

Chemical Analysis Report

TLH-ROC-2022-07-20-03

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-2022-07-18-47**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Colin Wright, Program Administrator

Date Certified: 03-AUG-2022 09:15

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: New River 1st bend upstream Gully Branch

Collection Date/Time: 07/20/2022 12:10

Field ID: G2TLHR0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2342896	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P416928	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P417354	
	SM 2540 D-2011	TSS	4	I	mg/L	P417290	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P417356	
2342897	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P417323	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P417162	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P417226	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P417140	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P417152	

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: EPA 180.1 Rev. 2.0
Batch ID: P416928

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417323

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417162

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417226

Component	Result	Code	Units
NO ₂ NO ₃ -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: P417354

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 D-2011
Batch ID: P417290

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417356

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417152

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	94.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417323

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417162

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		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: P417354

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.1		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P417356

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

Reference Method: SM 5310 B-2011
Batch ID: P417152

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342760	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417162

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342904	Kjeldahl Nitrogen	102	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342904	NO2NO3-N	98.8		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: P417356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342914	Fluoride	103	103	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2342715	Organic Carbon	94.0	94.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342916	Turbidity	0.613	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342760	Ammonia-N	0.985	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342904	Kjeldahl Nitrogen	4.61	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342904	NO2NO3-N	1.69	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

Reference Method: SM 2320 B-2011
Batch ID: P417354

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342914	Total Alkalinity	0.352	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011
Batch ID: P417356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342914	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2342715	Organic Carbon	0.355	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A113620

Included Lab Sample IDs: 2342896

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

Reference Method: SM 5310 B-2011

Run ID: A113701

Included Lab Sample IDs: 2342897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.1	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113726

Included Lab Sample IDs: 2342897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A113748

Included Lab Sample IDs: 2342897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113765

Included Lab Sample IDs: 2342897

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A113771

Included Lab Sample IDs: 2342897

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

Reference Method: SM 2320 B-2011

Run ID: A113778

Included Lab Sample IDs: 2342896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	99.4	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113778

Included Lab Sample IDs: 2342896

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	106	107	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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 SMP	MS
					LCS	
EPA 180.1 Rev. 2.0	Turbidity	94.4			0.613	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	101	102		0.985
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.3	102	96.4		4.61
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101		98.8		1.69
EPA 365.1 Rev. 2.0	Total-P	103	102	103		0.971
SM 2320 B-2011	Total Alkalinity	99.1			0.352	
SM 4500-F- C-2011	Fluoride	104	103	103		0.0
SM 5310 B-2011	Organic Carbon	98.1	94.0	94.6		0.355

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2342896
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2342897
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2342897
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2342897
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2342897
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2342896
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2342896
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2342896
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2342897

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/20/2022			07/20/2022 16:16	Anna M. Plaviak	2342896
EPA 350.1 Rev. 2.0	07/20/2022			07/28/2022 12:37	Judith K. Clark	2342897
EPA 351.2 Rev. 2.0	07/20/2022	07/27/2022 09:57	Simonne.V. Calhoun	07/27/2022 17:11	Samantha L Bates	2342897
EPA 353.2 Rev. 2.0	07/20/2022			07/27/2022 10:20	Beverly Y. Sanders	2342897
EPA 365.1 Rev. 2.0	07/20/2022	07/27/2022 16:58	Adam P Silver	07/28/2022 15:12	James L Waggeberby	2342897
SM 2320 B-2011	07/20/2022			07/28/2022 22:55	Dale L. Simmons	2342896
SM 2540 D-2011	07/20/2022			07/22/2022 15:32	Yijie Li	2342896
SM 4500-F- C-2011	07/20/2022			07/28/2022 22:55	Dale L. Simmons	2342896
SM 5310 B-2011	07/20/2022			07/26/2022 05:07	Khloe J Berg	2342897