

Chemical Analysis Report

TLH-ROC-2021-09-22-02

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

Event Description: **Run 6**
Request ID: **RQ-2021-05-24-23**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Date Certified: 14-OCT-2021 09:33



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: Bailey Mill Creek @ Wilson Rd.

Collection Date/Time: 09/22/2021 10:35

Field ID: G1TLHR0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2277680	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P404067	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P404317	
		Sulfate	0.20	U	mg SO4/L	P404319	
	SM 2120 B-2011	Color (true)	290		PCU	P404064	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P404566	
	SM 2540 C-2011	TDS	95		mg/L	P404622	
	SM 2540 D-2011	TSS	4	I	mg/L	P404558	
	SM 4500 F-C-2011	Fluoride	0.060	I	mg F/L	P404570	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P404171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.94		mg N/L	P404159	
2277681	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P404164	
	EPA 365.1 Rev. 2.0	Total-P	0.086		mg P/L	P404186	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P404342	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.050		mg P/L	P404125	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P404067

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404317

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404319

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404171

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404159

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404164

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404186

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

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

Reference Method: SM 2120 B-2011
Batch ID: P404064

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P404566

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

Reference Method: SM 2540 C-2011
Batch ID: P404622

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P404558

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P404570

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P404342

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P404317

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P404319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P404171

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: P404159

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: P404164

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P404186

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P404125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.5		P	90 - 110

Reference Method: SM 2120 B-2011
 Batch ID: P404064

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	85 - 115

Reference Method: SM 2320 B-2011
 Batch ID: P404566

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.2		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P404570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P404342

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404317

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277646	Chloride	103		P	90 - 110
2277863	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277646	Sulfate	105		P	90 - 110
2277863	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277703	Ammonia-N	96.4	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277782	Kjeldahl Nitrogen	101	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404164

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277568	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2276769	Total-P	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277907	O-Phosphate-P	97.6	93.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P404570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278044	Fluoride	98.2	98.2	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P404342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2277446	Organic Carbon	110	109	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P404067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277537	Turbidity	5.96	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404317

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277646	Chloride	0.863	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277703	Ammonia-N	0.198	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277782	Kjeldahl Nitrogen	0.810	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277568	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404186

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2276769	Total-P	0.609	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277907	O-Phosphate-P	3.86	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P404064

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277536	Color (true)	2.70	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P404566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278044	Total Alkalinity	1.83	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P404622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278175	TDS	6.39	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P404570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278044	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P404342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2277446	Organic Carbon	0.355	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A107943

Included Lab Sample IDs: 2277680

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.9	99.5	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107944

Included Lab Sample IDs: 2277680

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107962

Included Lab Sample IDs: 2277682

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107976

Included Lab Sample IDs: 2277681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107981

Included Lab Sample IDs: 2277681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.5	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108003

Included Lab Sample IDs: 2277681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108018

Included Lab Sample IDs: 2277681

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108024

Included Lab Sample IDs: 2277680

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	99.9	P/P	90 - 110
Sulfate	99.9	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A108055

Included Lab Sample IDs: 2277681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	105	106	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108145

Included Lab Sample IDs: 2277680

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.2	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108145

Included Lab Sample IDs: 2277680

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					5.96	
EPA 300.0 Rev. 2.1	Chloride	99.3	103	102		0.863	
	Sulfate	99.4	105	102			
EPA 350.1 Rev. 2.0	Ammonia-N	98.0	96.4	96.2			0.198
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	101	99.7			0.810
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	103	102			0.487
EPA 365.1 Rev. 2.0	Total-P	109	108	108			0.609
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.5	97.6	93.9			3.86
SM 2120 B-2011	Color (true)	98.6				2.70	
SM 2320 B-2011	Total Alkalinity	98.2				1.83	
SM 2540 C-2011	TDS					6.39	
SM 4500 F-C-2011	Fluoride	101	98.2	98.2			0.0
SM 5310 B-2011	Organic Carbon	102	110	109			0.355

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2277680
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2277680
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2277680
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2277681
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2277681
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2277681
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2277681
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2277682
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2277680
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2277680
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2277680
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2277680
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2277680
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2277681

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	09/22/2021			09/22/2021 15:01	Khloe J Berg	2277680
EPA 300.0 Rev. 2.1	09/22/2021			09/28/2021 15:53	Roberta Tatti	2277680
EPA 350.1 Rev. 2.0	09/22/2021			09/24/2021 13:00	Ping Hua	2277681
EPA 351.2 Rev. 2.0	09/22/2021	09/24/2021 11:59	Benjamin T. Nordmann	09/27/2021 09:36	Alexandra J Mattheus	2277681
EPA 353.2 Rev. 2.0	09/22/2021			09/24/2021 11:25	Beverly Y. Sanders	2277681
EPA 365.1 Rev. 2.0	09/22/2021	09/24/2021 16:21	Madeline Gruver	09/27/2021 14:53	Lipi Saha	2277681
EPA 365.1 Rev. 2.0 dissolved	09/22/2021			09/23/2021 14:17	James L Waggerby	2277682
SM 2120 B-2011	09/22/2021			09/22/2021 15:54	Benjamin T. Nordmann	2277680
SM 2320 B-2011	09/22/2021			10/01/2021 23:50	Dale L. Simmons	2277680
SM 2540 C-2011	09/22/2021			09/28/2021 14:27	Yijie Li	2277680
SM 2540 D-2011	09/22/2021			09/28/2021 14:27	Yijie Li	2277680
SM 4500 F-C-2011	09/22/2021			10/01/2021 23:50	Dale L. Simmons	2277680
SM 5310 B-2011	09/22/2021			09/28/2021 02:12	Khloe J Berg	2277681