

Chemical Analysis Report

NE-DIST-2023-12-21-01

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

Event Description: **Thomas Creek Deploy**
Request ID: **RQ-2023-12-04-33**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 10-JAN-2024 13:15



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: 12/20/2023 10:40

Field ID: G4NE0298

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2458443	DEP SOP: NU-094-1	Color (true)	270		PCU	P439367	
	EPA 180.1 Rev. 2.0	Turbidity	5.3	A	NTU	P439376	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P439531	
		Sulfate	3.4		mg SO4/L	P439534	
	SM 2320 B-2011	Total Alkalinity	12		mg CaCO3/L	P439459	
	SM 2540 C-2015	TDS	97		mg/L	P439636	
	SM 2540 D-2015	TSS	3	I	mg/L	P439638	
	SM 4500-F- C-2011	Fluoride	0.045	I	mg F/L	P439461	
2458444	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P439648	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P439453	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P439481	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P439390	MS
	SM 5310 B-2014	Organic Carbon	26		mg C/L	P439525	

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: P439367

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439376

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439531

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439534

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439648

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439453

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439481

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439390

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

Reference Method: SM 2320 B-2011
Batch ID: P439459

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: P439636

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P439638

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P439461

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P439525

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: P439367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.6		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439376

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439531

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439534

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439453

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: P439481

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: P439390

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

Reference Method: SM 2320 B-2011
Batch ID: P439459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.4		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P439636

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

Reference Method: SM 2540 D-2015
Batch ID: P439638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	106		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P439461

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P439525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458540	Chloride	101		P	90 - 110
2458588	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439534

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458540	Sulfate	100		P	90 - 110
2458588	Sulfate	99.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2459189	Ammonia-N	103	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439453

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458589	Kjeldahl Nitrogen	98.0	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458586	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458401	Total-P	111	113	F/F	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P439461

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458298	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P439525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2458433	Organic Carbon	101	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P439367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458432	Color (true)	2.48	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P439376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458443	Turbidity	3.78	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458540	Chloride	0.307	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458540	Sulfate	0.688	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P439648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2459189	Ammonia-N	2.19	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P439453

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458589	Kjeldahl Nitrogen	7.30	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P439481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458586	NO2NO3-N	0.506	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P439390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458401	Total-P	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P439459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458298	Total Alkalinity	0.0389	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P439636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458432	TDS	1.75	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P439461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458298	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P439525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2458433	Organic Carbon	0.562	Spike	P	0 - 15

* 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: A123387
Included Lab Sample IDs: 2458443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.6	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A123388
Included Lab Sample IDs: 2458443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123403
Included Lab Sample IDs: 2458444

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

Reference Method: SM 2320 B-2011
Run ID: A123420
Included Lab Sample IDs: 2458443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A123420
Included Lab Sample IDs: 2458443

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123437
Included Lab Sample IDs: 2458444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123459
Included Lab Sample IDs: 2458444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	95.3	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A123465
Included Lab Sample IDs: 2458444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	116	97.2	P/P	70 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A123466

Included Lab Sample IDs: 2458443

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 350.1 Rev. 2.0

Run ID: A123521

Included Lab Sample IDs: 2458444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	97.9	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
DEP SOP: NU-094-1	Color (true)	96.6			2.48	
EPA 180.1 Rev. 2.0	Turbidity	103			3.78	
EPA 300.0 Rev. 2.1	Chloride	101	101	102	0.307	
	Sulfate	101	100	99.1	0.688	
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	103	99.6		2.19
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.0	107		7.30
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.0	98.5		0.506
EPA 365.1 Rev. 2.0	Total-P	107	111	113		1.03
SM 2320 B-2011	Total Alkalinity	98.4			0.0389	
SM 2540 C-2015	TDS	93.6			1.75	
SM 2540 D-2015	TSS	106				
SM 4500-F- C-2011	Fluoride	99.6	101	101		0.480
SM 5310 B-2014	Organic Carbon	100	101	102		0.562

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2458443
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2458443
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2458443
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2458443
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2458444
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2458444
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2458444
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2458444
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2458443
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2458443
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2458443
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2458443
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2458444

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	12/21/2023			12/21/2023 16:37	Samantha L Bates	2458443
EPA 180.1 Rev. 2.0	12/21/2023			12/21/2023 15:39	Anna M. Plaviak	2458443
EPA 300.0 Rev. 2.1	12/21/2023			12/29/2023 06:33	Anna M. Plaviak	2458443
EPA 350.1 Rev. 2.0	12/21/2023			01/05/2024 13:15	Ping Hua	2458444
EPA 351.2 Rev. 2.0	12/21/2023	12/27/2023 11:05	Simonne.V. Calhoun	12/28/2023 16:33	Samantha L Bates	2458444
EPA 353.2 Rev. 2.0	12/21/2023			12/27/2023 12:25	Fadila Guebre	2458444
EPA 365.1 Rev. 2.0	12/21/2023	12/22/2023 09:57	Adam P Silver	12/22/2023 14:33	James L Waggerby	2458444
SM 2320 B-2011	12/21/2023			12/22/2023 22:28	Dale L. Simmons	2458443
SM 2540 C-2015	12/21/2023			12/22/2023 15:26	Yijie Li	2458443
SM 2540 D-2015	12/21/2023			12/22/2023 15:26	Yijie Li	2458443
SM 4500-F- C-2011	12/21/2023			12/22/2023 22:28	Dale L. Simmons	2458443
SM 5310 B-2014	12/21/2023			12/23/2023 00:47	Kenneth H Lee	2458444