

Chemical Analysis Report

CEN-DIST-2020-01-22-01

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

Event Description: **Spring Garden Creek + D&B**
Request ID: **RQ-2020-01-06-39**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-FEB-2020 11:09

A handwritten signature in black ink, appearing to read "Liang Lin", 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: Spring Garden Creek Just DS of Deep Creek

Collection Date/Time: 01/21/2020 11:55

Field ID: G2CE0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150843	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P377779	
	EPA 300.0 Rev. 2.1	Chloride	210		mg Cl/L	P378042	
		Sulfate	40		mg SO4/L	P378045	
	SM 2120 B-2011	Color (true)	190		PCU	P377572	
	SM 2320 B-2011	Total Alkalinity	66		mg CaCO3/L	P377697	
	SM 2540 C-2011	TDS	529		mg/L	P377833	
	SM 2540 D-2011	TSS	8	I	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P377702	
2150844	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P378178	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P377988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P377841	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P377911	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P377829	
2150845	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P377564	

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: Spring Garden Creek Just DS of Deep Creek

Collection Date/Time: 01/21/2020 11:58

Field ID: G2CE0126_Dup

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150846	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P377779	
	EPA 300.0 Rev. 2.1	Chloride	210		mg Cl/L	P378042	
		Sulfate	40		mg SO4/L	P378045	
		Color (true)	190		PCU	P377572	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P377697	
	SM 2540 C-2011	TDS	506		mg/L	P377833	
	SM 2540 D-2011	TSS	8	I	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.099	I	mg F/L	P377702	
2150847	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P378019	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P377988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P377841	
	EPA 365.1 Rev. 2.0	Total-P	0.073		mg P/L	P377911	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P377829	
2150848	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.037		mg P/L	P377564	

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: Field Blank

Collection Date/Time: 01/21/2020 12:50

Field ID: FB_01212020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150849	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P377779	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P378042	
		Sulfate	0.20	U	mg SO4/L	P378045	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P377572	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P377697	
	SM 2540 C-2011	TDS	15	U	mg/L	P377833	
	SM 2540 D-2011	TSS	2	U	mg/L	P377693	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P377702	
2150850	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P378019	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P377988	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377935	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P377911	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P377835	
2150851	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P377810	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample was reanalyzed out of holding time because of analytical difficulties.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377779

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378178

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377988

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377841

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377935

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377911

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: P377564

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377810

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

Reference Method: SM 2120 B-2011
Batch ID: P377572

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377697

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

Reference Method: SM 2540 C-2011
Batch ID: P377833

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377693

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377829

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

Reference Method: SM 5310 B-2011
Batch ID: P377835

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: P378042

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

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: P378019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377988

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377841

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: P377935

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: P377911

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: P377564

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377810

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

Reference Method: SM 2120 B-2011
Batch ID: P377572

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P377697

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

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P377835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150906	Chloride	98.8		P	90 - 110
2151049	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150906	Sulfate	99.5		P	90 - 110
2151049	Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150908	Ammonia-N	95.0	94.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151685	Ammonia-N	98.4	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150909	Kjeldahl Nitrogen	105	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150831	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150778	NO2NO3-N	97.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150832	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377564

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150379	O-Phosphate-P	96.7	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149744	O-Phosphate-P	94.6	95.1	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150023	Fluoride	98.0	98.0	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2150832	Organic Carbon	98.4	99.0	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P377835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151126	Organic Carbon	98.0	92.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150906	Turbidity	5.50	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151049	Chloride	1.05	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151049	Sulfate	1.18	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150908	Ammonia-N	0.304	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151685	Ammonia-N	1.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150909	Kjeldahl Nitrogen	0.509	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150831	NO2NO3-N	0.451	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150778	NO2NO3-N	0.402	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150832	Total-P	0.184	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377564

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150379	O-Phosphate-P	2.95	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149744	O-Phosphate-P	0.428	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P377572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150829	Color (true)	0.255	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P377697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150023	Total Alkalinity	0.297	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P377833

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150830	TDS	1.46	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150023	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150832	Organic Carbon	0.348	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P377835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151126	Organic Carbon	3.01	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: A97060

Included Lab Sample IDs: 2150845, 2150848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.6	P/P	90 - 110
O-Phosphate-P	98.6	97.1	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A97062

Included Lab Sample IDs: 2150843, 2150846, 2150849

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

Reference Method: SM 2320 B-2011

Run ID: A97099

Included Lab Sample IDs: 2150843, 2150846, 2150849

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

Reference Method: SM 4500 F-C-2011

Run ID: A97099

Included Lab Sample IDs: 2150843, 2150846, 2150849

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97138

Included Lab Sample IDs: 2150844, 2150847

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97140

Included Lab Sample IDs: 2150843, 2150846, 2150849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97147

Included Lab Sample IDs: 2150851

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97157

Included Lab Sample IDs: 2150844, 2150847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A97157

Included Lab Sample IDs: 2150844, 2150847

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	102	P/P	90 - 110
Organic Carbon	104	103	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97159

Included Lab Sample IDs: 2150850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2150843, 2150846, 2150849

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	99.2	P/P	90 - 110
Sulfate	99.7	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A97186

Included Lab Sample IDs: 2150850

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: A97221

Included Lab Sample IDs: 2150847, 2150850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.9	P/P	90 - 110
Ammonia-N	98.9	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97234

Included Lab Sample IDs: 2150844, 2150847, 2150850

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	107	P/P	90 - 110
Kjeldahl Nitrogen	98.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97248

Included Lab Sample IDs: 2150844, 2150847

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97256

Included Lab Sample IDs: 2150850

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97280

Included Lab Sample IDs: 2150844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	101	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				5.50	
EPA 300.0 Rev. 2.1	Chloride	100	99.1	98.8	1.05	
	Sulfate	98.5	96.5	99.5	1.18	
EPA 350.1 Rev. 2.0	Ammonia-N	99.7	95.0	94.4		0.304
	Ammonia-N	96.4	98.4	100		1.55
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	106	105		0.509
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	101	100		0.451
	NO ₂ NO ₃ -N	101	97.9	98.4		0.402
EPA 365.1 Rev. 2.0	Total-P	104	104	104		0.184
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	96.7	99.6		2.95
	O-Phosphate-P	98.9	94.6	95.1		0.428
SM 2120 B-2011	Color (true)	103			0.255	
SM 2320 B-2011	Total Alkalinity	103			0.297	
SM 2540 C-2011	TDS				1.46	
SM 4500 F-C-2011	Fluoride	97.1	98.0	98.0		0.0
SM 5310 B-2011	Organic Carbon	98.2	98.4	99.0		0.348
	Organic Carbon	92.8	98.0	92.9		3.01

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2150843, 2150846, 2150849
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2150843, 2150846, 2150849
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2150843, 2150846, 2150849
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2150844, 2150847, 2150850
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2150844, 2150847, 2150850
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2150844, 2150847, 2150850
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2150844, 2150847, 2150850
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2150845, 2150848, 2150851
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2150843, 2150846, 2150849
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2150843, 2150846, 2150849
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2150843, 2150846, 2150849
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2150843, 2150846, 2150849
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2150843, 2150846, 2150849
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2150844, 2150847, 2150850

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	01/22/2020			01/22/2020 17:08	Yen Ta	2150843, 2150846, 2150849
EPA 300.0 Rev. 2.1	01/22/2020			01/29/2020 21:41	Lipi Saha	2150843
	01/22/2020			01/29/2020 21:53	Lipi Saha	2150846
	01/22/2020			01/29/2020 22:05	Lipi Saha	2150849
EPA 350.1 Rev. 2.0	01/22/2020			01/30/2020 14:27	Ping Hua	2150847
	01/22/2020			01/30/2020 14:45	Ping Hua	2150850
	01/22/2020			02/03/2020 12:26	Ping Hua	2150844
EPA 351.2 Rev. 2.0	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 09:16	Jhamieka S. Greenwood	2150844
	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 09:18	Jhamieka S. Greenwood	2150847
	01/22/2020	01/30/2020 17:30	Jhamieka S. Greenwood	01/31/2020 09:22	Jhamieka S. Greenwood	2150850
EPA 353.2 Rev. 2.0	01/22/2020			01/28/2020 12:30	Beverly Y. Sanders	2150844
	01/22/2020			01/28/2020 12:31	Beverly Y. Sanders	2150847
	01/22/2020			01/29/2020 09:26	Beverly Y. Sanders	2150850
EPA 365.1 Rev. 2.0	01/22/2020	01/29/2020 15:35	Yen Ta	01/30/2020 13:24	Benjamin T. Nordmann	2150844
	01/22/2020	01/29/2020 15:35	Yen Ta	01/30/2020 13:25	Benjamin T. Nordmann	2150847
	01/22/2020	01/29/2020 15:35	Yen Ta	01/31/2020 13:00	Benjamin T. Nordmann	2150850
EPA 365.1 Rev. 2.0 dissolved	01/22/2020			01/22/2020 14:00	Carlos Miranda	2150845
	01/22/2020			01/22/2020 14:05	Carlos Miranda	2150848
	01/22/2020			01/28/2020 17:12	Carlos Miranda	2150851
SM 2120 B-2011	01/22/2020			01/22/2020 17:02	Madeline Funaro	2150849
	01/22/2020			01/22/2020 17:17	Madeline Funaro	2150843
	01/22/2020			01/22/2020 17:18	Madeline Funaro	2150846
SM 2320 B-2011	01/22/2020			01/25/2020 09:25	Dale L. Simmons	2150843
	01/22/2020			01/25/2020 09:38	Dale L. Simmons	2150846
	01/22/2020			01/25/2020 09:53	Dale L. Simmons	2150849
SM 2540 C-2011	01/22/2020			01/23/2020 17:00	Blanca Fach	2150843, 2150846, 2150849
SM 2540 D-2011	01/22/2020			01/23/2020 17:00	Blanca Fach	2150843, 2150846, 2150849
SM 4500 F-C-2011	01/22/2020			01/25/2020 09:25	Dale L. Simmons	2150843
	01/22/2020			01/25/2020 09:38	Dale L. Simmons	2150846
	01/22/2020			01/25/2020 09:53	Dale L. Simmons	2150849
SM 5310 B-2011	01/22/2020			01/28/2020 02:39	Madeline Funaro	2150850
	01/22/2020			01/28/2020 08:51	Madeline Funaro	2150844
	01/22/2020			01/28/2020 09:32	Madeline Funaro	2150847