

Chemical Analysis Report

SW-DIST-2022-07-22-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

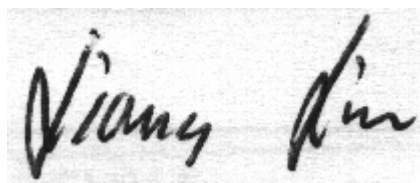
Event Description: **Run 14**
Request ID: **RQ-2022-07-11-05**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-AUG-2022 15:27

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: Little Banana Lake @ Center

Collection Date/Time: 07/21/2022 11:45

Field ID: G3SW0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2343497	DEP SOP: NU-094-1	Color (true)	15		PCU	P417067	
	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P417051	
	EPA 300.0 Rev. 2.1	Chloride	20	A	mg Cl/L	P417385	
		Sulfate	2.3	A	mg SO4/L	P417389	
	SM 2320 B-2011	Total Alkalinity	66		mg CaCO3/L	P417437	
	SM 2540 C-2011	TDS	109		mg/L	P417491	
	SM 2540 D-2011	TSS	4	I	mg/L	P417479	
	SM 4500-F- C-2011	Fluoride	0.60		mg F/L	P417442	
2343498	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P417314	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P417240	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P417308	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P417140	
	SM 5310 B-2011	Organic Carbon	10		mg C/L	P417294	

Ref. Method and Comment:

SM 2540 D-2011: 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: P417067

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417051

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417385

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417389

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417314

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417240

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417308

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417140

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

Reference Method: SM 2320 B-2011
Batch ID: P417437

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P417491

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P417479

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417442

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417294

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: P417067

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: P417051

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417385

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417389

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417314

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: P417240

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417308

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: P417140

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

Reference Method: SM 2320 B-2011
Batch ID: P417437

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P417442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	104		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343497	Chloride	99.9		P	90 - 110
2343556	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343497	Sulfate	101		P	90 - 110
2343556	Sulfate	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343494	Ammonia-N	95.6	93.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343690	Kjeldahl Nitrogen	96.4	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343494	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417140

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342125	Total-P	102	103	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2344107	Fluoride	104	103	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2343502	Organic Carbon	97.2	99.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P417067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343450	Color (true)	1.66	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343377	Turbidity	3.95	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343497	Chloride	2.44	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P417389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343497	Sulfate	4.09	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343494	Ammonia-N	1.76	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343690	Kjeldahl Nitrogen	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343494	NO2NO3-N	0.980	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342125	Total-P	0.971	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P417437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344107	Total Alkalinity	0.908	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P417491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343493	TDS	8.00	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2344107	Fluoride	1.01	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2343502	Organic Carbon	1.70	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: A113670

Included Lab Sample IDs: 2343497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A113681

Included Lab Sample IDs: 2343497

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113721

Included Lab Sample IDs: 2343497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	104	P/P	90 - 110
Sulfate	103	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A113757

Included Lab Sample IDs: 2343498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113761

Included Lab Sample IDs: 2343498

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113763

Included Lab Sample IDs: 2343498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113768

Included Lab Sample IDs: 2343498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113782

Included Lab Sample IDs: 2343498

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A113811

Included Lab Sample IDs: 2343497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	97.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113811

Included Lab Sample IDs: 2343497

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	105	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			1.66	
EPA 180.1 Rev. 2.0	Turbidity	94.2			3.95	
EPA 300.0 Rev. 2.1	Chloride	104	99.9	103	2.44	
	Sulfate	104	101	99.5	4.09	
EPA 350.1 Rev. 2.0	Ammonia-N	99.8	95.6	93.8		1.76
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	96.4	98.9		1.47
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	102		0.980
EPA 365.1 Rev. 2.0	Total-P	103	102	103		0.971
SM 2320 B-2011	Total Alkalinity	99.7			0.908	
SM 2540 C-2011	TDS				8.00	
SM 4500-F- C-2011	Fluoride	104	104	103		1.01
SM 5310 B-2011	Organic Carbon	95.6	97.2	99.9		1.70

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2343497
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2343497
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2343497
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2343497
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2343498
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2343498
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2343498
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2343498
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2343497
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2343497
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2343497
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2343497
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2343498

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	07/22/2022			07/22/2022 14:57	Blanca Fach	2343497
EPA 180.1 Rev. 2.0	07/22/2022			07/22/2022 17:24	Anna M. Plaviak	2343497
EPA 300.0 Rev. 2.1	07/22/2022			07/28/2022 23:59	Anna M. Plaviak	2343497
EPA 350.1 Rev. 2.0	07/22/2022			07/28/2022 12:18	Ping Hua	2343498
EPA 351.2 Rev. 2.0	07/22/2022	07/28/2022 11:30	Simonne.V. Calhoun	07/28/2022 17:05	Samantha L Bates	2343498
EPA 353.2 Rev. 2.0	07/22/2022			07/28/2022 10:50	Beverly Y. Sanders	2343498
EPA 365.1 Rev. 2.0	07/22/2022	07/27/2022 16:58	Adam P Silver	07/28/2022 13:02	James L Waggerby	2343498
SM 2320 B-2011	07/22/2022			07/30/2022 10:20	Adam P Silver	2343497
SM 2540 C-2011	07/22/2022			07/26/2022 15:02	Yijie Li	2343497
SM 2540 D-2011	07/22/2022			07/26/2022 15:02	Yijie Li	2343497
SM 4500-F- C-2011	07/22/2022			07/30/2022 10:20	Adam P Silver	2343497
SM 5310 B-2011	07/22/2022			07/27/2022 22:21	Khloe J Berg	2343498