

Chemical Analysis Report

SE-DIST-2023-08-29-04

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

Event Description: **Sawgrass Lake**
Request ID: **RQ-2023-08-28-50**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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2199 South Rock Road
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 19-SEP-2023 11:12



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: Little Sawgrass Lake Center

Collection Date/Time: 08/28/2023 14:38

Field ID: G3SE0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2434090	DEP SOP: NU-094-1	Color (true)	290		PCU	P434491	
	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P434496	
	EPA 300.0 Rev. 2.1	Chloride	71		mg Cl/L	P434876	
		Sulfate	9.8		mg SO4/L	P434879	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P434707	
	SM 2540 C-2015	TDS	303		mg/L	P434781	
	SM 2540 D-2015	TSS	4	I	mg/L	P434782	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P434710	
2434091	EPA 350.1 Rev. 2.0	Ammonia-N	0.063		mg N/L	P434682	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.0		mg N/L	P434762	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.011		mg N/L	P434866	
	EPA 365.1 Rev. 2.0	Total-P	0.066		mg P/L	P434663	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P434775	

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: P434491

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434496

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434876

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434879

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434682

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434762

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434866

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434663

Component	Result	Code	Units
Total-P	0.010	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P434707

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: P434781

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P434782

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P434775

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: P434491

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434876

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434879

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	91.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434682

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434762

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434866

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434663

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

Reference Method: SM 2320 B-2011
Batch ID: P434707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.8		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P434781

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.6		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P434782

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.1		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.3		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434775

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: P434876

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434257	Chloride	97.4		P	90 - 110
2434511	Chloride	95.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434257	Sulfate	94.0		P	90 - 110
2434511	Sulfate	91.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434682

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434027	Ammonia-N	98.4	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434014	Kjeldahl Nitrogen	102	91.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434866

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434063	NO2NO3-N	96.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434175	Total-P	106	108	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434064	Fluoride	99.2	99.8	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P434775

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2434444	Organic Carbon	93.5	96.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P434491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434022	Color (true)	1.54	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P434496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434062	Turbidity	3.82	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434257	Chloride	1.43	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P434879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434257	Sulfate	1.55	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P434682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434027	Ammonia-N	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P434762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434014	Kjeldahl Nitrogen	8.68	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P434866

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434063	NO2NO3-N	0.255	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P434663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434175	Total-P	0.944	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P434707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434064	Total Alkalinity	1.79	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P434781

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2433788	TDS	4.65	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P434710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434064	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P434775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2434444	Organic Carbon	1.47	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: A121314
Included Lab Sample IDs: 2434090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.3	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A121317
Included Lab Sample IDs: 2434090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	97.5	97.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A121407
Included Lab Sample IDs: 2434091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	100	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A121417
Included Lab Sample IDs: 2434090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.5	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A121417
Included Lab Sample IDs: 2434090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A121423
Included Lab Sample IDs: 2434091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A121443
Included Lab Sample IDs: 2434091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.1	95.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A121481
Included Lab Sample IDs: 2434091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	96.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A121484

Included Lab Sample IDs: 2434091

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121485

Included Lab Sample IDs: 2434090

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	102	P/P	90 - 110
Sulfate	100	104	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)	101			1.54	
EPA 180.1 Rev. 2.0	Turbidity	97.9			3.82	
EPA 300.0 Rev. 2.1	Chloride	94.6	97.4	95.8	1.43	
	Sulfate	91.0	94.0	91.8	1.55	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6	98.4	101		1.78
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.9	102	91.7		8.68
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	96.0	96.5		0.255
EPA 365.1 Rev. 2.0	Total-P	104	106	108		0.944
SM 2320 B-2011	Total Alkalinity	95.8			1.79	
SM 2540 C-2015	TDS	97.6			4.65	
SM 2540 D-2015	TSS	93.1				
SM 4500-F- C-2011	Fluoride	98.3	99.2	99.8		0.480
SM 5310 B-2011	Organic Carbon	93.6	93.5	96.1		1.47

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2434090
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2434090
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2434090
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2434090
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2434091
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2434091
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2434091
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2434091
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2434090
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2434090
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2434090
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2434090
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2434091

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	08/29/2023			08/29/2023 14:40	Alexis Price	2434090
EPA 180.1 Rev. 2.0	08/29/2023			08/29/2023 14:33	Anna M. Plaviak	2434090
EPA 300.0 Rev. 2.1	08/29/2023			09/11/2023 19:49	James L Waggerby	2434090
EPA 350.1 Rev. 2.0	08/29/2023			09/07/2023 11:59	Khloe J Berg	2434091
EPA 351.2 Rev. 2.0	08/29/2023	09/11/2023 14:51	Simonne.V. Calhoun	09/12/2023 14:07	Samantha L Bates	2434091
EPA 353.2 Rev. 2.0	08/29/2023			09/12/2023 10:21	Anna M. Plaviak	2434091
EPA 365.1 Rev. 2.0	08/29/2023	09/07/2023 14:07	Adam P Silver	09/08/2023 11:44	James L Waggerby	2434091
SM 2320 B-2011	08/29/2023			09/07/2023 20:57	Dale L. Simmons	2434090
SM 2540 C-2015	08/29/2023			09/01/2023 14:12	Yijie Li	2434090
SM 2540 D-2015	08/29/2023			09/01/2023 14:12	Yijie Li	2434090
SM 4500-F- C-2011	08/29/2023			09/07/2023 20:57	Dale L. Simmons	2434090
SM 5310 B-2011	08/29/2023			09/07/2023 18:03	Elise M. Gillis	2434091