

Chemical Analysis Report

SE-DIST-2021-08-26-01

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

Event Description: **SMP - 3129B1, 3107B (in house)**

Request ID: **RQ-2021-08-23-45**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

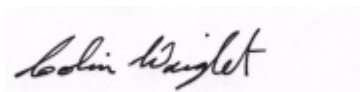
FL Dept. of Environmental Protection
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2199 South Rock Road
Fort Pierce, FL 34945
Attn: Drew Liddick

For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 20-SEP-2021 11:13



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: South Prong Sebastian @ Park Dock

Collection Date/Time: 08/25/2021 09:30

Field ID: G5SE0079

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2272067	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P403041	
	SM 2320 B-2011	Total Alkalinity	140		mg CaCO3/L	P403124	
	SM 2540 D-2011	TSS	5	I	mg/L	P403399	
	SM 4500 F-C-2011	Fluoride	0.46		mg F/L	P403126	
2272068	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P403208	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P403313	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.060		mg N/L	P403247	
	EPA 365.1 Rev. 2.0	Total-P	0.28		mg P/L	P403084	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P403118	
2272069	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.23		mg P/L	P403039	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403041

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403208

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403313

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403247

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: P403084

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403039

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

Reference Method: SM 2320 B-2011
Batch ID: P403124

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

Reference Method: SM 2540 D-2011
Batch ID: P403399

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P403126

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: P403118

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403313

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403247

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: P403084

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: P403039

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

Reference Method: SM 2320 B-2011
Batch ID: P403124

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P403126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.8		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P403118

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272035	Ammonia-N	93.2	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403313

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272046	Kjeldahl Nitrogen	103	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272035	NO2NO3-N	97.8	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272046	Total-P	107	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P403126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272034	Fluoride	98.9	100	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P403118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2272068	Organic Carbon	94.8	96.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P403041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2271970	Turbidity	3.36	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P403208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272035	Ammonia-N	2.11	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P403313

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272046	Kjeldahl Nitrogen	3.71	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P403247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272035	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P403084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272046	Total-P	4.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P403039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272069	O-Phosphate-P	0.960	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P403124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272034	Total Alkalinity	0.879	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011
Batch ID: P403126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272034	Fluoride	0.946	Spike	P	0 - 2.1

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P403118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2272068	Organic Carbon	0.830	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A107484

Included Lab Sample IDs: 2272069

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A107487

Included Lab Sample IDs: 2272067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A107528

Included Lab Sample IDs: 2272068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	104	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A107529

Included Lab Sample IDs: 2272068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.7	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A107535

Included Lab Sample IDs: 2272067

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A107535

Included Lab Sample IDs: 2272067

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107569

Included Lab Sample IDs: 2272068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A107595

Included Lab Sample IDs: 2272068

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107640

Included Lab Sample IDs: 2272068

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	94.6	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					3.36	
EPA 350.1 Rev. 2.0	Ammonia-N	99.0	93.2	95.4			2.11
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	98.1			3.71
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.8	96.8			0.985
EPA 365.1 Rev. 2.0	Total-P	103	107	100			4.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101					0.960
SM 2320 B-2011	Total Alkalinity	102				0.879	
SM 4500 F-C-2011	Fluoride	99.8	98.9	100			0.946
SM 5310 B-2011	Organic Carbon	95.6	94.8	96.0			0.830

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2272067
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2272068
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2272068
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2272068
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2272068
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2272069
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2272067
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2272067
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2272067
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2272068

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	08/26/2021			08/26/2021 15:25	Sarah A Nixon	2272067
EPA 350.1 Rev. 2.0	08/26/2021			08/31/2021 11:32	Ping Hua	2272068
EPA 351.2 Rev. 2.0	08/26/2021	09/02/2021 13:17	Benjamin T. Nordmann	09/03/2021 11:30	Alexandra J Mattheus	2272068
EPA 353.2 Rev. 2.0	08/26/2021			09/01/2021 10:13	Beverly Y. Sanders	2272068
EPA 365.1 Rev. 2.0	08/26/2021	08/27/2021 14:47	Simonne.V. Calhoun	08/30/2021 11:39	Shengyu Ding	2272068
EPA 365.1 Rev. 2.0 dissolved	08/26/2021			08/26/2021 15:07	James L Waggerby	2272069
SM 2320 B-2011	08/26/2021			08/28/2021 00:42	Dale L. Simmons	2272067
SM 2540 D-2011	08/26/2021			08/30/2021 14:36	Yijie Li	2272067
SM 4500 F-C-2011	08/26/2021			08/27/2021 22:57	Dale L. Simmons	2272067
SM 5310 B-2011	08/26/2021			08/28/2021 10:06	Madeline Gruver	2272068