

Chemical Analysis Report

SW-DIST-2023-12-06-01

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

Event Description: **Run 3**
Request ID: **RQ-2023-12-04-47**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Colin Wright, Program Administrator

Date Certified: 21-DEC-2023 16:08

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: LAKE IDA AT CENTER

Collection Date/Time: 12/05/2023 09:45

Field ID: G3SW0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2454935	DEP SOP: NU-094-1	Color (true)	22		PCU	P438586	
	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P438591	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P439032	
		Sulfate	18		mg SO4/L	P439138	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P438763	
	SM 2540 C-2015	TDS	166		mg/L	P439143	
	SM 2540 D-2015	TSS	2	I	mg/L	P439129	
	SM 4500-F- C-2011	Fluoride	0.16		mg F/L	P438765	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P438667	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P438748	
2454936	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P438677	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P438837	
	SM 5310 B-2014	Organic Carbon	7.3		mg C/L	P438689	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P438586

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438591

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439032

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439138

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438667

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438748

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438677

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438837

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

Reference Method: SM 2320 B-2011
Batch ID: P438763

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: P439143

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P439129

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438765

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P438689

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: P438586

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: P438591

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439032

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439138

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438667

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438748

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438677

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438837

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

Reference Method: SM 2320 B-2011
Batch ID: P438763

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.6		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P439143

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	103		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P439129

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

Reference Method: SM 4500-F- C-2011
Batch ID: P438765

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

Reference Method: SM 5310 B-2014
Batch ID: P438689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454834	Chloride	98.4		P	90 - 110
2454955	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454834	Sulfate	98.7		P	90 - 110
2454955	Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438667

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454779	Ammonia-N	98.4	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438748

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454854	Kjeldahl Nitrogen	104	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454779	NO2NO3-N	95.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454829	Total-P	106	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P438765

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454955	Fluoride	103	103	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P438689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454936	Organic Carbon	99.4	99.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454852	Color (true)	0.615	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438591

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454852	Turbidity	4.14	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454834	Chloride	0.101	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P439138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454834	Sulfate	0.282	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438667

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454779	Ammonia-N	0.158	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438748

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454854	Kjeldahl Nitrogen	3.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454779	NO2NO3-N	1.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454829	Total-P	1.05	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P438763

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454955	Total Alkalinity	2.56	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P439143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454289	TDS	3.89	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P439129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454289	TSS	8.33	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438765

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454955	Fluoride	0.516	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P438689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454936	Organic Carbon	0.255	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: A123059
Included Lab Sample IDs: 2454935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A123061
Included Lab Sample IDs: 2454935

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A123081
Included Lab Sample IDs: 2454936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123088
Included Lab Sample IDs: 2454936

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

Reference Method: SM 5310 B-2014
Run ID: A123093
Included Lab Sample IDs: 2454936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	101	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A123118
Included Lab Sample IDs: 2454935

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

Reference Method: SM 2320 B-2011
Run ID: A123130
Included Lab Sample IDs: 2454935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A123130
Included Lab Sample IDs: 2454935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	103	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A123174

Included Lab Sample IDs: 2454936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.4	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123197

Included Lab Sample IDs: 2454936

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A123254

Included Lab Sample IDs: 2454935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	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	MS
DEP SOP: NU-094-1	Color (true)	102			0.615	
EPA 180.1 Rev. 2.0	Turbidity	104			4.14	
EPA 300.0 Rev. 2.1	Chloride	99.1	98.4	99.0	0.101	
	Sulfate	99.2	98.7	98.8	0.282	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8	98.4	98.6		0.158
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	104	109		3.76
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	95.4	96.9		1.14
EPA 365.1 Rev. 2.0	Total-P	106	106	107		1.05
SM 2320 B-2011	Total Alkalinity	95.6			2.56	
SM 2540 C-2015	TDS	103			3.89	
SM 2540 D-2015	TSS	106			8.33	
SM 4500-F- C-2011	Fluoride	103	103	103		0.516
SM 5310 B-2014	Organic Carbon	99.2	99.4	99.1		0.255

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2454935
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2454935
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2454935
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2454935
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2454936
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2454936
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2454936
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2454936
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2454935
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2454935
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2454935
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2454935
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2454936

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	12/06/2023			12/06/2023 14:25	Blanca Fach	2454935
EPA 180.1 Rev. 2.0	12/06/2023			12/06/2023 14:55	Anna M. Plaviak	2454935
EPA 300.0 Rev. 2.1	12/06/2023			12/12/2023 20:45	Anna M. Plaviak	2454935
	12/06/2023			12/15/2023 15:58	James L Waggeberby	2454935
EPA 350.1 Rev. 2.0	12/06/2023			12/07/2023 12:57	Khloe J Berg	2454936
EPA 351.2 Rev. 2.0	12/06/2023	12/11/2023 12:28	Simonne.V. Calhoun	12/12/2023 16:17	Samantha L Bates	2454936
EPA 353.2 Rev. 2.0	12/06/2023			12/07/2023 14:37	Fadila Guebre	2454936
EPA 365.1 Rev. 2.0	12/06/2023	12/12/2023 14:15	Adam P Silver	12/13/2023 15:12	Simonne.V. Calhoun	2454936
SM 2320 B-2011	12/06/2023			12/08/2023 02:41	Adam P Silver	2454935
SM 2540 C-2015	12/06/2023			12/08/2023 16:18	Yijie Li	2454935
SM 2540 D-2015	12/06/2023			12/08/2023 16:18	Yijie Li	2454935
SM 4500-F- C-2011	12/06/2023			12/08/2023 02:41	Adam P Silver	2454935
SM 5310 B-2014	12/06/2023			12/08/2023 00:07	Kenneth H Lee	2454936