

Chemical Analysis Report

TLH-ROC-2022-06-23-01

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

Event Description: **Run 16**
Request ID: **RQ-2022-06-06-68**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Date Certified: 15-JUL-2022 10:36



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: Marshall Creek @ SR2

Collection Date/Time: 06/23/2022 09:45

Field ID: G2TLHR0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2336966	DEP SOP: NU-094-1	Color (true)	19		PCU	P415685	
	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P415669	
	EPA 300.0 Rev. 2.1	Chloride	4.9	A	mg Cl/L	P416147	
		Sulfate	0.98	A	mg SO4/L	P416150	
	SM 2320 B-2011	Total Alkalinity	95		mg CaCO3/L	P415958	
	SM 2540 C-2011	TDS	133	A	mg/L	P416222	
	SM 2540 D-2011	TSS	14	A	mg/L	P416189	
	SM 4500-F- C-2011	Fluoride	0.046	I	mg F/L	P415963	
2336967	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P415978	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P415919	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.0		mg N/L	P416408	
	EPA 365.1 Rev. 2.0	Total-P	0.058		mg P/L	P416021	
	SM 5310 B-2011	Organic Carbon	2.7		mg C/L	P415857	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P415685

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415669

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416147

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416150

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415978

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415919

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416408

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416021

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

Reference Method: SM 2320 B-2011
Batch ID: P415958

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: P416222

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416189

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P415963

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415857

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: P415685

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: P415669

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415978

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415919

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: P416408

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416021

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

Reference Method: SM 2320 B-2011
Batch ID: P415958

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P415963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415857

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336966	Chloride	95.8		P	90 - 110
2337151	Chloride	95.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336966	Sulfate	97.0		P	90 - 110
2337151	Sulfate	94.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336404	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336976	NO2NO3-N	110	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2336948	Total-P	102	105	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P415963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337006	Fluoride	102	102	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415857

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2337032	Organic Carbon	97.4	97.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P415685

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336859	Color (true)	3.91	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P415669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336796	Turbidity	0.991	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	Chloride	0.102	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	Sulfate	0.163	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P415978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336404	Ammonia-N	0.340	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P415919

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336228	Kjeldahl Nitrogen	2.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336976	NO2NO3-N	0.306	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336948	Total-P	2.85	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P415958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337006	Total Alkalinity	0.0833	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P416222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	TDS	7.52	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P416189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2336966	TSS	2.90	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P415963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337006	Fluoride	0.483	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415857

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2337032	Organic Carbon	0.101	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: A113019

Included Lab Sample IDs: 2336966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A113022

Included Lab Sample IDs: 2336966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A113129

Included Lab Sample IDs: 2336967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	99.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A113156

Included Lab Sample IDs: 2336966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	99.6	P/P	90 - 110
Sulfate	99.3	99.7	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A113157

Included Lab Sample IDs: 2336966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	99.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113157

Included Lab Sample IDs: 2336966

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113166

Included Lab Sample IDs: 2336967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113239

Included Lab Sample IDs: 2336967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113278

Included Lab Sample IDs: 2336967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113410

Included Lab Sample IDs: 2336967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	108	110	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		LCS	Precision	MS
						SMP	
DEP SOP: NU-094-1	Color (true)	101				3.91	
EPA 180.1 Rev. 2.0	Turbidity	97.2				0.991	
EPA 300.0 Rev. 2.1	Chloride	98.3	95.8	95.5		0.102	
	Sulfate	97.7	97.0	94.9		0.163	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	100			0.340
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103					2.33
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106	110	110			0.306
EPA 365.1 Rev. 2.0	Total-P	102	102	105			2.85
SM 2320 B-2011	Total Alkalinity	101				0.0833	
SM 2540 C-2011	TDS					7.52	
SM 2540 D-2011	TSS					2.90	
SM 4500-F- C-2011	Fluoride	99.3	102	102			0.483
SM 5310 B-2011	Organic Carbon	98.4	97.4	97.3			0.101

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2336966
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2336966
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2336966
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2336966
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2336967
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2336967
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2336967
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2336967
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2336966
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2336966
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2336966
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2336966
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2336967

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	06/23/2022			06/23/2022 16:17	Anna M. Plaviak	2336966
EPA 180.1 Rev. 2.0	06/23/2022			06/23/2022 14:38	Khloe J Berg	2336966
EPA 300.0 Rev. 2.1	06/23/2022			07/01/2022 13:23	Anna M. Plaviak	2336966
EPA 350.1 Rev. 2.0	06/23/2022			06/29/2022 14:07	Judith K. Clark	2336967
EPA 351.2 Rev. 2.0	06/23/2022	06/30/2022 14:06	Samantha L Bates	07/01/2022 12:13	Alexandra J Mattheus	2336967
EPA 353.2 Rev. 2.0	06/23/2022			07/08/2022 17:23	Touraj Touran	2336967
EPA 365.1 Rev. 2.0	06/23/2022	07/01/2022 16:41	Simonne.V. Calhoun	07/05/2022 11:01	James L Waggerby	2336967
SM 2320 B-2011	06/23/2022			06/29/2022 02:55	Dale L. Simmons	2336966
SM 2540 C-2011	06/23/2022			06/28/2022 16:31	Yijie Li	2336966
SM 2540 D-2011	06/23/2022			06/28/2022 16:31	Yijie Li	2336966
SM 4500-F- C-2011	06/23/2022			06/29/2022 02:55	Dale L. Simmons	2336966
SM 5310 B-2011	06/23/2022			06/28/2022 00:32	Khloe J Berg	2336967