Chemical Analysis Report

TLH-ROC-2022-04-27-02

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

Event Description: **Run 11**
Request ID: **RQ-2022-03-07-32**
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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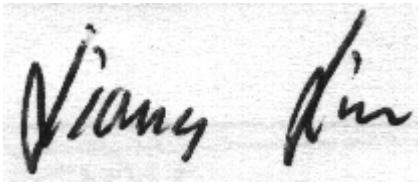
Certified by: Liang Lin, Environmental Administrator

Date Certified: 20-MAY-2022 09:13



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: 04/27/2022 11:50**

Field ID: G2TLHR0053 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2322474	EPA 180.1 Rev. 2.0	Turbidity	5.0		NTU	P413000	
	SM 2320 B-2011	Total Alkalinity	0.99	I	mg CaCO3/L	P413552	
	SM 2540 D-2011	TSS	4	I	mg/L	P413474	
	SM 4500-F- C-2011	Fluoride	0.035	U	mg F/L	P413555	
2322475	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P413432	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P413480	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P413262	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P413236	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P413881	
2322476	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P413077	

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: P413000

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413432

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413480

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413262

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413236

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413077

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P413552

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

Reference Method: SM 2540 D-2011
Batch ID: P413474

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P413555

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P413881

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: P413000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413432

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413480

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413262

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413236

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P413552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.6		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P413555

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413881

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322002	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413480

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322832	Kjeldahl Nitrogen	91.6	88.7	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322567	NO2NO3-N	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322409	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2323003	O-Phosphate-P	98.1	98.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P413555

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2322887	Fluoride	101	100	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P413881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325275	Organic Carbon	95.1	95.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413000

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322432	Turbidity	19.4	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322002	Ammonia-N	0.946	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413480

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322832	Kjeldahl Nitrogen	1.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P413262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322567	NO2NO3-N	0.247	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322409	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2323003	O-Phosphate-P	0.0623	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P413552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322887	Total Alkalinity	1.05	Sample	P	0 - 5.2

Reference Method: SM 4500-F- C-2011
Batch ID: P413555

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2322887	Fluoride	0.498	Spike	P	0 - 2.1

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P413881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325275	Organic Carbon	0.0888	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: A111740
Included Lab Sample IDs: 2322474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A111779
Included Lab Sample IDs: 2322476

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A111869
Included Lab Sample IDs: 2322475

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A111943
Included Lab Sample IDs: 2322475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A111944
Included Lab Sample IDs: 2322475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	97.2	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A111985
Included Lab Sample IDs: 2322474

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	96.0	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A111985
Included Lab Sample IDs: 2322474

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A112104
Included Lab Sample IDs: 2322475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	98.4	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-2011
Run ID: A112167
Included Lab Sample IDs: 2322475

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	95.7	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	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	96.4				19.4	
EPA 350.1 Rev. 2.0	Ammonia-N	103	99.8	101			0.946
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.1	91.6	88.7			1.75
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	97.8				0.247
EPA 365.1 Rev. 2.0	Total-P	101	101	102			1.32
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	98.1	98.2			0.0623
SM 2320 B-2011	Total Alkalinity	95.6				1.05	
SM 4500-F- C-2011	Fluoride	100	101	100			0.498
SM 5310 B-2011	Organic Carbon	94.6	95.1	95.0			0.0888

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2322474
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2322475
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2322475
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2322475
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2322475
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2322476
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2322474
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2322474
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2322474
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2322475

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	04/27/2022			04/27/2022 15:27	Khloe J Berg	2322474
EPA 350.1 Rev. 2.0	04/27/2022			05/05/2022 14:34	Judith K. Clark	2322475
EPA 351.2 Rev. 2.0	04/27/2022	05/11/2022 13:28	Alexandra J Mattheus	05/12/2022 14:07	Alexandra J Mattheus	2322475
EPA 353.2 Rev. 2.0	04/27/2022			05/03/2022 10:45	Beverly Y. Sanders	2322475
EPA 365.1 Rev. 2.0	04/27/2022	05/03/2022 16:15	Simonne.V. Calhoun	05/05/2022 15:32	James L Waggerby	2322475
EPA 365.1 Rev. 2.0 dissolved	04/27/2022			04/28/2022 15:46	Nathaniel J Jones	2322476
SM 2320 B-2011	04/27/2022			05/04/2022 11:20	Dale L. Simmons	2322474
SM 2540 D-2011	04/27/2022			04/29/2022 15:42	Yijie Li	2322474
SM 4500-F- C-2011	04/27/2022			05/04/2022 11:20	Dale L. Simmons	2322474
SM 5310 B-2011	04/27/2022			05/13/2022 21:01	Khloe J Berg	2322475