

Chemical Analysis Report

SO-DIST-2024-01-25-02

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

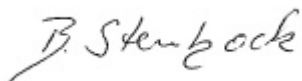
Event Description: **2024 SMP: Continuous Retrieval**
Request ID: **RQ-2024-01-15-20**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Marek Topolski, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 09-FEB-2024 18:19



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: SR 80 SEABOARD ST

Collection Date/Time: 01/24/2024 13:45

Field ID: G3SD0135

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2463272	DEP SOP: NU-094-1	Color (true)	68	A	PCU	P440450	
	EPA 180.1 Rev. 2.0	Turbidity	4.4	A	NTU	P440459	
	EPA 300.0 Rev. 2.1	Chloride	81		mg Cl/L	P440678	
		Sulfate	28		mg SO4/L	P440681	
	SM 2320 B-2011	Total Alkalinity	207		mg CaCO3/L	P440872	
	SM 2540 C-2015	TDS	378		mg/L	P440997	
	SM 2540 D-2015	TSS	2	I	mg/L	P440828	
	SM 4500-F- C-2011	Fluoride	0.22		mg F/L	P440875	
2463273	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P440976	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P440558	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P440684	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P440658	
	SM 5310 B-2014	Organic Carbon	13		mg C/L	P440787	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
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: P440450

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P440459

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440678

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440681

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440976

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440558

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440684

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440658

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

Reference Method: SM 2320 B-2011
Batch ID: P440872

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: P440997

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P440828

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P440875

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P440787

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: P440450

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: P440459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440678

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440681

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440976

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440558

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: P440684

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: P440658

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

Reference Method: SM 2320 B-2011
Batch ID: P440872

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.6		P	92 - 105

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P440997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P440828

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	92.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P440875

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

Reference Method: SM 5310 B-2014
Batch ID: P440787

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.9		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440678

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463089	Chloride	102		P	90 - 110
2463137	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463089	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440976

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2464295	Ammonia-N	95.4	94.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463282	Kjeldahl Nitrogen	111	109	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463273	NO2NO3-N	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463273	Total-P	102	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P440875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463058	Fluoride	101	102	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P440787

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2463142	Organic Carbon	98.4	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P440450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463272	Color (true)	1.05	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P440459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463272	Turbidity	2.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440678

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463089	Chloride	0.715	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P440681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463089	Sulfate	0.167	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P440976

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2464295	Ammonia-N	0.745	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P440558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463282	Kjeldahl Nitrogen	1.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P440684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463273	NO2NO3-N	0.507	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P440658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463273	Total-P	1.96	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P440872

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463058	Total Alkalinity	1.10	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P440997

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463133	TDS	2.76	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P440875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463058	Fluoride	0.527	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P440787

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2463142	Organic Carbon	2.13	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: A123821
Included Lab Sample IDs: 2463272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A123828
Included Lab Sample IDs: 2463272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123908
Included Lab Sample IDs: 2463272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	102	P/P	90 - 110
Sulfate	99.2	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123909
Included Lab Sample IDs: 2463273

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A123913
Included Lab Sample IDs: 2463273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	101	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A123942
Included Lab Sample IDs: 2463273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	118	96.3	P/P	70 - 130

Reference Method: SM 2320 B-2011
Run ID: A123977
Included Lab Sample IDs: 2463272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	95.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A123977
Included Lab Sample IDs: 2463272

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123984
Included Lab Sample IDs: 2463273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	96.3	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124011
Included Lab Sample IDs: 2463273

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.6	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			1.05	
EPA 180.1 Rev. 2.0	Turbidity	104			2.03	
EPA 300.0 Rev. 2.1	Chloride	103	102	104	0.715	
	Sulfate	101	98.7		0.167	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	95.4	94.6		0.745
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	111	109		1.34
EPA 353.2 Rev. 2.0	NO2NO3-N	102	97.2			0.507
EPA 365.1 Rev. 2.0	Total-P	107	102	105		1.96
SM 2320 B-2011	Total Alkalinity	97.6			1.10	
SM 2540 C-2015	TDS	96.4			2.76	
SM 2540 D-2015	TSS	92.8				
SM 4500-F- C-2011	Fluoride	101	101	102		0.527
SM 5310 B-2014	Organic Carbon	98.9	98.4	102		2.13

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2463272
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2463272
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2463272
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2463272
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2463273
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2463273
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2463273
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2463273
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2463272
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2463272
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2463272
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2463272
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2463273

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	01/25/2024			01/25/2024 13:48	Chandler E Cox	2463272
EPA 180.1 Rev. 2.0	01/25/2024			01/25/2024 13:13	Anna M. Plaviak	2463272
EPA 300.0 Rev. 2.1	01/25/2024			01/30/2024 16:55	James L Waggeberby	2463272
EPA 350.1 Rev. 2.0	01/25/2024			02/06/2024 12:32	Kenneth H Lee	2463273
EPA 351.2 Rev. 2.0	01/25/2024	01/30/2024 14:45	Simonne.V. Calhoun	02/02/2024 13:06	Samantha L Bates	2463273
EPA 353.2 Rev. 2.0	01/25/2024			01/30/2024 14:43	Fadila Guebre	2463273
EPA 365.1 Rev. 2.0	01/25/2024	01/30/2024 14:24	Adam P Silver	01/31/2024 10:52	Elise M. Gillis	2463273
SM 2320 B-2011	01/25/2024			02/01/2024 04:27	Dale L. Simmons	2463272
SM 2540 C-2015	01/25/2024			01/30/2024 15:39	Yijie Li	2463272
SM 2540 D-2015	01/25/2024			01/30/2024 15:39	Yijie Li	2463272
SM 4500-F- C-2011	01/25/2024			02/01/2024 04:27	Dale L. Simmons	2463272
SM 5310 B-2014	01/25/2024			02/01/2024 06:45	Khloe J Berg	2463273