Chemical Analysis Report

SE-DIST-2020-07-10-01

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

Event Description: **SMP- PB/Broward + Blank**
Request ID: **RQ-2020-07-06-70**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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2199 South Rock Road
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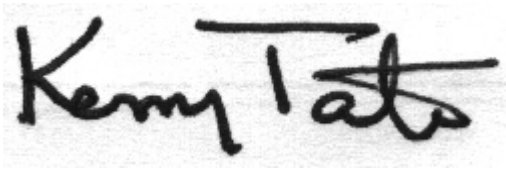
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 29-JUL-2020 10:34



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: E-1 West @ Glades **Collection Date/Time: 07/09/2020 12:10**

Field ID: G3SE0033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182474	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P384415	
	EPA 300.0 Rev. 2.1	Chloride	34		mg Cl/L	P384898	
		Sulfate	25		mg SO4/L	P384902	
	SM 2120 B-2011	Color (true)	40		PCU	P384513	
	SM 2320 B-2011	Total Alkalinity	184		mg CaCO3/L	P384613	
	SM 2540 C-2011	TDS	297		mg/L	P384944	
	SM 2540 D-2011	TSS	4	I	mg/L	P385021	
	SM 4500 F-C-2011	Fluoride	0.27		mg F/L	P384926	
2182476	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P384454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P384627	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384708	
	EPA 365.1 Rev. 2.0	Total-P	0.23		mg P/L	P384556	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P384554	
2182478	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P384520	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference 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.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: E-1 West @ Glades **Collection Date/Time: 07/09/2020 12:20**

Field ID: FieldBlank_09072020 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182480	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P384415	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P384898	
		Sulfate	0.20	U	mg SO4/L	P384902	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P384513	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P384613	
	SM 2540 C-2011	TDS	15	U	mg/L	P384943	
	SM 2540 D-2011	TSS	2	U	mg/L	P385020	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P384926	
2182481	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P384456	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P384627	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384709	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P384556	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P384554	
2182482	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384520	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference 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.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: C-16N @ Bellaggio **Collection Date/Time: 07/09/2020 13:00**

Field ID: G3SE0031 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2182475	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P384415	
	EPA 300.0 Rev. 2.1	Chloride	50		mg Cl/L	P384898	
		Sulfate	15		mg SO4/L	P384902	
	SM 2120 B-2011	Color (true)	56		PCU	P384513	
	SM 2320 B-2011	Total Alkalinity	212		mg CaCO3/L	P384613	
	SM 2540 C-2011	TDS	344	A	mg/L	P384944	
	SM 2540 D-2011	TSS	8	I A	mg/L	P385021	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P384926	
2182477	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P384454	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P384627	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384708	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P384556	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P384554	
2182479	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384520	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples and batch relative percent difference 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.
EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384415

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384898

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384902

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384454

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384456

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384627

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384708

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384709

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384556

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: P384520

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

Reference Method: SM 2120 B-2011
Batch ID: P384513

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P384613

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

Reference Method: SM 2540 C-2011
Batch ID: P384943

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P384944

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385020

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385021

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384926

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384554

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: P384898

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384902

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384454

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384456

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: P384627

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384708

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: P384709

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: P384556

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384520

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P384513

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

Reference Method: SM 2320 B-2011
Batch ID: P384613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P384554

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.5		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181974	Chloride	100		P	90 - 110
2182331	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181974	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182496	Ammonia-N	98.9	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182561	Ammonia-N	97.2	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182220	NO2NO3-N	98.2	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182494	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182091	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182498	O-Phosphate-P	95.9	95.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P384926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182490	Fluoride	100	99.6	P/P	94 - 107

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P384554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2182496	Organic Carbon	95.4	96.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182322	Turbidity	5.41	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182331	Chloride	1.12	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182496	Ammonia-N	0.216	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182561	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182332	Kjeldahl Nitrogen	4.02	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182220	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182494	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182091	Total-P	0.709	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182498	O-Phosphate-P	0.418	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P384513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182322	Color (true)	0.342	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182490	Total Alkalinity	0.339	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P384943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182323	TDS	7.84	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P384944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182475	TDS	4.37	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P384926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182490	Fluoride	0.472	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2182496	Organic Carbon	0.443	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: A99804
Included Lab Sample IDs: 2182474, 2182475, 2182480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A99811
Included Lab Sample IDs: 2182476, 2182477, 2182481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	99.0	P/P	90 - 110
Ammonia-N	99.5	98.5	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A99832
Included Lab Sample IDs: 2182474, 2182475, 2182480

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A99834
Included Lab Sample IDs: 2182478, 2182479, 2182482

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.4	P/P	90 - 110
O-Phosphate-P	98.5	98.0	P/P	90 - 110
O-Phosphate-P	99.1	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A99853
Included Lab Sample IDs: 2182476, 2182477, 2182481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.3	94.8	P/P	90 - 110
Organic Carbon	94.8	93.4	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A99877
Included Lab Sample IDs: 2182474, 2182475, 2182480

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99888
Included Lab Sample IDs: 2182476, 2182477

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A99903
Included Lab Sample IDs: 2182481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A99910
Included Lab Sample IDs: 2182476, 2182477, 2182481

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A99913
Included Lab Sample IDs: 2182476, 2182477, 2182481

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A99978
Included Lab Sample IDs: 2182474, 2182475, 2182480

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

Reference Method: SM 4500 F-C-2011
Run ID: A99986
Included Lab Sample IDs: 2182474, 2182475, 2182480

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					5.41	
EPA 300.0 Rev. 2.1	Chloride	100	101	100		1.12	
	Sulfate	99.1	98.8				
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	98.9	98.7			0.216
	Ammonia-N	98.9	97.2	98.5			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.2					4.02
EPA 353.2 Rev. 2.0	NO2NO3-N	101	98.2	98.2			0.0
	NO2NO3-N	100	100	100			0.499
EPA 365.1 Rev. 2.0	Total-P	101	103	104			0.709
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	95.9	95.5			0.418
SM 2120 B-2011	Color (true)	101				0.342	
SM 2320 B-2011	Total Alkalinity	99.8				0.339	
SM 2540 C-2011	TDS					7.84	
	TDS					4.37	
SM 4500 F-C-2011	Fluoride	97.4	100	99.6			0.472
SM 5310 B-2011	Organic Carbon	95.5	95.4	96.0			0.443

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2182474, 2182475, 2182480
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2182474, 2182475, 2182480
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2182474, 2182475, 2182480
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2182476, 2182477, 2182481
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2182476, 2182477, 2182481
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2182476, 2182477, 2182481
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2182476, 2182477, 2182481
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2182478, 2182479, 2182482
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2182474, 2182475, 2182480
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2182474, 2182475, 2182480
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2182474, 2182475, 2182480
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2182474, 2182475, 2182480
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2182474, 2182475, 2182480
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2182476, 2182477, 2182481

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/10/2020			07/10/2020 15:21	Yen Ta	2182474, 2182475, 2182480
EPA 300.0 Rev. 2.1	07/10/2020			07/17/2020 13:57	Julia Storbeck	2182474
	07/10/2020			07/17/2020 14:09	Julia Storbeck	2182475
	07/10/2020			07/17/2020 14:21	Julia Storbeck	2182480
EPA 350.1 Rev. 2.0	07/10/2020			07/12/2020 18:24	Ping Hua	2182481
	07/10/2020			07/12/2020 18:37	Ping Hua	2182476
	07/10/2020			07/12/2020 18:39	Ping Hua	2182477
EPA 351.2 Rev. 2.0	07/10/2020	07/15/2020 10:50	Jhamieka S. Greenwood	07/16/2020 12:42	Jhamieka S. Greenwood	2182476
	07/10/2020	07/15/2020 10:50	Jhamieka S. Greenwood	07/16/2020 12:43	Jhamieka S. Greenwood	2182477
	07/10/2020	07/15/2020 10:50	Jhamieka S. Greenwood	07/16/2020 12:45	Jhamieka S. Greenwood	2182481
EPA 353.2 Rev. 2.0	07/10/2020			07/16/2020 09:27	Beverly Y. Sanders	2182476
	07/10/2020			07/16/2020 09:28	Beverly Y. Sanders	2182477
	07/10/2020			07/16/2020 09:41	Beverly Y. Sanders	2182481
EPA 365.1 Rev. 2.0	07/10/2020	07/14/2020 12:19	Yen Ta	07/15/2020 11:05	Benjamin T. Nordmann	2182476
	07/10/2020	07/14/2020 12:19	Yen Ta	07/15/2020 11:06	Benjamin T. Nordmann	2182477
	07/10/2020	07/14/2020 12:19	Yen Ta	07/16/2020 07:58	Lipi Saha	2182481
EPA 365.1 Rev. 2.0 dissolved	07/10/2020			07/10/2020 23:02	Jhamieka S. Greenwood	2182482
	07/10/2020			07/10/2020 23:14	Jhamieka S. Greenwood	2182478
	07/10/2020			07/10/2020 23:54	Jhamieka S. Greenwood	2182479
SM 2120 B-2011	07/10/2020			07/10/2020 16:20	Blanca Fach	2182474, 2182475
	07/10/2020			07/10/2020 16:21	Blanca Fach	2182480
SM 2320 B-2011	07/10/2020			07/14/2020 10:31	Dale L. Simmons	2182474
	07/10/2020			07/14/2020 10:45	Dale L. Simmons	2182475
	07/10/2020			07/14/2020 10:53	Dale L. Simmons	2182480
SM 2540 C-2011	07/10/2020			07/15/2020 15:29	Yijie Li	2182474, 2182475, 2182480
SM 2540 D-2011	07/10/2020			07/15/2020 15:29	Yijie Li	2182474, 2182475, 2182480
SM 4500 F-C-2011	07/10/2020			07/21/2020 01:19	Samantha Davila	2182474
	07/10/2020			07/21/2020 01:25	Samantha Davila	2182475
	07/10/2020			07/21/2020 01:30	Samantha Davila	2182480
SM 5310 B-2011	07/10/2020			07/13/2020 14:44	David Boose	2182477
	07/10/2020			07/13/2020 17:08	David Boose	2182476
	07/10/2020			07/13/2020 17:22	David Boose	2182481