

Chemical Analysis Report

NE-DIST-2023-06-29-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Thomas Creek Cont.Monit.**
Request ID: **RQ-2023-06-05-31**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
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Date Certified: 17-JUL-2023 11:47



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: THOMAS CREEK 5 MILES DOWN FROM ETHEL Collection Date/Time: 06/28/2023 10:15

Field ID: G4NE0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2420519	DEP SOP: NU-094-1	Color (true)	400		PCU	P431946	
	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P431948	
	EPA 300.0 Rev. 2.1	Chloride	270		mg Cl/L	P432086	
		Sulfate	29		mg SO4/L	P432089	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P432207	
	SM 2540 C-2015	TDS	606		mg/L	P432262	
	SM 2540 D-2015	TSS	3	I	mg/L	P432166	
2420520	SM 4500-F- C-2011	Fluoride	0.087	I	mg F/L	P432209	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P432121	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P432142	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P432159	
	EPA 365.1 Rev. 2.0	Total-P	0.27		mg P/L	P432067	
	SM 5310 B-2011	Organic Carbon	37		mg C/L	P432156	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P431946

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431948

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432086

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432089

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432121

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432142

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432159

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432067

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

Reference Method: SM 2320 B-2011
Batch ID: P432207

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P432262

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P432166

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P432209

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P432156

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: P431946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431948

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432121

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432142

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: P432159

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: P432067

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

Reference Method: SM 2320 B-2011
Batch ID: P432207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.6		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P432262

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

Reference Method: SM 2540 D-2015
Batch ID: P432166

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	94.9		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P432209

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432086

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420355	Chloride	99.1		P	90 - 110
2420507	Chloride	95.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420355	Sulfate	96.2		P	90 - 110
2420507	Sulfate	95.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432121

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420508	Ammonia-N	91.2	92.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432142

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2421081	Kjeldahl Nitrogen	106	111	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420508	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420586	Total-P	99.9	99.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P432209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420981	Fluoride	100	98.9	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P432156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2420305	Organic Carbon	92.4	93.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P431946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420507	Color (true)	7.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431948

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420466	Turbidity	15.3	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420355	Chloride	0.00358	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P432089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420355	Sulfate	0.256	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P432121

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420508	Ammonia-N	1.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P432142

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2421081	Kjeldahl Nitrogen	3.88	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P432159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420508	NO2NO3-N	0.995	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P432067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420586	Total-P	0.146	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P432207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420981	Total Alkalinity	1.95	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P432262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420354	TDS	0.702	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P432209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420981	Fluoride	1.05	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P432156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2420305	Organic Carbon	0.607	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: A120102
Included Lab Sample IDs: 2420519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A120104
Included Lab Sample IDs: 2420519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A120184
Included Lab Sample IDs: 2420519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	106	108	P/P	90 - 110
Sulfate	103	105	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A120189
Included Lab Sample IDs: 2420520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.9	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A120213
Included Lab Sample IDs: 2420520

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

Reference Method: SM 5310 B-2011
Run ID: A120215
Included Lab Sample IDs: 2420520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A120222
Included Lab Sample IDs: 2420520

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

Reference Method: SM 2320 B-2011
Run ID: A120243
Included Lab Sample IDs: 2420519

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.9	94.5	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A120243

Included Lab Sample IDs: 2420519

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120254

Included Lab Sample IDs: 2420520

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.8	106	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
DEP SOP: NU-094-1	Color (true)	100			7.28	
EPA 180.1 Rev. 2.0	Turbidity	100			15.3	
EPA 300.0 Rev. 2.1	Chloride	98.4	99.1	95.1	0.0035	
	Sulfate	95.2	96.2	95.5	0.256	
EPA 350.1 Rev. 2.0	Ammonia-N	93.2	91.2	92.8		1.54
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	106	111		3.88
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	100		0.995
EPA 365.1 Rev. 2.0	Total-P	99.4	99.9	99.8		0.146
SM 2320 B-2011	Total Alkalinity	94.6			1.95	
SM 2540 C-2015	TDS	96.3			0.702	
SM 2540 D-2015	TSS	94.9				
SM 4500-F- C-2011	Fluoride	98.1	98.9	100		1.05
SM 5310 B-2011	Organic Carbon	93.6	92.4	93.0		0.607

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2420519
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2420519
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2420519
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2420519
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2420520
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2420520
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2420520
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2420520
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2420519
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2420519
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2420519
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2420519
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2420520

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	06/29/2023			06/29/2023 14:17	Chandler E Cox	2420519
EPA 180.1 Rev. 2.0	06/29/2023			06/29/2023 14:08	Khloe J Berg	2420519
EPA 300.0 Rev. 2.1	06/29/2023			07/06/2023 05:27	James L Waggeberby	2420519
EPA 350.1 Rev. 2.0	06/29/2023			07/06/2023 13:50	Khloe J Berg	2420520
EPA 351.2 Rev. 2.0	06/29/2023	07/07/2023 11:48	Simonne.V. Calhoun	07/10/2023 09:10	Samantha L Bates	2420520
EPA 353.2 Rev. 2.0	06/29/2023			07/07/2023 09:27	Beverly Y. Sanders	2420520
EPA 365.1 Rev. 2.0	06/29/2023	07/06/2023 15:43	Alexis Price	07/07/2023 10:17	Chandler E Cox	2420520
SM 2320 B-2011	06/29/2023			07/07/2023 05:18	Dale L. Simmons	2420519
SM 2540 C-2015	06/29/2023			06/30/2023 14:35	Dana G. Hughes	2420519
SM 2540 D-2015	06/29/2023			06/30/2023 14:35	Dana G. Hughes	2420519
SM 4500-F- C-2011	06/29/2023			07/07/2023 05:18	Dale L. Simmons	2420519
SM 5310 B-2011	06/29/2023			07/06/2023 23:38	Elise M. Gillis	2420520