

Chemical Analysis Report

SO-DIST-2020-03-03-02

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

Event Description: **Caloosa Creeks**
Request ID: **RQ-2020-03-02-15**
Customer: **SO-DIST**
Project ID: **BMAP**

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FLDEP South District Office
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Date Certified: 20-MAR-2020 17:38



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: Hancock Creek

Collection Date/Time: 03/02/2020 09:00

Field ID: G3SD0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161764	SM 2120 B-2011	Color (true)	46		PCU	P379998	
	SM 2320 B-2011	Total Alkalinity	157	A	mg CaCO3/L	P380592	
	SM 2540 D-2011	TSS	6	I	mg/L	P380428	
	SM 4500 F-C-2011	Fluoride	0.45		mg F/L	P380596	
2161767	SM 5310 B-2011 dissolved	Organic Carbon	12		mg C/L	P380276	
2161770	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P380468	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P380168	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P380359	
	EPA 365.1 Rev. 2.0	Total-P	0.13		mg P/L	P380306	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P380276	
2161773	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.090		mg P/L	P379984	

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: Telegraph Creek

Collection Date/Time: 03/02/2020 09:40

Field ID: G3SD0129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161765	SM 2120 B-2011	Color (true)	83		PCU	P380003	
	SM 2320 B-2011	Total Alkalinity	217		mg CaCO3/L	P380270	
	SM 2540 D-2011	TSS	2	I	mg/L	P380427	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P380274	
2161768	SM 5310 B-2011 dissolved	Organic Carbon	17		mg C/L	P380276	
2161771	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P380072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P380114	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P380284	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P380307	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P380276	
2161774	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.046		mg P/L	P379983	MS

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: Orange River

Collection Date/Time: 03/02/2020 10:25

Field ID: G3SD0128

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2161766	SM 2120 B-2011	Color (true)	30		PCU	P380003	
	SM 2320 B-2011	Total Alkalinity	166		mg CaCO3/L	P380270	
	SM 2540 D-2011	TSS	3	I	mg/L	P380427	
	SM 4500 F-C-2011	Fluoride	0.17		mg F/L	P380274	
2161769	SM 5310 B-2011 dissolved	Organic Carbon	9.0		mg C/L	P380276	
2161772	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P380072	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P380114	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380284	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P380307	
	SM 5310 B-2011	Organic Carbon	8.8		mg C/L	P380276	
2161775	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P379983	MS

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 350.1 Rev. 2.0
Batch ID: P380072

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380468

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380168

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380284

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380359

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380307

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379983

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379984

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

Reference Method: SM 2120 B-2011
Batch ID: P379998

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P380003

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380270

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

Reference Method: SM 2320 B-2011
Batch ID: P380592

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

Reference Method: SM 2540 D-2011
Batch ID: P380427

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380428

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380596

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: P380276

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

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P380276

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380468

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: P380114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380168

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380284

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380359

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: P380306

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380307

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379983

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379984

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P379998

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P380003

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

Reference Method: SM 2320 B-2011
Batch ID: P380270

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	98 - 106

Reference Method: SM 2320 B-2011
Batch ID: P380592

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	92 - 103

Reference Method: SM 4500 F-C-2011
Batch ID: P380596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.0		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P380276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161714	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161619	Ammonia-N	102	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161772	Kjeldahl Nitrogen	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162142	Kjeldahl Nitrogen	98.5	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161771	NO2NO3-N	96.9	96.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380359

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161600	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380306

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161620	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380307

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161734	Total-P	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161797	O-Phosphate-P	64.5	62.2	F/F	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161773	O-Phosphate-P	97.6	98.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161886	Fluoride	103	105	P/P	89 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P380596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161200	Fluoride	99.3	100	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P380276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161796	Organic Carbon	97.9	99.2	P/P	85 - 115

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P380276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2161796	Organic Carbon	97.9	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161714	Ammonia-N	0.264	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161619	Ammonia-N	0.364	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161772	Kjeldahl Nitrogen	0.611	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162142	Kjeldahl Nitrogen	0.675	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161771	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380359

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161600	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161620	Total-P	0.802	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380307

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161734	Total-P	1.02	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161797	O-Phosphate-P	3.40	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P379984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161773	O-Phosphate-P	0.691	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P379998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161239	Color (true)	2.36	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P380003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161726	Color (true)	1.76	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380270

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161886	Total Alkalinity	0.852	Sample	P	0 - 2.8

Reference Method: SM 2320 B-2011
Batch ID: P380592

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161764	Total Alkalinity	0.349	Sample	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P380274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161886	Fluoride	1.42	Spike	P	0 - 2.5

Reference Method: SM 4500 F-C-2011
Batch ID: P380596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161200	Fluoride	0.516	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P380276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161796	Organic Carbon	0.989	Spike	P	0 - 20

Reference Method: SM 5310 B-2011 dissolved
Batch ID: P380276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2161796	Organic Carbon	0.989	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: A97966

Included Lab Sample IDs: 2161773, 2161774, 2161775

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.3	95.1	P/P	90 - 110
O-Phosphate-P	98.5	97.3	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97970

Included Lab Sample IDs: 2161764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: SM 2120 B-2011

Run ID: A97971

Included Lab Sample IDs: 2161765, 2161766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.0	101	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97999

Included Lab Sample IDs: 2161771, 2161772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	102	P/P	90 - 110
Ammonia-N	102	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98055

Included Lab Sample IDs: 2161771, 2161772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A98057

Included Lab Sample IDs: 2161770, 2161771, 2161772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	96.2	P/P	90 - 110
Organic Carbon	100	95.8	P/P	90 - 110

Reference Method: SM 5310 B-2011 dissolved

Run ID: A98057

Included Lab Sample IDs: 2161767, 2161768, 2161769

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	100	P/P	90 - 110
Organic Carbon	99.4	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A98059

Included Lab Sample IDs: 2161765, 2161766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	98.8	P/P	90 - 110
Total Alkalinity	98.8	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98059

Included Lab Sample IDs: 2161765, 2161766

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98061

Included Lab Sample IDs: 2161771, 2161772

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98065

Included Lab Sample IDs: 2161770

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98101

Included Lab Sample IDs: 2161770

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98131

Included Lab Sample IDs: 2161770

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98155

Included Lab Sample IDs: 2161770, 2161771

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110
Total-P	99.8	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A98174

Included Lab Sample IDs: 2161764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A98174

Included Lab Sample IDs: 2161764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98185

Included Lab Sample IDs: 2161772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	98.8	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 350.1 Rev. 2.0	Ammonia-N	98.5	101	101		0.264
	Ammonia-N	100	102	101		0.364
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0	106	107		0.611
	Kjeldahl Nitrogen	101	98.5	99.4		0.675
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	96.9	96.9		0.0
	NO2NO3-N	100	101	101		0.0
EPA 365.1 Rev. 2.0	Total-P	105	103	104		0.802
	Total-P	104	106	108		1.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105	64.5	62.2		3.40
	O-Phosphate-P	98.3	97.6	98.9		0.691
SM 2120 B-2011	Color (true)	99.8			2.36	
	Color (true)	101			1.76	
SM 2320 B-2011	Total Alkalinity	99.1			0.852	
	Total Alkalinity	103			0.349	
SM 4500 F-C-2011	Fluoride	98.8	103	105		1.42
	Fluoride	95.0	99.3	100		0.516
SM 5310 B-2011	Organic Carbon	96.8	97.9	99.2		0.989
SM 5310 B-2011 dissolved	Organic Carbon	96.8	97.9	99.2		0.989

Reference Method Descriptions

Method	Description	Associated Samples
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2161770, 2161771, 2161772
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2161770, 2161771, 2161772
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2161770, 2161771, 2161772
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2161770, 2161771, 2161772
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2161773, 2161774, 2161775
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2161764, 2161765, 2161766
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2161764, 2161765, 2161766
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2161764, 2161765, 2161766
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2161764, 2161765, 2161766
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2161770, 2161771, 2161772
SM 5310 B-2011 dissolved	Dissolved Nonpurgeable Organic Carbon in filtered, aqueous matrices	2161767, 2161768, 2161769

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	03/03/2020			03/04/2020 14:24	Ping Hua	2161772
	03/03/2020			03/04/2020 14:38	Ping Hua	2161771
	03/03/2020			03/09/2020 14:46	Ping Hua	2161770
EPA 351.2 Rev. 2.0	03/03/2020	03/05/2020 12:35	Sima Feizi	03/06/2020 20:28	Julia Storbeck	2161772
	03/03/2020	03/05/2020 12:35	Sima Feizi	03/06/2020 20:39	Julia Storbeck	2161771
	03/03/2020	03/06/2020 12:00	Sima Feizi	03/09/2020 11:43	Jhamieka S. Greenwood	2161770
EPA 353.2 Rev. 2.0	03/03/2020			03/09/2020 09:40	Beverly Y. Sanders	2161771
	03/03/2020			03/09/2020 09:47	Beverly Y. Sanders	2161772
	03/03/2020			03/10/2020 11:15	Beverly Y. Sanders	2161770
EPA 365.1 Rev. 2.0	03/03/2020	03/09/2020 14:56	Yen Ta	03/11/2020 18:42	Benjamin T. Nordmann	2161770
	03/03/2020	03/09/2020 14:56	Yen Ta	03/11/2020 18:54	Benjamin T. Nordmann	2161771
	03/03/2020	03/09/2020 14:56	Yen Ta	03/12/2020 13:53	Benjamin T. Nordmann	2161772
EPA 365.1 Rev. 2.0 dissolved	03/03/2020			03/03/2020 16:29	Carlos Miranda	2161774
	03/03/2020			03/03/2020 16:30	Carlos Miranda	2161775
	03/03/2020			03/03/2020 16:40	Carlos Miranda	2161773
SM 2120 B-2011	03/03/2020			03/03/2020 17:41		2161764
	03/03/2020			03/03/2020 18:34		2161765, 2161766
SM 2320 B-2011	03/03/2020			03/07/2020 15:46	Samantha Davila	2161766
	03/03/2020			03/07/2020 17:49	Samantha Davila	2161765
	03/03/2020			03/12/2020 16:52	Dale L. Simmons	2161764
SM 2540 D-2011	03/03/2020			03/05/2020 15:08	Yijie Li	2161764, 2161765, 2161766
SM 4500 F-C-2011	03/03/2020			03/07/2020 15:46	Samantha Davila	2161766
	03/03/2020			03/07/2020 17:49	Samantha Davila	2161765
	03/03/2020			03/12/2020 15:58	Dale L. Simmons	2161764
SM 5310 B-2011	03/03/2020			03/06/2020 16:38	Lauren Lees	2161771
	03/03/2020			03/06/2020 20:35	Lauren Lees	2161770
	03/03/2020			03/06/2020 20:49	Lauren Lees	2161772
SM 5310 B-2011 dissolved	03/03/2020			03/06/2020 17:03	Lauren Lees	2161767
	03/03/2020			03/06/2020 17:16	Lauren Lees	2161768
	03/03/2020			03/06/2020 17:58	Lauren Lees	2161769