

Chemical Analysis Report

SO-DIST-2023-09-29-01

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

Event Description: **2023 SMP: Continuous Pickup**
Request ID: **RQ-2023-09-25-25**
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: John Barrington

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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 19-OCT-2023 17:17



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: YUCCAFLATWOODS MID

Collection Date/Time: 09/28/2023 08:30

Field ID: G2SD0052

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2441623	DEP SOP: NU-094-1	Color (true)	290		PCU	P435763	
	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P435762	
	EPA 300.0 Rev. 2.1	Chloride	1.0E+03		mg Cl/L	P436166	
		Sulfate	130		mg SO4/L	P436169	
	SM 2320 B-2011	Total Alkalinity	44		mg CaCO3/L	P435930	
	SM 2540 C-2015	TDS	1.99E+03		mg/L	P436426	
	SM 2540 D-2015	TSS	10		mg/L	P436385	
	SM 4500-F- C-2011	Fluoride	0.12		mg F/L	P435932	
2441624	EPA 350.1 Rev. 2.0	Ammonia-N	0.061		mg N/L	P435866	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P436085	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P436548	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P435918	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P435840	

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: P435763

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435762

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436166

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436169

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435866

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436548

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435918

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

Reference Method: SM 2320 B-2011
Batch ID: P435930

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: P436426

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P436385

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435932

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435840

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: P435763

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.7		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435762

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436166

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436169

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435866

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436085

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436548

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: P435918

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

Reference Method: SM 2320 B-2011
Batch ID: P435930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.7		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P436426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	98.4		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P436385

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

Reference Method: SM 4500-F- C-2011
Batch ID: P435932

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

Reference Method: SM 5310 B-2011
Batch ID: P435840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441360	Chloride	105		P	90 - 110
2441413	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441360	Sulfate	102		P	90 - 110
2441413	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441418	Ammonia-N	98.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441614	Kjeldahl Nitrogen	107	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436548

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442565	NO2NO3-N	96.1	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435918

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441638	Total-P	104	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P435932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441657	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P435840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2441648	Organic Carbon	96.6	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P435763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441575	Color (true)	1.53	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441576	Turbidity	5.64	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441360	Chloride	0.274	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441360	Sulfate	0.657	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441418	Ammonia-N	2.12	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441614	Kjeldahl Nitrogen	5.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436548

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442565	NO2NO3-N	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435918

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441638	Total-P	1.79	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P435930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441657	Total Alkalinity	0.641	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P436426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441657	TDS	4.71	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441657	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2441648	Organic Carbon	0.371	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121857

Included Lab Sample IDs: 2441623

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

Reference Method: DEP SOP: NU-094-1

Run ID: A121858

Included Lab Sample IDs: 2441623

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.9	99.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A121896

Included Lab Sample IDs: 2441624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121913

Included Lab Sample IDs: 2441624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	99.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A121941

Included Lab Sample IDs: 2441623

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	95.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A121941

Included Lab Sample IDs: 2441623

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A121947

Included Lab Sample IDs: 2441624

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121948

Included Lab Sample IDs: 2441623

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	99.9	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122030

Included Lab Sample IDs: 2441624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122172

Included Lab Sample IDs: 2441624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	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)	97.7			1.53	
EPA 180.1 Rev. 2.0	Turbidity	104			5.64	
EPA 300.0 Rev. 2.1	Chloride	100	105	106	0.274	
	Sulfate	101	102	103	0.657	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	98.4	101		2.12
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	107	99.3		5.27
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.1	97.6		1.27
EPA 365.1 Rev. 2.0	Total-P	102	104	107		1.79
SM 2320 B-2011	Total Alkalinity	96.7			0.641	
SM 2540 C-2015	TDS	98.4			4.71	
SM 2540 D-2015	TSS	106				
SM 4500-F- C-2011	Fluoride	101	101	101		0.0
SM 5310 B-2011	Organic Carbon	96.5	96.6	97.2		0.371

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2441623
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2441623
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2441623
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2441623
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2441624
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2441624
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2441624
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2441624
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2441623
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2441623
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2441623
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2441623
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2441624

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	09/29/2023			09/29/2023 15:57	Alexis Price	2441623
EPA 180.1 Rev. 2.0	09/29/2023			09/29/2023 14:07	Samantha L Bates	2441623
EPA 300.0 Rev. 2.1	09/29/2023			10/05/2023 21:22	James L Waggerby	2441623
EPA 350.1 Rev. 2.0	09/29/2023			10/03/2023 11:29	Khloe J Berg	2441624
EPA 351.2 Rev. 2.0	09/29/2023	10/06/2023 09:23	Samantha L Bates	10/09/2023 15:59	Samantha L Bates	2441624
EPA 353.2 Rev. 2.0	09/29/2023			10/16/2023 11:59	Anna M. Plaviak	2441624
EPA 365.1 Rev. 2.0	09/29/2023	10/04/2023 10:15	Adam P Silver	10/04/2023 15:07	James L Waggerby	2441624
SM 2320 B-2011	09/29/2023			10/04/2023 02:47	Dale L. Simmons	2441623
SM 2540 C-2015	09/29/2023			10/04/2023 15:07	Yijie Li	2441623
SM 2540 D-2015	09/29/2023			10/04/2023 15:07	Yijie Li	2441623
SM 4500-F- C-2011	09/29/2023			10/04/2023 02:47	Dale L. Simmons	2441623
SM 5310 B-2011	09/29/2023			10/03/2023 05:15	Elise M. Gillis	2441624