Chemical Analysis Report

CEN-DIST-2020-09-11-01

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

Event Description: **Three Forks / Sawgrass Drain / Wolf Creek**
Request ID: **RQ-2020-09-07-43**
Customer: **CEN-DIST**
Project ID: **SMP**

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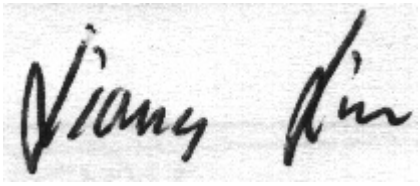
Date Certified: 30-SEP-2020 11:28



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: Sjr at Inlet to Little Lake Sawgrass **Collection Date/Time: 09/10/2020 11:41**

Field ID: G3CE0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2195501	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P387276	
	EPA 300.0 Rev. 2.1	Chloride	40	A	mg Cl/L	P387418	
		Sulfate	4.6	A	mg SO4/L	P387420	
	SM 2120 B-2011	Color (true)	380		PCU	P387286	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P387363	
	SM 2540 C-2011	TDS	202		mg/L	P387622	
	SM 2540 D-2011	TSS	2	I	mg/L	P387626	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P387365	
2195502	EPA 350.1 Rev. 2.0	Ammonia-N	0.044		mg N/L	P387305	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P387459	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P387338	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P387673	
	SM 5310 B-2011	Organic Carbon	36		mg C/L	P387425	
2195503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P387282	

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: Sjr Upstream of Lake Hellen Blazes **Collection Date/Time: 09/10/2020 11:06**

Field ID: G3CE0018 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2195498	EPA 180.1 Rev. 2.0	Turbidity	2.1		NTU	P387276	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P387417	
		Sulfate	7.4		mg SO4/L	P387419	
	SM 2120 B-2011	Color (true)	390		PCU	P387286	
	SM 2320 B-2011	Total Alkalinity	62		mg CaCO3/L	P387363	
	SM 2540 C-2011	TDS	299	A	mg/L	P387622	
	SM 2540 D-2011	TSS	4	I A	mg/L	P387626	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P387365	
2195499	EPA 350.1 Rev. 2.0	Ammonia-N	0.14		mg N/L	P387310	MS
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.7		mg N/L	P387459	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P387338	
	EPA 365.1 Rev. 2.0	Total-P	0.083		mg P/L	P387673	
	SM 5310 B-2011	Organic Carbon	43		mg C/L	P387425	
2195500	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.039		mg P/L	P387282	

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: P387276

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387418

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387420

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387305

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387310

Component	Result	Code	Units
Ammonia-N	0.002	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 353.2 Rev. 2.0
Batch ID: P387338

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387673

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387282

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

Reference Method: SM 2120 B-2011
Batch ID: P387286

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P387363

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

Reference Method: SM 2540 C-2011
Batch ID: P387622

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P387626

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P387365

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387425

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: P387417

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387310

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	92.0		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 353.2 Rev. 2.0
Batch ID: P387338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387673

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387282

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

Reference Method: SM 2120 B-2011
Batch ID: P387286

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.4		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P387363

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P387365

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387425

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195220	Chloride	95.8		P	90 - 110
2195337	Chloride	92.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195501	Chloride	93.1		P	90 - 110
2195725	Chloride	96.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195220	Sulfate	95.3		P	90 - 110
2195337	Sulfate	93.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195501	Sulfate	95.1		P	90 - 110
2195725	Sulfate	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195518	Ammonia-N	96.9	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387310

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195742	Ammonia-N	90.7	89.0	P/F	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 353.2 Rev. 2.0
Batch ID: P387338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195457	NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195398	Total-P	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387282

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195513	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P387365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195676	Fluoride	101	99.9	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2195512	Organic Carbon	101	105	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195700	Turbidity	3.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195337	Chloride	0.294	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195501	Chloride	0.0871	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195337	Sulfate	0.431	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195501	Sulfate	0.114	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195518	Ammonia-N	0.357	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387310

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195742	Ammonia-N	1.76	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 353.2 Rev. 2.0
Batch ID: P387338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195457	NO2NO3-N	0.299	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195398	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195513	O-Phosphate-P	0.295	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P387286

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195661	Color (true)	1.65	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P387363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195676	Total Alkalinity	0.703	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P387622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195498	TDS	6.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P387365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195676	Fluoride	0.967	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P387425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2195512	Organic Carbon	3.46	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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: A100939
Included Lab Sample IDs: 2195498, 2195501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A100940
Included Lab Sample IDs: 2195500, 2195503

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	96.8	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A100942
Included Lab Sample IDs: 2195498, 2195501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A100947
Included Lab Sample IDs: 2195502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A100948
Included Lab Sample IDs: 2195499

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	94.0	94.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A100959
Included Lab Sample IDs: 2195499, 2195502

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

Reference Method: SM 2320 B-2011
Run ID: A100975
Included Lab Sample IDs: 2195498, 2195501

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A100975
Included Lab Sample IDs: 2195498, 2195501

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A100980
Included Lab Sample IDs: 2195498, 2195501

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

Reference Method: SM 5310 B-2011
Run ID: A101004
Included Lab Sample IDs: 2195499, 2195502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A101057
Included Lab Sample IDs: 2195499, 2195502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	95.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101161
Included Lab Sample IDs: 2195499, 2195502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	85 - 115

* 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					3.59	
EPA 300.0 Rev. 2.1	Chloride	94.7	92.0	95.8		0.294	
	Chloride	96.3	93.1	96.2		0.0871	
	Sulfate	94.5	93.4	95.3		0.431	
	Sulfate	96.2	95.1	94.8		0.114	
EPA 350.1 Rev. 2.0	Ammonia-N	96.1	96.9	96.5			0.357
	Ammonia-N	92.0	90.7	89.0			1.76
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	90.0	90.5			0.281
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	98.0	97.5			0.299
EPA 365.1 Rev. 2.0	Total-P	107	106	108			1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	102	102			0.295
SM 2120 B-2011	Color (true)	95.4				1.65	
SM 2320 B-2011	Total Alkalinity	101				0.703	
SM 2540 C-2011	TDS					6.02	
SM 4500 F-C-2011	Fluoride	102	101	99.9			0.967
SM 5310 B-2011	Organic Carbon	99.0	101	105			3.46

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2195498, 2195501
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2195498, 2195501
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2195498, 2195501
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2195499, 2195502
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2195499, 2195502
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2195499, 2195502
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2195499, 2195502
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2195500, 2195503
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2195498, 2195501
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2195498, 2195501
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2195498, 2195501
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2195498, 2195501
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2195498, 2195501
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2195499, 2195502

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	09/11/2020			09/11/2020 14:50	Yen Ta	2195498, 2195501
EPA 300.0 Rev. 2.1	09/11/2020			09/15/2020 21:16	Lipi Saha	2195498
	09/11/2020			09/15/2020 22:35	Lipi Saha	2195501
EPA 350.1 Rev. 2.0	09/11/2020			09/13/2020 13:32	Ping Hua	2195502
	09/11/2020			09/13/2020 16:58	Ping Hua	2195499
EPA 351.2 Rev. 2.0	09/11/2020	09/16/2020 12:40	David Boose	09/17/2020 11:25	Virginia P. Brown	2195499
	09/11/2020	09/16/2020 12:40	David Boose	09/17/2020 11:26	Virginia P. Brown	2195502
EPA 353.2 Rev. 2.0	09/11/2020			09/14/2020 10:21	Beverly Y. Sanders	2195499
	09/11/2020			09/14/2020 10:22	Beverly Y. Sanders	2195502
EPA 365.1 Rev. 2.0	09/11/2020	09/22/2020 11:37	Yen Ta	09/23/2020 15:33	Benjamin T. Nordmann	2195499
	09/11/2020	09/22/2020 11:37	Yen Ta	09/23/2020 15:34	Benjamin T. Nordmann	2195502
EPA 365.1 Rev. 2.0 dissolved	09/11/2020			09/11/2020 15:36	Samantha Davila	2195500
	09/11/2020			09/11/2020 15:37	Samantha Davila	2195503
SM 2120 B-2011	09/11/2020			09/11/2020 16:30	Madeline Gruver	2195498
	09/11/2020			09/11/2020 16:31	Madeline Gruver	2195501
SM 2320 B-2011	09/11/2020			09/14/2020 19:25	Dale L. Simmons	2195498
	09/11/2020			09/14/2020 19:37	Dale L. Simmons	2195501
SM 2540 C-2011	09/11/2020			09/14/2020 15:06	Yijie Li	2195498, 2195501
SM 2540 D-2011	09/11/2020			09/14/2020 15:06	Yijie Li	2195498, 2195501
SM 4500 F-C-2011	09/11/2020			09/14/2020 19:25	Dale L. Simmons	2195498
	09/11/2020			09/14/2020 19:37	Dale L. Simmons	2195501
SM 5310 B-2011	09/11/2020			09/15/2020 17:45	David Boose	2195499
	09/11/2020			09/15/2020 18:00	David Boose	2195502