

Chemical Analysis Report

SW-DIST-2022-12-21-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

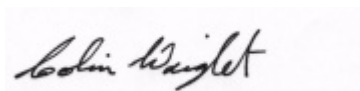
Event Description: **Pinellas Continuous Monitoring**
Request ID: **RQ-2022-12-12-20**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Sarah Meyer

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Certified by: Colin Wright, Program Administrator

Date Certified: 12-JAN-2023 09:02

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue 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: Homosassa River DownRiver/Stream of Boat Ramp

Collection Date/Time: 12/20/2022 10:40

Field ID: G5SW0189

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2377007	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P423848	
	SM 2320 B-2011	Total Alkalinity	128	Q	mg CaCO3/L	P424167	
	SM 2540 D-2015	TSS	5	I	mg/L	P424117	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P424392	
2377008	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P424223	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25	I	mg N/L	P423046	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P424337	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P424077	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P424182	
2377009	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P423852	

Ref. Method and Comment:

SM 2320 B-2011: The sample was analyzed out of hold time because the HVAC system in the laboratory was down resulting in excessively cold temperatures.

EPA 350.1 Rev. 2.0: 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: P423848

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423046

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424337

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424077

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423852

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

Reference Method: SM 2320 B-2011
Batch ID: P424167

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

Reference Method: SM 2540 D-2015
Batch ID: P424117

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P424392

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P424182

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: P423848

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423046

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: P424337

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: P424077

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: P423852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.6		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P424167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.0		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P424117

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	88.6		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P424392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	96 - 104

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P424182

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375396	Kjeldahl Nitrogen	95.1	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424337

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2377081	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2377008	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2377009	O-Phosphate-P	97.0	96.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P424392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2377380	Fluoride	96.4	97.0	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P424182

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2377374	Organic Carbon	97.4	96.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376906	Turbidity	5.24	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375177	Ammonia-N	0.327	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375396	Kjeldahl Nitrogen	8.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377081	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377008	Total-P	0.939	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P423852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377009	O-Phosphate-P	0.288	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P424167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377457	Total Alkalinity	0.646	Sample	P	0 - 3.8

Reference Method: SM 2540 D-2015
Batch ID: P424117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2376970	TSS	6.06	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P424392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377380	Fluoride	0.500	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P424182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2377374	Organic Carbon	0.325	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: A116606

Included Lab Sample IDs: 2377007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A116607

Included Lab Sample IDs: 2377009

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.2	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116719

Included Lab Sample IDs: 2377008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	91.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116747

Included Lab Sample IDs: 2377008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A116751

Included Lab Sample IDs: 2377007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.9	96.7	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116757

Included Lab Sample IDs: 2377008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116773

Included Lab Sample IDs: 2377008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116824

Included Lab Sample IDs: 2377008

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

Quality Assurance Report

Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A116836

Included Lab Sample IDs: 2377007

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	99.1	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	102				5.24	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2					0.327
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.3	95.1	105			8.90
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	103	103			0.0
EPA 365.1 Rev. 2.0	Total-P	103	103	104			0.939
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.6	97.0	96.7			0.288
SM 2320 B-2011	Total Alkalinity	95.0				0.646	
SM 2540 D-2015	TSS	88.6				6.06	
SM 4500-F- C-2011	Fluoride	95.9	96.4	97.0			0.500
SM 5310 B-2011	Organic Carbon	96.6	97.4	96.8			0.325

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2377007
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2377008
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2377008
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2377008
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2377008
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2377009
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2377007
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2377007
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2377007
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2377008

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	12/21/2022			12/21/2022 15:02	Anna M. Plaviak	2377007
EPA 350.1 Rev. 2.0	12/21/2022			01/06/2023 11:36	Ping Hua	2377008
EPA 351.2 Rev. 2.0	12/21/2022	01/03/2023 13:30	Simonne.V. Calhoun	01/04/2023 12:42	Samantha L Bates	2377008
EPA 353.2 Rev. 2.0	12/21/2022			01/10/2023 09:30	Beverly Y. Sanders	2377008
EPA 365.1 Rev. 2.0	12/21/2022	01/03/2023 14:10	Adam P Silver	01/05/2023 13:20	James L Waggeberby	2377008
EPA 365.1 Rev. 2.0 dissolved	12/21/2022			12/21/2022 15:59	Elise M. Gillis	2377009
SM 2320 B-2011	12/21/2022			01/05/2023 11:07	Dale L. Simmons	2377007
SM 2540 D-2015	12/21/2022			12/22/2022 16:12	Yijie Li	2377007
SM 4500-F- C-2011	12/21/2022			01/10/2023 18:52	Dale L. Simmons	2377007
SM 5310 B-2011	12/21/2022			01/05/2023 16:12	Khloe J Berg	2377008