Chemical Analysis Report

SO-DIST-2020-09-25-03

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

Event Description: **2020 SMP : ENP**
Request ID: **RQ-2020-08-03-46**
Customer: **SO-DIST**
Project ID: **SMP**

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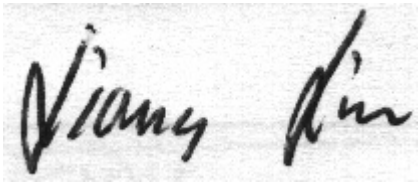
Date Certified: 15-OCT-2020 14:33



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: 8069-ENRE 5 **Collection Date/Time: 09/24/2020 11:41**

Field ID: G5SD0036 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2198432	EPA 180.1 Rev. 2.0	Turbidity	7.6		NTU	P387873	
	EPA 300.0 Rev. 2.1	Bromide	68		mg Br/L	P388433	
	SM 2320 B-2011	Total Alkalinity	112		mg CaCO3/L	P388088	
	SM 2540 D-2011	TSS	5	I	mg/L	P388204	
	SM 4500 F-C-2011	Fluoride	1.3		mg F/L	P388091	
2198434	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P387895	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.41		mg N/L	P388104	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388264	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P388275	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P388192	
2198436	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P387880	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high 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.

Sample Location: 8069-ENRE 13 **Collection Date/Time: 09/24/2020 12:14**

Field ID: G5SD0076 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2198433	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P387873	
	EPA 300.0 Rev. 2.1	Bromide	66		mg Br/L	P388433	
	SM 2320 B-2011	Total Alkalinity	125		mg CaCO3/L	P388088	
	SM 2540 D-2011	TSS	5	I	mg/L	P388204	
	SM 4500 F-C-2011	Fluoride	1.2		mg F/L	P388091	
2198435	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P387895	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P388104	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.009	I	mg N/L	P388264	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P388275	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P388192	
2198437	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P387880	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch relative percent difference and matrix spike recoveries for one of two spiked samples are unavailable because of high 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: P387873

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388433

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387895

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387880

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

Reference Method: SM 2320 B-2011
Batch ID: P388088

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

Reference Method: SM 2540 D-2011
Batch ID: P388204

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388192

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: P388433

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387895

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	92.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

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: P388275

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387880

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

Reference Method: SM 2320 B-2011
Batch ID: P388088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198159	Bromide	94.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387895

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198434	Ammonia-N	94.7	93.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198140	Kjeldahl Nitrogen	102	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198661	NO2NO3-N	96.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198140	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198437	O-Phosphate-P	99.9	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198158	Fluoride	102	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198970	Organic Carbon	102	102	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387873

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198231	Turbidity	0.733	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387895

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198434	Ammonia-N	0.846	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198140	Kjeldahl Nitrogen	2.33	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198661	NO2NO3-N	0.519	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388275

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198140	Total-P	0.973	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198437	O-Phosphate-P	0.671	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P388088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198158	Total Alkalinity	0.222	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P388091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198158	Fluoride	0.473	Spike	P	0 - 2.8

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P388192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198970	Organic Carbon	0.136	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: A101205
Included Lab Sample IDs: 2198432, 2198433

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: A101209
Included Lab Sample IDs: 2198436, 2198437

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	99.8	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A101212
Included Lab Sample IDs: 2198434, 2198435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	93.0	90.7	P/P	90 - 110
Ammonia-N	95.9	93.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A101307
Included Lab Sample IDs: 2198432, 2198433

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

Reference Method: SM 4500 F-C-2011
Run ID: A101307
Included Lab Sample IDs: 2198432, 2198433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A101338
Included Lab Sample IDs: 2198434, 2198435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.0	99.4	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A101348
Included Lab Sample IDs: 2198434, 2198435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A101378
Included Lab Sample IDs: 2198434, 2198435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits

Quality Assurance Report
Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A101378
Included Lab Sample IDs: 2198434, 2198435

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A101391
Included Lab Sample IDs: 2198432, 2198433

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	101	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A101428
Included Lab Sample IDs: 2198434, 2198435

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.8	96.5	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					0.733	
EPA 300.0 Rev. 2.1	Bromide	106	94.2				
EPA 350.1 Rev. 2.0	Ammonia-N	92.6	94.7	93.9			0.846
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	102	105			2.33
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.0	96.5			0.519
EPA 365.1 Rev. 2.0	Total-P	103	105	104			0.973
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	99.9	101			0.671
SM 2320 B-2011	Total Alkalinity	99.7				0.222	
SM 4500 F-C-2011	Fluoride	97.8	102	102			0.473
SM 5310 B-2011	Organic Carbon	104	102	102			0.136

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2198432, 2198433
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2198432, 2198433
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2198434, 2198435
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2198434, 2198435
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2198434, 2198435
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2198434, 2198435
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2198436, 2198437
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2198432, 2198433
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2198432, 2198433
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2198432, 2198433
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2198434, 2198435

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	09/25/2020			09/25/2020 14:41	Yen Ta	2198432, 2198433
EPA 300.0 Rev. 2.1	09/25/2020			10/08/2020 22:50	Lipi Saha	2198432
	09/25/2020			10/08/2020 23:07	Lipi Saha	2198433
EPA 350.1 Rev. 2.0	09/25/2020			09/27/2020 11:42	Ping Hua	2198434
	09/25/2020			09/27/2020 11:52	Ping Hua	2198435
EPA 351.2 Rev. 2.0	09/25/2020	10/01/2020 13:30	David Boose	10/02/2020 12:22	Elliott Rodriguez	2198434
	09/25/2020	10/01/2020 13:30	David Boose	10/02/2020 12:23	Elliott Rodriguez	2198435
EPA 353.2 Rev. 2.0	09/25/2020			10/06/2020 08:54	Beverly Y. Sanders	2198434
	09/25/2020			10/06/2020 08:56	Beverly Y. Sanders	2198435
EPA 365.1 Rev. 2.0	09/25/2020	10/06/2020 12:50	Yen Ta	10/08/2020 11:40	Lipi Saha	2198434
	09/25/2020	10/06/2020 12:50	Yen Ta	10/08/2020 11:41	Lipi Saha	2198435
EPA 365.1 Rev. 2.0 dissolved	09/25/2020			09/25/2020 17:05	Julia Storbeck	2198437
	09/25/2020			09/25/2020 17:23	Julia Storbeck	2198436
SM 2320 B-2011	09/25/2020			10/01/2020 05:28	Dale L. Simmons	2198432
	09/25/2020			10/01/2020 05:40	Dale L. Simmons	2198433
SM 2540 D-2011	09/25/2020			09/28/2020 15:25	Yijie Li	2198432, 2198433
SM 4500 F-C-2011	09/25/2020			10/01/2020 03:39	Dale L. Simmons	2198432
	09/25/2020			10/01/2020 03:45	Dale L. Simmons	2198433
SM 5310 B-2011	09/25/2020			10/03/2020 03:07	Lauren Lees	2198434
	09/25/2020			10/03/2020 03:19	Lauren Lees	2198435