

Chemical Analysis Report

NW-DIST-2023-11-30-01

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

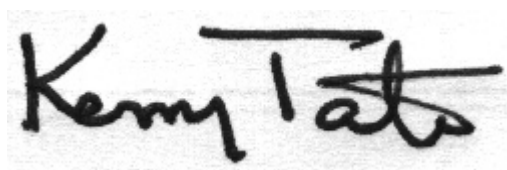
Event Description: **Crescent Lake Make-up**
Request ID: **RQ-2023-11-27-17**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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160 W Government Street
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 14-DEC-2023 10:23

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: CRESCENT LAKE

Collection Date/Time: 11/28/2023 10:55

Field ID: G5NW0159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453649	DEP SOP: NU-094-1	Color (true)	12	Q	PCU	P438366	
	EPA 180.1 Rev. 2.0	Turbidity	2.6	Q	NTU	P438375	
	EPA 300.0 Rev. 2.1	Chloride	9.7		mg Cl/L	P438737	
		Sulfate	7.9		mg SO4/L	P438740	
	SM 2320 B-2011	Total Alkalinity	17		mg CaCO3/L	P438459	
	SM 2540 C-2015	TDS	62		mg/L	P438789	
	SM 2540 D-2015	TSS	4	I	mg/L	P438694	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P438462	
2453650	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P438567	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P438391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P438473	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P438486	
	SM 5310 B-2011	Organic Carbon	2.5		mg C/L	P438441	

Ref. Method and Comment:

DEP SOP: NU-094-1: The sample expired upon receipt.

EPA 180.1 Rev. 2.0: The sample expired upon receipt.

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: P438366

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438375

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438567

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

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

Reference Method: SM 2320 B-2011
Batch ID: P438459

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: P438789

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P438694

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P438441

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: P438366

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: P438375

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438567

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

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: P438473

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: P438486

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

Reference Method: SM 2320 B-2011
Batch ID: P438459

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.2		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P438789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	99.6		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P438694

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

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

Reference Method: SM 5310 B-2011
Batch ID: P438441

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453434	Chloride	102		P	90 - 110
2453693	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453434	Sulfate	102		P	90 - 110
2453693	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453629	Ammonia-N	94.2	96.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453656	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453628	NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453629	Total-P	103	106	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453619	Fluoride	102	102	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453621	Organic Carbon	96.7	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P438366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453625	Color (true)	1.10	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P438375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Turbidity	9.94	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453434	Chloride	3.69	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453434	Sulfate	6.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453629	Ammonia-N	2.40	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453656	Kjeldahl Nitrogen	1.38	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453628	NO2NO3-N	0.615	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453629	Total-P	2.18	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P438459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Total Alkalinity	0.587	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453076	TDS	7.79	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453619	Fluoride	0.495	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P438441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453621	Organic Carbon	0.348	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: A122963
Included Lab Sample IDs: 2453649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A122967
Included Lab Sample IDs: 2453649

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

Reference Method: SM 5310 B-2011
Run ID: A122996
Included Lab Sample IDs: 2453650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.8	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A123013
Included Lab Sample IDs: 2453649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	94.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A123013
Included Lab Sample IDs: 2453649

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A123014
Included Lab Sample IDs: 2453650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A123024
Included Lab Sample IDs: 2453650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	92.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A123057
Included Lab Sample IDs: 2453650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.9	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A123085

Included Lab Sample IDs: 2453650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A123118

Included Lab Sample IDs: 2453649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	103	P/P	90 - 110
Sulfate	102	102	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			1.10	
EPA 180.1 Rev. 2.0	Turbidity	104			9.94	
EPA 300.0 Rev. 2.1	Chloride	101	102	103	3.69	
	Sulfate	101	102	103	6.92	
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	94.2	96.6		2.40
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	105	107		1.38
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5			0.615
EPA 365.1 Rev. 2.0	Total-P	102	103	106		2.18
SM 2320 B-2011	Total Alkalinity	96.2			0.587	
SM 2540 C-2015	TDS	99.6			7.79	
SM 2540 D-2015	TSS	96.0				
SM 4500-F- C-2011	Fluoride	101	102	102		0.495
SM 5310 B-2011	Organic Carbon	97.2	96.7	96.3		0.348

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2453649
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2453649
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2453649
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2453649
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2453650
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2453650
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2453650
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2453650
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2453649
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2453649
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2453649
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2453649
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2453650

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	11/30/2023			11/30/2023 13:58	Blanca Fach	2453649
EPA 180.1 Rev. 2.0	11/30/2023			11/30/2023 13:21	Khloe J Berg	2453649
EPA 300.0 Rev. 2.1	11/30/2023			12/07/2023 19:36	James L Waggeberby	2453649
EPA 350.1 Rev. 2.0	11/30/2023			12/06/2023 11:27	Ping Hua	2453650
EPA 351.2 Rev. 2.0	11/30/2023	12/01/2023 12:09	Simonne.V. Calhoun	12/05/2023 12:13	Samantha L Bates	2453650
EPA 353.2 Rev. 2.0	11/30/2023			12/04/2023 13:22	Fadila Guebre	2453650
EPA 365.1 Rev. 2.0	11/30/2023	12/05/2023 12:17	Adam P Silver	12/07/2023 11:31	Chandler E Cox	2453650
SM 2320 B-2011	11/30/2023			12/02/2023 04:43	Dale L. Simmons	2453649
SM 2540 C-2015	11/30/2023			12/01/2023 15:02	Yijie Li	2453649
SM 2540 D-2015	11/30/2023			12/01/2023 15:02	Yijie Li	2453649
SM 4500-F- C-2011	11/30/2023			12/02/2023 04:43	Dale L. Simmons	2453649
SM 5310 B-2011	11/30/2023			12/01/2023 22:47	Kenneth H Lee	2453650