

Chemical Analysis Report

NE-DIST-2021-02-04-01

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

Event Description: **Gainesville 2021**
Request ID: **RQ-2021-01-25-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 24-FEB-2021 15:26

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: Calf Creek 0.5mi Upstream SE27th

Collection Date/Time: 02/03/2021 11:30

Field ID: G1NE0934

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2223573	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P393390	
	EPA 300.0 Rev. 2.1	Chloride	38		mg Cl/L	P393612	
		Sulfate	23		mg SO4/L	P393615	
	SM 2120 B-2011	Color (true)	45	A	PCU	P393393	
	SM 2320 B-2011	Total Alkalinity	110		mg CaCO3/L	P393639	
	SM 2540 C-2011	TDS	248		mg/L	P393853	
	SM 2540 D-2011	TSS	2	UA	mg/L	P393846	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P393645	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.017		mg N/L	P393576	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.32		mg N/L	P393662	
2223574	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P393412	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P393529	
	SM 5310 B-2011	Organic Carbon	9.2		mg C/L	P393622	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.038		mg P/L	P393384	
	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: P393390

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393612

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393615

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393576

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393662

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393412

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393529

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393384

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

Reference Method: SM 2120 B-2011
Batch ID: P393393

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P393639

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

Reference Method: SM 2540 C-2011
Batch ID: P393853

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P393846

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P393622

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: P393612

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393615

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393576

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393662

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393412

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393529

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: P393384

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.7		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P393393

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

Reference Method: SM 2320 B-2011
Batch ID: P393639

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P393622

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223230	Chloride	99.7		P	90 - 110
2223554	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223230	Sulfate	99.3		P	90 - 110
2223554	Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223357	Ammonia-N	98.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393662

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223574	Kjeldahl Nitrogen	102	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223374	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223358	Total-P	98.6	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223385	O-Phosphate-P	97.2	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223691	Fluoride	98.0	96.5	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P393622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2223357	Organic Carbon	98.3	98.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223373	Turbidity	0.893	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223230	Chloride	1.02	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P393615

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223230	Sulfate	0.759	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P393576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223357	Ammonia-N	1.73	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393662

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223574	Kjeldahl Nitrogen	2.97	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223374	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223358	Total-P	3.84	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223385	O-Phosphate-P	2.54	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P393393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223573	Color (true)	0.847	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P393639

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223691	Total Alkalinity	1.65	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P393853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2222715	TDS	3.17	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P393645

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223691	Fluoride	0.953	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2223357	Organic Carbon	0.173	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: A103427

Included Lab Sample IDs: 2223575

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103428

Included Lab Sample IDs: 2223573

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

Reference Method: SM 2120 B-2011

Run ID: A103429

Included Lab Sample IDs: 2223573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103434

Included Lab Sample IDs: 2223574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103481

Included Lab Sample IDs: 2223573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.4	98.6	P/P	90 - 110
Sulfate	98.3	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103500

Included Lab Sample IDs: 2223574

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103521

Included Lab Sample IDs: 2223574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	99.4	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A103526

Included Lab Sample IDs: 2223574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.8	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103529

Included Lab Sample IDs: 2223573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	106	96.7	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103529

Included Lab Sample IDs: 2223573

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103564

Included Lab Sample IDs: 2223574

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	95.4	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				0.893	
EPA 300.0 Rev. 2.1	Chloride	99.4	99.7	96.9	1.02	
	Sulfate	101	99.3	97.7	0.759	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.5	101		1.73
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.5	102	98.2		2.97
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	100		0.0
EPA 365.1 Rev. 2.0	Total-P	102	98.6	103		3.84
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.7	97.2	99.7		2.54
SM 2120 B-2011	Color (true)	101			0.847	
SM 2320 B-2011	Total Alkalinity	101			1.65	
SM 2540 C-2011	TDS				3.17	
SM 4500 F-C-2011	Fluoride	97.6	98.0	96.5		0.953
SM 5310 B-2011	Organic Carbon	98.6	98.3	98.5		0.173

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2223573
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2223573
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2223573
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2223574
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2223574
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2223574
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2223574
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2223575
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2223573
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2223573
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2223573
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2223573
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2223573
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2223574

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	02/04/2021			02/04/2021 16:36	Julia Storbeck	2223573
EPA 300.0 Rev. 2.1	02/04/2021			02/09/2021 17:32	Lipi Saha	2223573
EPA 350.1 Rev. 2.0	02/04/2021			02/09/2021 15:30	Julia Storbeck	2223574
EPA 351.2 Rev. 2.0	02/04/2021	02/11/2021 12:20	Yen Ta	02/12/2021 14:59	Virginia P. Brown	2223574
EPA 353.2 Rev. 2.0	02/04/2021			02/05/2021 09:33	Beverly Y. Sanders	2223574
EPA 365.1 Rev. 2.0	02/04/2021	02/09/2021 13:50	Shengyu Wang	02/10/2021 12:19	Shengyu Wang	2223574
EPA 365.1 Rev. 2.0 dissolved	02/04/2021			02/04/2021 14:57	Blanca Fach	2223575
SM 2120 B-2011	02/04/2021			02/04/2021 16:22	Benjamin T. Nordmann	2223573
SM 2320 B-2011	02/04/2021			02/09/2021 12:59	Dale L. Simmons	2223573
SM 2540 C-2011	02/04/2021			02/05/2021 14:39	Yijie Li	2223573
SM 2540 D-2011	02/04/2021			02/05/2021 14:39	Yijie Li	2223573
SM 4500 F-C-2011	02/04/2021			02/09/2021 12:59	Dale L. Simmons	2223573
SM 5310 B-2011	02/04/2021			02/09/2021 01:44	Madeline Gruver	2223574