

Chemical Analysis Report

TLH-ROC-2020-09-04-01

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

Event Description: **Run 11**
Request ID: **RQ-2020-08-24-41**
Customer: **TLH-ROC**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 28-SEP-2020 18:06



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 Creek Springs Middle

Collection Date/Time: 09/03/2020 09:55

Field ID: G1TLHR0129

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194379	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P386998	
	EPA 300.0 Rev. 2.1	Bromide	4.2		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	85		mg CaCO3/L	P387126	
	SM 2540 D-2011	TSS	2	I	mg/L	P387378	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P387130	
2194381	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P387039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P387462	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P387370	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P387729	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P387239	
2194383	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P387013	

Ref. Method and Comment:

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

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

Sample Location: Spring Creek Spring

Collection Date/Time: 09/03/2020 10:05

Field ID: G1TLHR0131

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194380	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P386998	
	EPA 300.0 Rev. 2.1	Bromide	3.3		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	82		mg CaCO3/L	P387126	
	SM 2540 D-2011	TSS	2	I	mg/L	P387378	
	SM 4500 F-C-2011	Fluoride	0.10	I	mg F/L	P387130	
2194382	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P387045	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.53		mg N/L	P387459	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.063		mg N/L	P387136	
	EPA 365.1 Rev. 2.0	Total-P	0.035		mg P/L	P387730	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P387239	
2194384	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P387011	

Ref. Method and Comment:

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

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

Sample Location: Oyster Bay South

Collection Date/Time: 09/03/2020 09:25

Field ID: G1TLHR0133

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194385	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P386998	
	EPA 300.0 Rev. 2.1	Bromide	13		mg Br/L	P387264	
	SM 2320 B-2011	Total Alkalinity	83		mg CaCO3/L	P387255	
	SM 2540 D-2011	TSS	3	IA	mg/L	P387380	
	SM 4500 F-C-2011	Fluoride	0.28		mg F/L	P387132	
2194387	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P387293	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P387238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P387370	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P387729	
	SM 5310 B-2011	Organic Carbon	20		mg C/L	P387315	
2194389	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P387013	

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: Oyster Bay North

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

Field ID: G1TLHR0134

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2194386	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P386998	
	EPA 300.0 Rev. 2.1	Bromide	5.0		mg Br/L	P387264	
	SM 2320 B-2011	Total Alkalinity	83		mg CaCO3/L	P387126	
	SM 2540 D-2011	TSS	2	I	mg/L	P387378	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P387130	
2194388	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P387293	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.67		mg N/L	P387238	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.043		mg N/L	P387370	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P387729	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P387239	
2194390	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.025		mg P/L	P387013	

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: P386998

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387264

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387039

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387045

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387293

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387238

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387459

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387462

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: P387136

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387370

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387729

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387730

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387013

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

Reference Method: SM 2320 B-2011
Batch ID: P387126

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

Reference Method: SM 2320 B-2011
Batch ID: P387255

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

Reference Method: SM 2540 D-2011
Batch ID: P387378

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P387380

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387130

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387132

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387239

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

Reference Method: SM 5310 B-2011
Batch ID: P387315

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: P387263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387045

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387293

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387238

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387459

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387462

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387136

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 353.2 Rev. 2.0
Batch ID: P387370

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387729

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: P387730

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.8		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P387126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P387255

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P387130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P387132

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.4		P	90 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P387239

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

Reference Method: SM 5310 B-2011
Batch ID: P387315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193332	Bromide	92.0	91.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194487	Bromide	92.9	93.8	P/P	90 - 110
2194489	Bromide	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194206	Ammonia-N	97.6	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387045

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194479	Ammonia-N	95.1	93.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387293

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194551	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194215	Kjeldahl Nitrogen	109	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387459

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195457	Kjeldahl Nitrogen	90.0	90.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195416	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194411	NO2NO3-N	99.2	98.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194381	NO2NO3-N	93.6	93.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387729

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194210	Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387730

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194382	Total-P	108	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194434	O-Phosphate-P	98.5	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194498	O-Phosphate-P	94.4	95.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P387130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194618	Fluoride	98.5	99.6	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P387132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194496	Fluoride	94.5	96.0	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387239

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194433	Organic Carbon	99.4	101	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P387315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2194647	Organic Carbon	96.1	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386998

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194432	Turbidity	1.35	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193332	Bromide	0.341	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194487	Bromide	0.808	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194206	Ammonia-N	2.79	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387045

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194479	Ammonia-N	1.41	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387293

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194551	Ammonia-N	1.47	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194215	Kjeldahl Nitrogen	0.554	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195457	Kjeldahl Nitrogen	0.281	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195416	Kjeldahl Nitrogen	2.65	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194411	NO2NO3-N	0.797	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194381	NO2NO3-N	0.426	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387729

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194210	Total-P	0.941	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387730

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194382	Total-P	0.684	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194434	O-Phosphate-P	0.607	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194498	O-Phosphate-P	1.39	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P387126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194618	Total Alkalinity	3.90	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P387255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194755	Total Alkalinity	0.520	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P387130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194618	Fluoride	0.921	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
 Batch ID: P387132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194496	Fluoride	0.959	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P387239

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194433	Organic Carbon	1.17	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P387315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2194647	Organic Carbon	0.704	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: A100828

Included Lab Sample IDs: 2194379, 2194380, 2194385, 2194386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100831

Included Lab Sample IDs: 2194383, 2194384, 2194389, 2194390

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.9	96.9	P/P	90 - 110
O-Phosphate-P	99.2	96.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100836

Included Lab Sample IDs: 2194381, 2194382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.8	96.6	P/P	90 - 110
Ammonia-N	97.5	97.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100873

Included Lab Sample IDs: 2194379, 2194380, 2194386

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

Reference Method: SM 4500 F-C-2011

Run ID: A100873

Included Lab Sample IDs: 2194379, 2194380, 2194385, 2194386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.7	95.9	P/P	90 - 110
Fluoride	96.7	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100874

Included Lab Sample IDs: 2194382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100921

Included Lab Sample IDs: 2194381, 2194382, 2194388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100925

Included Lab Sample IDs: 2194379, 2194380, 2194385, 2194386

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.0	99.6	P/P	90 - 110
Bromide	99.6	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100928

Included Lab Sample IDs: 2194385

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	99.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100944

Included Lab Sample IDs: 2194387, 2194388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	97.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100952

Included Lab Sample IDs: 2194387

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.6	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100964

Included Lab Sample IDs: 2194387, 2194388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	97.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100978

Included Lab Sample IDs: 2194381, 2194387, 2194388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101057

Included Lab Sample IDs: 2194381, 2194382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110
Kjeldahl Nitrogen	98.1	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101177

Included Lab Sample IDs: 2194381, 2194387, 2194388

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101177

Included Lab Sample IDs: 2194381, 2194387, 2194388

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.5	93.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101180

Included Lab Sample IDs: 2194382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	93.8	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					1.35	
EPA 300.0 Rev. 2.1	Bromide	94.0	92.0	91.6			0.341
	Bromide	96.6	92.9	93.8	94.0		0.808
EPA 350.1 Rev. 2.0	Ammonia-N	94.1	97.6	101			2.79
	Ammonia-N	94.0	95.1	93.4			1.41
	Ammonia-N	98.9	102	100			1.47
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	109	109			0.554
	Kjeldahl Nitrogen	101	90.0	90.5			0.281
	Kjeldahl Nitrogen	110	107	104			2.65
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	99.2	98.2			0.797
	NO2NO3-N	98.5	93.6	93.2			0.426
EPA 365.1 Rev. 2.0	Total-P	108	100	101			0.941
	Total-P	109	108	109			0.684
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	98.5	99.1			0.607
	O-Phosphate-P	98.8	94.4	95.9			1.39
SM 2320 B-2011	Total Alkalinity	99.4				3.90	
	Total Alkalinity	99.3				0.520	
SM 4500 F-C-2011	Fluoride	98.8	98.5	99.6			0.921
	Fluoride	93.4	94.5	96.0			0.959
SM 5310 B-2011	Organic Carbon	99.6	99.4	101			1.17
	Organic Carbon	96.0	96.1	96.9			0.704

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2194379, 2194380, 2194385, 2194386
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2194379, 2194380, 2194385, 2194386
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2194381, 2194382, 2194387, 2194388
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2194381, 2194382, 2194387, 2194388
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2194381, 2194382, 2194387, 2194388
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2194381, 2194382, 2194387, 2194388
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2194383, 2194384, 2194389, 2194390
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2194379, 2194380, 2194385, 2194386
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2194379, 2194380, 2194385, 2194386
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2194379, 2194380, 2194385, 2194386
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2194381, 2194382, 2194387, 2194388

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	09/04/2020			09/04/2020 15:07	Yen Ta	2194379, 2194380, 2194385, 2194386
EPA 300.0 Rev. 2.1	09/04/2020			09/10/2020 19:40	Lipi Saha	2194379
	09/04/2020			09/10/2020 19:57	Lipi Saha	2194380
	09/04/2020			09/10/2020 22:48	Lipi Saha	2194385
	09/04/2020			09/10/2020 23:05	Lipi Saha	2194386
EPA 350.1 Rev. 2.0	09/04/2020			09/07/2020 16:35	Ping Hua	2194381
	09/04/2020			09/07/2020 19:01	Ping Hua	2194382
	09/04/2020			09/12/2020 13:57	Ping Hua	2194387
	09/04/2020			09/12/2020 13:58	Ping Hua	2194388
EPA 351.2 Rev. 2.0	09/04/2020	09/11/2020 10:15	Sima Feizi	09/14/2020 13:53	Elliott Rodriguez	2194387
	09/04/2020	09/11/2020 10:15	Sima Feizi	09/14/2020 13:54	Elliott Rodriguez	2194388
	09/04/2020	09/16/2020 12:40	David Boose	09/17/2020 11:10	Virginia P. Brown	2194382
	09/04/2020	09/16/2020 12:40	David Boose	09/17/2020 12:07	Virginia P. Brown	2194381
EPA 353.2 Rev. 2.0	09/04/2020			09/09/2020 10:36	Beverly Y. Sanders	2194382
	09/04/2020			09/15/2020 09:17	Beverly Y. Sanders	2194381
	09/04/2020			09/15/2020 09:23	Beverly Y. Sanders	2194387
	09/04/2020			09/15/2020 09:24	Beverly Y. Sanders	2194388
EPA 365.1 Rev. 2.0	09/04/2020	09/23/2020 12:23	Yen Ta	09/24/2020 11:52	Lipi Saha	2194381
	09/04/2020	09/23/2020 12:23	Yen Ta	09/24/2020 11:53	Lipi Saha	2194387
	09/04/2020	09/23/2020 12:23	Yen Ta	09/24/2020 11:54	Lipi Saha	2194388
	09/04/2020	09/23/2020 12:23	Yen Ta	09/24/2020 12:47	Lipi Saha	2194382
EPA 365.1 Rev. 2.0 dissolved	09/04/2020			09/04/2020 14:50	Samantha Davila	2194384
	09/04/2020			09/04/2020 15:26	Samantha Davila	2194383
	09/04/2020			09/04/2020 15:27	Samantha Davila	2194389
	09/04/2020			09/04/2020 15:28	Samantha Davila	2194390
SM 2320 B-2011	09/04/2020			09/08/2020 20:55	Dale L. Simmons	2194380
	09/04/2020			09/08/2020 21:09	Dale L. Simmons	2194379
	09/04/2020			09/08/2020 21:31	Dale L. Simmons	2194386
	09/04/2020			09/10/2020 17:43	Dale L. Simmons	2194385
SM 2540 D-2011	09/04/2020			09/08/2020 15:26	Yijie Li	2194379, 2194380, 2194385, 2194386
SM 4500 F-C-2011	09/04/2020			09/08/2020 20:55	Dale L. Simmons	2194380
	09/04/2020			09/08/2020 21:09	Dale L. Simmons	2194379
	09/04/2020			09/08/2020 21:31	Dale L. Simmons	2194386
	09/04/2020			09/09/2020 02:28	Dale L. Simmons	2194385
SM 5310 B-2011	09/04/2020			09/10/2020 23:29	David Boose	2194381
	09/04/2020			09/10/2020 23:41	David Boose	2194382
	09/04/2020			09/10/2020 23:53	David Boose	2194388
	09/04/2020			09/12/2020 09:39	David Boose	2194387