Chemical Analysis Report

CEN-DIST-2022-06-07-02

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

Event Description: **Unnamed Branch and Groover**
Request ID: **RQ-2022-06-06-35**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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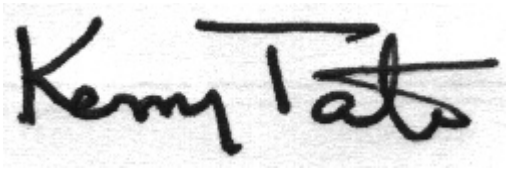
Date Certified: 29-JUN-2022 10:08



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: Groover Branch at Airport Road Bridge **Collection Date/Time: 06/06/2022 12:10**

Field ID: G5CE0040 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2332513	DEP SOP: NU-094-1	Color (true)**	85		PCU	P414836	
	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P414848	
	EPA 300.0 Rev. 2.1	Chloride	60		mg Cl/L	P415044	
		Sulfate	8.8		mg SO4/L	P415047	
	SM 2320 B-2011	Total Alkalinity	107		mg CaCO3/L	P415387	
	SM 2540 C-2011	TDS	257	A	mg/L	P415243	
	SM 2540 D-2011	TSS	3	I A	mg/L	P415246	
	SM 4500-F- C-2011	Fluoride	0.067	I	mg F/L	P415392	
2332514	EPA 350.1 Rev. 2.0	Ammonia-N	0.082		mg N/L	P415426	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P414870	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.16		mg N/L	P415660	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P414902	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P414935	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 350.1 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P414836

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414848

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415044

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415047

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414870

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415660

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414902

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

Reference Method: SM 2320 B-2011
Batch ID: P415387

Component	Result	Code	Units
Total Alkalinity	1.0	U	mg CaCO3/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P415243

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P415246

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415392

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P414935

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P414836

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414848

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415044

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415047

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415426

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414870

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415660

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: P414902

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

Reference Method: SM 2320 B-2011
Batch ID: P415387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P415392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P414935

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.1		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332651	Chloride	95.1		P	90 - 110
2332652	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332651	Sulfate	96.0		P	90 - 110
2332652	Sulfate	98.3		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332282	Kjeldahl Nitrogen	112	100	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332815	NO2NO3-N	96.3	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414902

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332368	Total-P	102	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P415392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2333399	Fluoride	99.7	99.7	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P414935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2332514	Organic Carbon	94.2	94.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P414836

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332568	Color (true)	0.158	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332331	Turbidity	1.74	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332651	Chloride	0.00975	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P415047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332651	Sulfate	0.256	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332333	Ammonia-N	1.28	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P414870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332282	Kjeldahl Nitrogen	9.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332815	NO2NO3-N	0.456	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P414902

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332368	Total-P	2.62	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P415387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333399	Total Alkalinity	0.0128	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P415243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332513	TDS	7.00	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P415392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2333399	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P414935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2332514	Organic Carbon	0.112	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A112651
Included Lab Sample IDs: 2332513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A112655
Included Lab Sample IDs: 2332513

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

Reference Method: SM 5310 B-2011
Run ID: A112691
Included Lab Sample IDs: 2332514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A112707
Included Lab Sample IDs: 2332513

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A112798
Included Lab Sample IDs: 2332514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A112842
Included Lab Sample IDs: 2332514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.4	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A112906
Included Lab Sample IDs: 2332513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A112906
Included Lab Sample IDs: 2332513

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A112931
Included Lab Sample IDs: 2332514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.9	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113014
Included Lab Sample IDs: 2332514

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	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	SMP	MS
DEP SOP: NU-094-1	Color (true)	102				0.158	
EPA 180.1 Rev. 2.0	Turbidity	96.7				1.74	
EPA 300.0 Rev. 2.1	Chloride	100	95.1	98.8		0.0097	
	Sulfate	100	96.0	98.3		0.256	
EPA 350.1 Rev. 2.0	Ammonia-N	100					1.28
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	112	100			9.15
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.3	96.8			0.456
EPA 365.1 Rev. 2.0	Total-P	103	102	105			2.62
SM 2320 B-2011	Total Alkalinity	103				0.0128	
SM 2540 C-2011	TDS					7.00	
SM 4500-F- C-2011	Fluoride	100	99.7	99.7			0.0
SM 5310 B-2011	Organic Carbon	94.1	94.2	94.4			0.112

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2332513
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2332513
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2332513
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2332513
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2332514
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2332514
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2332514
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2332514
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2332513
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2332513
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2332513
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2332513
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2332514

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	06/07/2022			06/07/2022 14:48	Samantha L Bates	2332513
EPA 180.1 Rev. 2.0	06/07/2022			06/07/2022 15:25	Khloe J Berg	2332513
EPA 300.0 Rev. 2.1	06/07/2022			06/10/2022 07:37	Anna M. Plaviak	2332513
EPA 350.1 Rev. 2.0	06/07/2022			06/20/2022 13:00	Judith K. Clark	2332514
EPA 351.2 Rev. 2.0	06/07/2022	06/09/2022 16:19	Samantha L Bates	06/13/2022 16:53	Alexandra J Mattheus	2332514
EPA 353.2 Rev. 2.0	06/07/2022			06/22/2022 17:11	Touraj Touran	2332514
EPA 365.1 Rev. 2.0	06/07/2022	06/09/2022 15:30	Simonne.V. Calhoun	06/14/2022 15:59	James L Waggerby	2332514
SM 2320 B-2011	06/07/2022			06/16/2022 18:30	Dale L. Simmons	2332513
SM 2540 C-2011	06/07/2022			06/10/2022 14:26	Yijie Li	2332513
SM 2540 D-2011	06/07/2022			06/10/2022 14:26	Yijie Li	2332513
SM 4500-F- C-2011	06/07/2022			06/16/2022 18:30	Dale L. Simmons	2332513
SM 5310 B-2011	06/07/2022			06/08/2022 22:34	Khloe J Berg	2332514