

Chemical Analysis Report

CEN-DIST-2020-06-16-01

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

Event Description: **Asher / Florida / Blank**
Request ID: **RQ-2020-06-15-59**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Kalina Warren

For additional information please contact
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Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 02-JUL-2020 11:00



NON-CONFORMANCE REPORT INCLUDED

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: Lake Florida @ Center of Lake

Collection Date/Time: 06/15/2020 12:10

Field ID: G2CE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2176892	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P383294	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P383436	
		Sulfate	6.2		mg SO4/L	P383438	
	SM 2120 B-2011	Color (true)	58		PCU	P383300	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P383401	
	SM 2540 C-2011	TDS	106	A	mg/L	P383661	
	SM 2540 D-2011	TSS	4	IA	mg/L	P383597	
	SM 4500 F-C-2011	Fluoride	0.095	I	mg F/L	P383404	
2176894	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P383466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P383396	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383315	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P383348	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P383365	
2176896	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383297	

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: Asher Lake @ Center

Collection Date/Time: 06/15/2020 11:00

Field ID: G2CE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2176893	EPA 180.1 Rev. 2.0	Turbidity	16	A	NTU	P383294	
	EPA 300.0 Rev. 2.1	Chloride	24		mg Cl/L	P383436	
		Sulfate	7.5		mg SO4/L	P383438	
	SM 2120 B-2011	Color (true)	31	A	PCU	P383303	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P383401	
	SM 2540 C-2011	TDS	92		mg/L	P383662	
	SM 2540 D-2011	TSS	6	I	mg/L	P383598	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383404	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P383466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P383360	
2176895	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383315	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P383348	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P383365	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P383297	

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: FB_06152020

Collection Date/Time: 06/15/2020 11:18

Field ID: FB_06152020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2176898	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P383294	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P383436	
		Sulfate	0.20	U	mg SO4/L	P383438	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P383300	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P383401	
	SM 2540 C-2011	TDS	15	U	mg/L	P383661	
	SM 2540 D-2011	TSS	2	U	mg/L	P383597	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383404	
2176899	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	UY	mg N/L	P383466	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	UY	mg N/L	P383360	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P383315	
	EPA 365.1 Rev. 2.0	Total-P	0.002	UY	mg P/L	P383504	
	SM 5310 B-2011	Organic Carbon	0.50	UY	mg C/L	P383365	
2176900	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383297	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-2011: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Non-Conformance Report

NCR ID: 8306

Event(s)

CEN-DIST-2020-06-16-01

Job(s)

TLH-2020-06-16-01

Sample(s)

2176899

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: H2SO4 Lot# 9203100 | Expiration Date: 07/22/2020
Sample preserved in the laboratory with sulfuric acid.
Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 6/30/2020

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383294

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383436

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383438

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383466

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383360

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383396

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383315

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383348

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

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: P383297

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

Reference Method: SM 2120 B-2011
Batch ID: P383300

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P383303

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383401

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

Reference Method: SM 2540 C-2011
Batch ID: P383661

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P383662

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383597

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383598

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383404

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: P383365

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: P383436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P383438

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P383466

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P383360

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P383396

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: P383315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383348

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P383504

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: P383297

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P383300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P383303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176855	Chloride	96.4		P	90 - 110
2176919	Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383438

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176855	Sulfate	97.6		P	90 - 110
2176919	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176862	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176970	Kjeldahl Nitrogen	94.0	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383396

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176862	Kjeldahl Nitrogen	98.6	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176856	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176862	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177382	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383297

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176860	O-Phosphate-P	94.8	96.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P383404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176956	Fluoride	101	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176907	Organic Carbon	103	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176893	Turbidity	6.29	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176855	Chloride	1.99	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383438

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176855	Sulfate	2.21	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176862	Ammonia-N	0.184	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176970	Kjeldahl Nitrogen	3.46	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176862	Kjeldahl Nitrogen	0.601	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176856	NO2NO3-N	0.189	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176862	Total-P	0.974	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177382	Total-P	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383297

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176860	O-Phosphate-P	1.42	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176858	Color (true)	1.48	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176893	Color (true)	0.315	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176956	Total Alkalinity	0.182	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383661

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176892	TDS	0.939	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P383662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176867	TDS	9.52	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176956	Fluoride	0.502	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P383365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176907	Organic Carbon	0.425	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: A99351

Included Lab Sample IDs: 2176892, 2176893, 2176898

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: A99352

Included Lab Sample IDs: 2176896, 2176897, 2176900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.0	98.6	P/P	90 - 110
O-Phosphate-P	98.6	101	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A99353

Included Lab Sample IDs: 2176892, 2176893, 2176898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115
Color (true)	104	105	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99370

Included Lab Sample IDs: 2176894, 2176895, 2176899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99393

Included Lab Sample IDs: 2176894, 2176895, 2176899

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99401

Included Lab Sample IDs: 2176892, 2176893, 2176898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.4	97.1	P/P	90 - 110
Sulfate	98.2	97.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99406

Included Lab Sample IDs: 2176892, 2176893, 2176898

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A99406

Included Lab Sample IDs: 2176892, 2176893, 2176898

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99420

Included Lab Sample IDs: 2176894, 2176895, 2176899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	98.0	P/P	90 - 110
Kjeldahl Nitrogen	98.0	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99434

Included Lab Sample IDs: 2176894, 2176895, 2176899

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99436

Included Lab Sample IDs: 2176894, 2176895

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99483

Included Lab Sample IDs: 2176899

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	94.8	93.2	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				6.29	
EPA 300.0 Rev. 2.1	Chloride	98.1	96.4	99.8	1.99	
	Sulfate	99.5	97.6	99.5	2.21	
EPA 350.1 Rev. 2.0	Ammonia-N	99.9	101	100		0.184
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	94.0	100		3.46
	Kjeldahl Nitrogen	101	98.6	97.9		0.601
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	97.2			0.189
EPA 365.1 Rev. 2.0	Total-P	106	106	107		0.974
	Total-P	104	104	102		1.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.7	94.8	96.3		1.42
SM 2120 B-2011	Color (true)	103			1.48	
	Color (true)	104			0.315	
SM 2320 B-2011	Total Alkalinity	102			0.182	
SM 2540 C-2011	TDS				0.939	
	TDS				9.52	
SM 4500 F-C-2011	Fluoride	100	101	101		0.502
SM 5310 B-2011	Organic Carbon	102	103	102		0.425

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2176892, 2176893, 2176898
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2176892, 2176893, 2176898
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2176892, 2176893, 2176898
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2176894, 2176895, 2176899
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2176894, 2176895, 2176899
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2176894, 2176895, 2176899
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2176894, 2176895, 2176899
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2176896, 2176897, 2176900
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2176892, 2176893, 2176898
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2176892, 2176893, 2176898
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2176892, 2176893, 2176898
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2176892, 2176893, 2176898
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2176892, 2176893, 2176898
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2176894, 2176895, 2176899

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/16/2020			06/16/2020 15:55	Yen Ta	2176892, 2176893, 2176898
EPA 300.0 Rev. 2.1	06/16/2020			06/18/2020 15:06	Elliott Rodriguez	2176892
	06/16/2020			06/18/2020 15:19	Elliott Rodriguez	2176893
	06/16/2020			06/18/2020 15:32	Elliott Rodriguez	2176898
EPA 350.1 Rev. 2.0	06/16/2020			06/20/2020 11:07	Ping Hua	2176899
	06/16/2020			06/20/2020 11:20	Ping Hua	2176894
	06/16/2020			06/20/2020 11:22	Ping Hua	2176895
EPA 351.2 Rev. 2.0	06/16/2020	06/18/2020 09:50	Sima Feizi	06/19/2020 10:16	Jhamieka S. Greenwood	2176894
	06/16/2020	06/18/2020 11:00	Sima Feizi	06/19/2020 10:32	Jhamieka S. Greenwood	2176895
	06/16/2020	06/18/2020 11:00	Sima Feizi	06/19/2020 10:34	Jhamieka S. Greenwood	2176899
EPA 353.2 Rev. 2.0	06/16/2020			06/17/2020 08:21	Beverly Y. Sanders	2176894
	06/16/2020			06/17/2020 08:22	Beverly Y. Sanders	2176895
	06/16/2020			06/17/2020 08:23	Beverly Y. Sanders	2176899
EPA 365.1 Rev. 2.0	06/16/2020	06/17/2020 12:24	Yen Ta	06/19/2020 10:09	Lipi Saha	2176894
	06/16/2020	06/17/2020 12:24	Yen Ta	06/19/2020 10:10	Lipi Saha	2176895
	06/16/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:36	Lipi Saha	2176899
EPA 365.1 Rev. 2.0 dissolved	06/16/2020			06/16/2020 15:54	Jhamieka S. Greenwood	2176896
	06/16/2020			06/16/2020 15:59	Jhamieka S. Greenwood	2176900
	06/16/2020			06/16/2020 16:00	Jhamieka S. Greenwood	2176897
SM 2120 B-2011	06/16/2020			06/16/2020 16:48	Benjamin T. Nordmann	2176892
	06/16/2020			06/16/2020 16:49	Benjamin T. Nordmann	2176898
	06/16/2020			06/16/2020 17:17	Benjamin T. Nordmann	2176893
SM 2320 B-2011	06/16/2020			06/17/2020 19:37	Dale L. Simmons	2176892
	06/16/2020			06/17/2020 19:50	Dale L. Simmons	2176893
	06/16/2020			06/17/2020 19:58	Dale L. Simmons	2176898
SM 2540 C-2011	06/16/2020			06/18/2020 14:01	Yijie Li	2176892, 2176893, 2176898
SM 2540 D-2011	06/16/2020			06/18/2020 14:01	Yijie Li	2176892, 2176893, 2176898
SM 4500 F-C-2011	06/16/2020			06/17/2020 19:37	Dale L. Simmons	2176892
	06/16/2020			06/17/2020 19:50	Dale L. Simmons	2176893
	06/16/2020			06/17/2020 19:58	Dale L. Simmons	2176898
SM 5310 B-2011	06/16/2020			06/17/2020 16:46	David Boose	2176894
	06/16/2020			06/17/2020 16:58	David Boose	2176895
	06/16/2020			06/17/2020 17:11	David Boose	2176899