 19:07	Dale L. Simmons	2265108
	07/27/2021			07/28/2021 22:51	Dale L. Simmons	2265111
	07/27/2021			07/28/2021 23:07	Dale L. Simmons	2265112
	07/27/2021			07/28/2021 23:12	Dale L. Simmons	2265113
SM 5310 B-2011	07/27/2021			08/03/2021 02:02	Madeline Gruver	2265114
	07/27/2021			08/03/2021 02:15	Madeline Gruver	2265115
	07/27/2021			08/09/2021 20:36	Madeline Gruver	2265109
	07/27/2021			08/10/2021 08:15	Madeline Gruver	2265116