

Chemical Analysis Report

SE-DIST-2020-12-17-02

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

Event Description: **SMP- 3188B**
Request ID: **RQ-2020-12-14-58**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 08-JAN-2021 13:53

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue rectangular background.

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: Gore Branch @ 724

Collection Date/Time: 12/16/2020 13:00

Field ID: G4SE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2214392	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P391377	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P391845	
		Sulfate	2.2		mg SO4/L	P391848	
		Color (true)	150		PCU	P391433	
	SM 2320 B-2011	Total Alkalinity	76		mg CaCO3/L	P391499	
	SM 2540 C-2011	TDS	154		mg/L	P391868	
	SM 2540 D-2011	TSS	3	I	mg/L	P391766	
	SM 4500 F-C-2011	Fluoride	0.11		mg F/L	P391500	
2214393	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P391737	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P391714	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.080		mg N/L	P391513	
	EPA 365.1 Rev. 2.0	Total-P	0.063		mg P/L	P391532	
	SM 5310 B-2011	Organic Carbon	22		mg C/L	P391597	
2214394	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P391373	

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: P391377

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391848

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391737

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391714

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391513

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391373

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

Reference Method: SM 2120 B-2011
Batch ID: P391433

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P391499

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

Reference Method: SM 2540 C-2011
Batch ID: P391868

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P391766

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P391500

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P391597

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: P391845

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391848

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391714

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: P391513

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: P391532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391373

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

Reference Method: SM 2120 B-2011
Batch ID: P391433

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

Reference Method: SM 2320 B-2011
Batch ID: P391499

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P391500

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P391597

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213839	Chloride	102		P	90 - 110
2214346	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2213839	Sulfate	104		P	90 - 110
2214346	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214327	Ammonia-N	97.8	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214543	Kjeldahl Nitrogen	115	112	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391513

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214382	NO2NO3-N	98.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214257	Total-P	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391373

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214394	O-Phosphate-P	99.6	95.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P391500

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214498	Fluoride	96.7	97.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P391597

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2214344	Organic Carbon	96.8	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P391377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214381	Turbidity	2.12	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213839	Chloride	0.618	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P391848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2213839	Sulfate	0.349	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P391737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214327	Ammonia-N	0.219	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P391714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214543	Kjeldahl Nitrogen	1.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P391513

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214382	NO2NO3-N	0.588	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P391532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214257	Total-P	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P391373

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214394	O-Phosphate-P	2.84	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
 Batch ID: P391433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214313	Color (true)	0.326	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P391499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214498	Total Alkalinity	4.83	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P391868

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214378	TDS	1.48	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P391500

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214498	Fluoride	0.474	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P391597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2214344	Organic Carbon	2.43	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A102650

Included Lab Sample IDs: 2214394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	98.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A102651

Included Lab Sample IDs: 2214392

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

Reference Method: SM 2120 B-2011

Run ID: A102671

Included Lab Sample IDs: 2214392

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

Reference Method: SM 2320 B-2011

Run ID: A102688

Included Lab Sample IDs: 2214392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A102688

Included Lab Sample IDs: 2214392

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A102695

Included Lab Sample IDs: 2214393

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: A102717

Included Lab Sample IDs: 2214393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A102731

Included Lab Sample IDs: 2214393

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A102784

Included Lab Sample IDs: 2214393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.3	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A102804

Included Lab Sample IDs: 2214393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	95.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A102826

Included Lab Sample IDs: 2214392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					2.12	
EPA 300.0 Rev. 2.1	Chloride	102	102	103		0.618	
	Sulfate	104	104	103		0.349	
EPA 350.1 Rev. 2.0	Ammonia-N	95.6	97.8	98.2			0.219
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	115	112			1.88
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	98.0	99.0			0.588
EPA 365.1 Rev. 2.0	Total-P	102	100	102			1.43
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	99.6	95.7			2.84
SM 2120 B-2011	Color (true)	102				0.326	
SM 2320 B-2011	Total Alkalinity	104				4.83	
SM 2540 C-2011	TDS					1.48	
SM 4500 F-C-2011	Fluoride	97.3	96.7	97.2			0.474
SM 5310 B-2011	Organic Carbon	96.2	96.8	101			2.43

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2214392
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2214392
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2214392
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2214393
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2214393
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2214393
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2214393
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2214394
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2214392
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2214392
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2214392
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2214392
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2214392
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2214393

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	12/17/2020			12/17/2020 15:51	Yen Ta	2214392
EPA 300.0 Rev. 2.1	12/17/2020			12/30/2020 04:12	Lipi Saha	2214392
EPA 350.1 Rev. 2.0	12/17/2020			12/27/2020 17:32	Ping Hua	2214393
EPA 351.2 Rev. 2.0	12/17/2020	12/23/2020 15:00	David Boose	12/28/2020 19:09	Julia Storbeck	2214393
EPA 353.2 Rev. 2.0	12/17/2020			12/21/2020 09:55	Beverly Y. Sanders	2214393
EPA 365.1 Rev. 2.0	12/17/2020	12/21/2020 12:50	Yen Ta	12/22/2020 14:48	Benjamin T. Nordmann	2214393
EPA 365.1 Rev. 2.0 dissolved	12/17/2020			12/17/2020 15:22	Blanca Fach	2214394
SM 2120 B-2011	12/17/2020			12/17/2020 16:18	Benjamin T. Nordmann	2214392
SM 2320 B-2011	12/17/2020			12/19/2020 00:41	Dale L. Simmons	2214392
SM 2540 C-2011	12/17/2020			12/22/2020 13:52	Yijie Li	2214392
SM 2540 D-2011	12/17/2020			12/22/2020 13:52	Yijie Li	2214392
SM 4500 F-C-2011	12/17/2020			12/19/2020 00:41	Dale L. Simmons	2214392
SM 5310 B-2011	12/17/2020			12/21/2020 19:59	Madeline Gruver	2214393