

Chemical Analysis Report

NE-DIST-2020-12-15-02

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

Event Description: **Interlachen makeup**
Request ID: **RQ-2020-12-14-53**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 06-JAN-2021 10:54

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Hardesty Lake Center

Collection Date/Time: 12/14/2020 11:05

Field ID: G1NE0869

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213325	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P391266	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P391844	
		Sulfate	1.2		mg SO4/L	P391847	
	SM 2120 B-2011	Color (true)	170		PCU	P391194	
	SM 2320 B-2011	Total Alkalinity	2.3	I	mg CaCO3/L	P391317	
	SM 2540 C-2011	TDS	46		mg/L	P391664	
	SM 2540 D-2011	TSS	2	I	mg/L	P391638	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P391320	
2213327	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P391489	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P391812	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.067		mg N/L	P391333	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P391444	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P391417	
2213329	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P391224	

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: 12/14/2020 11:10

Field ID: FB 12142020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213331	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P391266	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P391844	
		Sulfate	0.20	U	mg SO4/L	P391847	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P391194	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P391317	
	SM 2540 C-2011	TDS	15	U	mg/L	P391662	
	SM 2540 D-2011	TSS	2	U	mg/L	P391636	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P391320	
2213332	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P391490	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P391812	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P391333	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P391444	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P391417	
2213333	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P391224	

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: Gillis Pond Center

Collection Date/Time: 12/14/2020 12:10

Field ID: G1NE0863

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2213326	EPA 180.1 Rev. 2.0	Turbidity	0.75		NTU	P391266	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P391844	
		Sulfate	3.4		mg SO4/L	P391847	
	SM 2120 B-2011	Color (true)	24	A	PCU	P391195	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P391317	
	SM 2540 C-2011	TDS	28		mg/L	P391664	
	SM 2540 D-2011	TSS	2	I	mg/L	P391638	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P391320	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.090		mg N/L	P391490	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P391812	
2213328	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P391333	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P391444	
	SM 5310 B-2011	Organic Carbon	4.5		mg C/L	P391417	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P391228	
2213330	EPA 365.1 Rev. 2.0 dissolved						

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: P391266

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391844

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391847

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391489

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391490

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391812

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391333

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391444

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391224

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391228

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

Reference Method: SM 2120 B-2011
Batch ID: P391194

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P391195

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P391317

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

Reference Method: SM 2540 C-2011
Batch ID: P391662

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P391664

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P391636

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P391638

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P391320

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: P391417

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: P391844

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391847

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391490

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391812

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391333

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391444

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391224

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391228

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P391194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P391195

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

Reference Method: SM 2320 B-2011
Batch ID: P391317

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

Reference Method: SM 4500 F-C-2011
Batch ID: P391320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391844

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213316	Chloride	100		P	90 - 110
2213645	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213316	Sulfate	101		P	90 - 110
2213645	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213318	Ammonia-N	97.6	96.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213650	Ammonia-N	98.0	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391812

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2215369	Kjeldahl Nitrogen	100	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213300	NO2NO3-N	99.6	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213327	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213250	O-Phosphate-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391228

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213330	O-Phosphate-P	102	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P391320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213233	Fluoride	97.3	97.3	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213328	Organic Carbon	96.4	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P391266

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213365	Turbidity	1.29	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391844

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213316	Chloride	0.279	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213316	Sulfate	0.101	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213318	Ammonia-N	1.45	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213650	Ammonia-N	0.204	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391812

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2215369	Kjeldahl Nitrogen	5.44	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213300	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213327	Total-P	0.0434	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213250	O-Phosphate-P	0.669	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213330	O-Phosphate-P	0.196	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P391194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213283	Color (true)	0.599	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P391195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213326	Color (true)	0.163	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P391317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213233	Total Alkalinity	1.87	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P391662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2212989	TDS	3.86	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P391664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213172	TDS	2.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P391320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213233	Fluoride	0.0	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P391417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213328	Organic Carbon	1.23	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A102597

Included Lab Sample IDs: 2213325, 2213326, 2213331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102610

Included Lab Sample IDs: 2213329, 2213330, 2213333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.9	P/P	90 - 110
O-Phosphate-P	98.9	99.4	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102618

Included Lab Sample IDs: 2213325, 2213326, 2213331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	104	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A102634

Included Lab Sample IDs: 2213325, 2213326, 2213331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102634

Included Lab Sample IDs: 2213325, 2213326, 2213331

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: A102638

Included Lab Sample IDs: 2213327, 2213328, 2213332

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

Reference Method: SM 5310 B-2011

Run ID: A102665

Included Lab Sample IDs: 2213327, 2213328, 2213332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	97.2	P/P	90 - 110
Organic Carbon	97.2	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102686

Included Lab Sample IDs: 2213327, 2213328, 2213332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	99.2	P/P	90 - 110
Ammonia-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102705

Included Lab Sample IDs: 2213327, 2213328, 2213332

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102826

Included Lab Sample IDs: 2213325, 2213326, 2213331

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	101	P/P	90 - 110
Sulfate	103	103	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				1.29	
EPA 300.0 Rev. 2.1	Chloride	100	100	103	0.279	
	Sulfate	102	101	103	0.101	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	97.6	96.0		1.45
	Ammonia-N	98.4	98.0	97.8		0.204
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	100	109		5.44
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	99.6	99.6		0.0
EPA 365.1 Rev. 2.0	Total-P	99.1	104	104		0.0434
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	104	105		0.669
	O-Phosphate-P	100	102	102		0.196
SM 2120 B-2011	Color (true)	100			0.599	
	Color (true)	102			0.163	
SM 2320 B-2011	Total Alkalinity	102			1.87	
SM 2540 C-2011	TDS				3.86	
	TDS				2.90	
SM 4500 F-C-2011	Fluoride	97.8	97.3	97.3		0.0
SM 5310 B-2011	Organic Carbon	95.2	96.4	95.0		1.23

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2213325, 2213326, 2213331
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2213325, 2213326, 2213331
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2213325, 2213326, 2213331
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2213327, 2213328, 2213332
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2213327, 2213328, 2213332
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2213327, 2213328, 2213332
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2213327, 2213328, 2213332
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2213329, 2213330, 2213333
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2213325, 2213326, 2213331
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2213325, 2213326, 2213331
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2213325, 2213326, 2213331
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2213325, 2213326, 2213331
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2213325, 2213326, 2213331
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2213327, 2213328, 2213332

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	12/15/2020			12/15/2020 17:13	Yen Ta	2213325, 2213326, 2213331
EPA 300.0 Rev. 2.1	12/15/2020			12/29/2020 18:45	Lipi Saha	2213325
	12/15/2020			12/29/2020 18:57	Lipi Saha	2213326
	12/15/2020			12/29/2020 19:09	Lipi Saha	2213331
EPA 350.1 Rev. 2.0	12/15/2020			12/20/2020 18:05	Ping Hua	2213327
	12/15/2020			12/20/2020 19:13	Ping Hua	2213328
	12/15/2020			12/20/2020 19:16	Ping Hua	2213332
EPA 351.2 Rev. 2.0	12/15/2020	12/29/2020 10:24	Yen Ta	12/30/2020 18:36	Virginia P. Brown	2213327
	12/15/2020	12/29/2020 10:24	Yen Ta	12/30/2020 18:38	Virginia P. Brown	2213328
	12/15/2020	12/29/2020 10:24	Yen Ta	12/30/2020 18:40	Virginia P. Brown	2213332
EPA 353.2 Rev. 2.0	12/15/2020			12/17/2020 09:57	Beverly Y. Sanders	2213327
	12/15/2020			12/17/2020 09:58	Beverly Y. Sanders	2213328
	12/15/2020			12/17/2020 10:00	Beverly Y. Sanders	2213332
EPA 365.1 Rev. 2.0	12/15/2020	12/18/2020 13:00	Yen Ta	12/21/2020 15:59	Shengyu Wang	2213327
	12/15/2020	12/18/2020 13:00	Yen Ta	12/21/2020 16:00	Shengyu Wang	2213328
	12/15/2020	12/18/2020 13:00	Yen Ta	12/21/2020 16:01	Shengyu Wang	2213332
EPA 365.1 Rev. 2.0 dissolved	12/15/2020			12/15/2020 16:44	Blanca Fach	2213329
	12/15/2020			12/15/2020 16:53	Blanca Fach	2213333
	12/15/2020			12/15/2020 16:56	Blanca Fach	2213330
SM 2120 B-2011	12/15/2020			12/15/2020 17:41	Julia Storbeck	2213331
	12/15/2020			12/15/2020 17:46	Julia Storbeck	2213326
	12/15/2020			12/15/2020 17:50	Julia Storbeck	2213325
SM 2320 B-2011	12/15/2020			12/16/2020 20:31	Dale L. Simmons	2213325
	12/15/2020			12/16/2020 20:38	Dale L. Simmons	2213326
	12/15/2020			12/16/2020 20:48	Dale L. Simmons	2213331
SM 2540 C-2011	12/15/2020			12/18/2020 15:11	Yijie Li	2213325, 2213326, 2213331
SM 2540 D-2011	12/15/2020			12/18/2020 15:11	Yijie Li	2213325, 2213326, 2213331
SM 4500 F-C-2011	12/15/2020			12/16/2020 20:31	Dale L. Simmons	2213325
	12/15/2020			12/16/2020 20:38	Dale L. Simmons	2213326
	12/15/2020			12/16/2020 20:48	Dale L. Simmons	2213331
SM 5310 B-2011	12/15/2020			12/17/2020 04:42	Touraj Touran	2213328
	12/15/2020			12/17/2020 06:22	Touraj Touran	2213327
	12/15/2020			12/17/2020 07:02	Touraj Touran	2213332