

Chemical Analysis Report

SW-DIST-2020-06-30-02

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

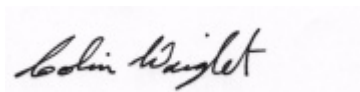
Event Description: **Citrus Blue, Cato, Lindsay, McKethan**
Request ID: **RQ-2020-06-01-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 16-JUL-2020 10:17

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Citrus Blue Spring Run

Collection Date/Time: 06/29/2020 10:25

Field ID: G4SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2179777	EPA 180.1 Rev. 2.0	Turbidity	0.15		NTU	P383890	
	EPA 300.0 Rev. 2.1	Chloride	7.3		mg Cl/L	P384101	
		Sulfate	14		mg SO4/L	P384105	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P383918	
	SM 2320 B-2011	Total Alkalinity	157	A	mg CaCO3/L	P384045	
	SM 2540 C-2011	TDS	195		mg/L	P384367	
	SM 2540 D-2011	TSS	2	U	mg/L	P384358	
	SM 4500 F-C-2011	Fluoride	0.049	I	mg F/L	P384049	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P384026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.13	I J	mg N/L	P383889	MS
2179780	EPA 353.2 Rev. 2.0	NO2NO3-N	0.70		mg N/L	P383979	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P383930	
	SM 5310 B-2011	Organic Carbon	0.52	I	mg C/L	P383962	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.030		mg P/L	P383898	
2179783	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.

EPA 351.2 Rev. 2.0: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Cato Lake South

Collection Date/Time: 06/29/2020 11:25

Field ID: G4SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2179778	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P383890	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P384101	
		Sulfate	0.20	U	mg SO4/L	P384105	
	SM 2120 B-2011	Color (true)	24	A	PCU	P383919	
	SM 2320 B-2011	Total Alkalinity	151		mg CaCO3/L	P384133	
	SM 2540 C-2011	TDS	242	A	mg/L	P384367	
	SM 2540 D-2011	TSS	3	IA	mg/L	P384358	
	SM 4500 F-C-2011	Fluoride	0.096	I	mg F/L	P384049	
2179781	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P384026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.85		mg N/L	P383889	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383980	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P383930	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P383962	
2179784	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383898	

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: McKethan Lake near boat launch

Collection Date/Time: 06/29/2020 12:15

Field ID: G4SW0033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2179779	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P383891	
	EPA 300.0 Rev. 2.1	Chloride	2.4		mg Cl/L	P384101	
		Sulfate	0.20	U	mg SO4/L	P384105	
	SM 2120 B-2011	Color (true)	10		PCU	P383919	
	SM 2320 B-2011	Total Alkalinity	6.8		mg CaCO3/L	P384133	
	SM 2540 C-2011	TDS	22	I	mg/L	P384367	
	SM 2540 D-2011	TSS	2	U	mg/L	P384358	
	SM 4500 F-C-2011	Fluoride	0.040	I	mg F/L	P384049	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P384026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P383889	MS
2179782	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383980	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P383930	
	SM 5310 B-2011	Organic Carbon	7.0		mg C/L	P383962	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P383899	
	dissolved						
2179785	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P383899	

Ref. Method and Comment:

SM 2540 D-2011: 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: P383890

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383891

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384101

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384105

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384026

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383889

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383979

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383980

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383930

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383899

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

Reference Method: SM 2120 B-2011
Batch ID: P383918

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P383919

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P384045

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

Reference Method: SM 2320 B-2011
Batch ID: P384133

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

Reference Method: SM 2540 C-2011
Batch ID: P384367

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P384358

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384049

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P383962

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: P384101

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: P384105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384026

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383979

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383980

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	107		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.0		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P383918

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.9		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P383919

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P384045

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P384133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179729	Chloride	99.5		P	90 - 110
2179915	Chloride	98.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179729	Sulfate	98.1		P	90 - 110
2179915	Sulfate	95.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179780	Ammonia-N	104	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179780	Kjeldahl Nitrogen	112	106	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179706	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179781	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179703	Total-P	108	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179784	O-Phosphate-P	93.3	94.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179819	O-Phosphate-P	97.3	97.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P384049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179777	Fluoride	101	99.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2179818	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383890

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179760	Turbidity	1.42	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383891

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179307	Turbidity	3.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179915	Chloride	0.381	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179915	Sulfate	0.0801	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179780	Ammonia-N	0.389	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179780	Kjeldahl Nitrogen	5.25	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179706	NO2NO3-N	0.506	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179781	NO2NO3-N	0.506	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179703	Total-P	0.819	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179784	O-Phosphate-P	0.960	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179819	O-Phosphate-P	0.308	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179702	Color (true)	1.82	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179778	Color (true)	3.97	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179777	Total Alkalinity	0.257	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P384133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180125	Total Alkalinity	1.19	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P384367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179778	TDS	8.26	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P384049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179777	Fluoride	0.963	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2179818	Organic Carbon	1.18	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: A99608

Included Lab Sample IDs: 2179777, 2179778, 2179779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99611

Included Lab Sample IDs: 2179783, 2179784, 2179785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	97.0	P/P	90 - 110
O-Phosphate-P	99.1	97.7	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A99622

Included Lab Sample IDs: 2179777, 2179778, 2179779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	99.8	P/P	90 - 115
Color (true)	99.8	99.9	P/P	90 - 115

Reference Method: SM 5310 B-2011

Run ID: A99638

Included Lab Sample IDs: 2179780, 2179781, 2179782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99647

Included Lab Sample IDs: 2179780, 2179781, 2179782

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: EPA 300.0 Rev. 2.1

Run ID: A99659

Included Lab Sample IDs: 2179777, 2179778, 2179779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	100	P/P	90 - 110
Sulfate	99.4	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99664

Included Lab Sample IDs: 2179780, 2179781, 2179782

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A99669

Included Lab Sample IDs: 2179777

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99669

Included Lab Sample IDs: 2179777, 2179778, 2179779

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99685

Included Lab Sample IDs: 2179780, 2179781, 2179782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	101	P/P	90 - 110
Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99699

Included Lab Sample IDs: 2179780, 2179781, 2179782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110
Total-P	98.5	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99709

Included Lab Sample IDs: 2179778, 2179779

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.7	92.4	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.42	
	Turbidity					3.21	
EPA 300.0 Rev. 2.1	Chloride	99.9	98.0	99.5		0.381	
	Sulfate	98.5	95.0	98.1		0.0801	
EPA 350.1 Rev. 2.0	Ammonia-N	99.3	104	105			0.389
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.6	112	106			5.25
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.0	98.5			0.506
	NO ₂ NO ₃ -N	102	99.0	98.5			0.506
EPA 365.1 Rev. 2.0	Total-P	107	108	107			0.819
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	93.3	94.2			0.960
	O-Phosphate-P	98.0	97.3	97.6			0.308
SM 2120 B-2011	Color (true)	97.9				1.82	
	Color (true)	98.6				3.97	
SM 2320 B-2011	Total Alkalinity	98.8				0.257	
	Total Alkalinity	95.7				1.19	
SM 2540 C-2011	TDS					8.26	
SM 4500 F-C-2011	Fluoride	99.8	101	99.4			0.963
SM 5310 B-2011	Organic Carbon	103	100	101			1.18

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2179777, 2179778, 2179779
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2179777, 2179778, 2179779
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2179777, 2179778, 2179779
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2179780, 2179781, 2179782
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2179780, 2179781, 2179782
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2179780, 2179781, 2179782
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2179780, 2179781, 2179782
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2179783, 2179784, 2179785
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2179777, 2179778, 2179779
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2179777, 2179778, 2179779
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2179777, 2179778, 2179779
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2179777, 2179778, 2179779
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2179777, 2179778, 2179779
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2179780, 2179781, 2179782

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	06/30/2020			06/30/2020 15:18	Yen Ta	2179777, 2179778, 2179779
EPA 300.0 Rev. 2.1	06/30/2020			07/02/2020 21:40	Jhamieka S. Greenwood	2179777
	06/30/2020			07/02/2020 21:52	Jhamieka S. Greenwood	2179778
	06/30/2020			07/02/2020 22:04	Jhamieka S. Greenwood	2179779
EPA 350.1 Rev. 2.0	06/30/2020			07/04/2020 12:21	Ping Hua	2179780
	06/30/2020			07/04/2020 12:39	Ping Hua	2179781
	06/30/2020			07/04/2020 12:41	Ping Hua	2179782
EPA 351.2 Rev. 2.0	06/30/2020	07/02/2020 09:40	Sima Feizi	07/06/2020 10:10	Jhamieka S. Greenwood	2179780
	06/30/2020	07/02/2020 09:40	Sima Feizi	07/06/2020 10:30	Jhamieka S. Greenwood	2179781
	06/30/2020	07/02/2020 09:40	Sima Feizi	07/06/2020 10:32	Jhamieka S. Greenwood	2179782
EPA 353.2 Rev. 2.0	06/30/2020			07/02/2020 09:08	Beverly Y. Sanders	2179780
	06/30/2020			07/02/2020 09:15	Beverly Y. Sanders	2179781
	06/30/2020			07/02/2020 09:22	Beverly Y. Sanders	2179782
EPA 365.1 Rev. 2.0	06/30/2020	07/01/2020 12:11	Yen Ta	07/07/2020 08:17	Lipi Saha	2179780
	06/30/2020	07/01/2020 12:11	Yen Ta	07/07/2020 08:25	Lipi Saha	2179781
	06/30/2020	07/01/2020 12:11	Yen Ta	07/07/2020 08:26	Lipi Saha	2179782
EPA 365.1 Rev. 2.0 dissolved	06/30/2020			06/30/2020 16:20	Jhamieka S. Greenwood	2179784
	06/30/2020			06/30/2020 16:24	Jhamieka S. Greenwood	2179783
	06/30/2020			06/30/2020 16:38	Jhamieka S. Greenwood	2179785
SM 2120 B-2011	06/30/2020			06/30/2020 14:57	Benjamin T. Nordmann	2179777
	06/30/2020			06/30/2020 15:02	Benjamin T. Nordmann	2179778
	06/30/2020			06/30/2020 15:03	Benjamin T. Nordmann	2179779
SM 2320 B-2011	06/30/2020			07/03/2020 06:44	Lauren Lees	2179777
	06/30/2020			07/07/2020 01:55	Dale L. Simmons	2179778
	06/30/2020			07/07/2020 02:03	Dale L. Simmons	2179779
SM 2540 C-2011	06/30/2020			07/01/2020 13:59	Yijie Li	2179777, 2179778, 2179779
SM 2540 D-2011	06/30/2020			07/01/2020 13:59	Yijie Li	2179777, 2179778, 2179779
SM 4500 F-C-2011	06/30/2020			07/03/2020 06:33	Lauren Lees	2179777
	06/30/2020			07/03/2020 07:38	Lauren Lees	2179778
	06/30/2020			07/03/2020 07:50	Lauren Lees	2179779
SM 5310 B-2011	06/30/2020			07/02/2020 01:08	David Boose	2179780
	06/30/2020			07/02/2020 01:21	David Boose	2179781
	06/30/2020			07/02/2020 01:33	David Boose	2179782