

Chemical Analysis Report

NE-DIST-2021-02-25-01

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

Event Description: **unnamed run 2021**

Request ID: **RQ-2021-02-22-15**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 19-MAR-2021 11:20



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: Unnamed Drain South Entrance

Collection Date/Time: 02/24/2021 11:05

Field ID: G5NE0591

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227409	EPA 180.1 Rev. 2.0	Turbidity	5.5		NTU	P394233	
	EPA 300.0 Rev. 2.1	Bromide	47		mg Br/L	P394335	
	SM 2320 B-2011	Total Alkalinity	91		mg CaCO3/L	P394521	
	SM 2540 D-2011	TSS	9	I	mg/L	P394533	
	SM 4500 F-C-2011	Fluoride	0.83		mg F/L	P394523	
2227410	EPA 350.1 Rev. 2.0	Ammonia-N	0.051		mg N/L	P394441	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P394264	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P394248	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P394368	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P394647	
2227411	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P394225	

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: P394233

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394441

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394248

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394368

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394225

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

Reference Method: SM 2320 B-2011
Batch ID: P394521

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

Reference Method: SM 2540 D-2011
Batch ID: P394533

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P394523

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P394647

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: P394335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394264

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394248

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394368

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: P394225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P394521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	93.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226337	Bromide	95.5	93.9	P/P	90 - 110
2226988	Bromide	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227518	Ammonia-N	97.2	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227288	Kjeldahl Nitrogen	107	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227288	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227358	Total-P	94.6	94.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227519	O-Phosphate-P	98.8	99.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P394523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227445	Fluoride	97.8	99.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P394647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226533	Organic Carbon	91.8	92.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394233

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227445	Turbidity	1.54	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226337	Bromide	1.65	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227518	Ammonia-N	0.187	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227288	Kjeldahl Nitrogen	2.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227288	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227358	Total-P	0.208	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227519	O-Phosphate-P	1.01	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227154	Total Alkalinity	0.620	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P394523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227445	Fluoride	0.921	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226533	Organic Carbon	0.742	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103734

Included Lab Sample IDs: 2227409

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103775

Included Lab Sample IDs: 2227411

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103778

Included Lab Sample IDs: 2227409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103790

Included Lab Sample IDs: 2227410

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103830

Included Lab Sample IDs: 2227410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103858

Included Lab Sample IDs: 2227410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103867

Included Lab Sample IDs: 2227410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	98.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A103903

Included Lab Sample IDs: 2227409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	93.6	91.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A103903

Included Lab Sample IDs: 2227409

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103961

Included Lab Sample IDs: 2227410

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.5	92.9	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					1.54	
EPA 300.0 Rev. 2.1	Bromide	96.0	95.5	93.9	95.7		1.65
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	97.2	97.0			0.187
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	107	110			2.16
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	103	102			0.487
EPA 365.1 Rev. 2.0	Total-P	104	94.6	94.4			0.208
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	98.8	99.8			1.01
SM 2320 B-2011	Total Alkalinity	93.3				0.620	
SM 4500 F-C-2011	Fluoride	97.0	97.8	99.4			0.921
SM 5310 B-2011	Organic Carbon	95.6	91.8	92.6			0.742

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2227409
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2227409
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2227410
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2227410
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2227410
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2227410
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2227411
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2227409
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2227409
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2227409
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2227410

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	02/25/2021			02/25/2021 15:03	Yen Ta	2227409
EPA 300.0 Rev. 2.1	02/25/2021			02/26/2021 19:21	Lipi Saha	2227409
EPA 350.1 Rev. 2.0	02/25/2021			03/03/2021 16:38	Ping Hua	2227410
EPA 351.2 Rev. 2.0	02/25/2021	02/26/2021 12:17	Yen Ta	03/01/2021 15:51	Virginia P. Brown	2227410
EPA 353.2 Rev. 2.0	02/25/2021			02/26/2021 09:52	Beverly Y. Sanders	2227410
EPA 365.1 Rev. 2.0	02/25/2021	03/02/2021 12:03	Shengyu Wang	03/03/2021 11:59	Shengyu Wang	2227410
EPA 365.1 Rev. 2.0 dissolved	02/25/2021			02/25/2021 14:57	Blanca Fach	2227411
SM 2320 B-2011	02/25/2021			03/04/2021 21:44	Dale L. Simmons	2227409
SM 2540 D-2011	02/25/2021			02/26/2021 14:36	Yijie Li	2227409
SM 4500 F-C-2011	02/25/2021			03/04/2021 18:50	Dale L. Simmons	2227409
SM 5310 B-2011	02/25/2021			03/09/2021 07:25	Madeline Gruver	2227410