Chemical Analysis Report

SO-DIST-2023-02-14-01

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

Event Description: **2022 SMP : Charlotte Harbor Part 2**
Request ID: **RQ-2023-02-06-56**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 314
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant Date Certified: 08-MAR-2023 10:17

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: CoralCreekEast **Collection Date/Time: 02/13/2023 09:55**

Field ID: G2SD0046 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386899	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P425795	
	SM 2320 B-2011	Total Alkalinity	154		mg CaCO3/L	P425908	
	SM 2540 D-2015	TSS	14		mg/L	P426315	
	SM 4500-F- C-2011	Fluoride	1.1		mg F/L	P425910	
2386901	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P426248	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P425816	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P426224	

Sample Location: WHIDDEN CREEK @ SOUTH POINT **Collection Date/Time: 02/13/2023 11:05**

Field ID: G2SD0029 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2386900	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P425795	
	SM 2320 B-2011	Total Alkalinity	152		mg CaCO3/L	P425908	
	SM 2540 D-2015	TSS	18	A	mg/L	P426315	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P425910	
2386902	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P426155	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P425915	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P426010	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P425816	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P426589	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425795

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426248

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425816

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

Reference Method: SM 2320 B-2011
Batch ID: P425908

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

Reference Method: SM 2540 D-2015
Batch ID: P426315

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P425910

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: P426224

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

Reference Method: SM 5310 B-2011
Batch ID: P426589

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: P425795

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426248

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

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: P426010

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425816

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

Reference Method: SM 2320 B-2011
Batch ID: P425908

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.3		P	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P426315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425910

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	96 - 104

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P426224

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

Reference Method: SM 5310 B-2011
Batch ID: P426589

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386977	Ammonia-N	99.0	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386901	Ammonia-N	105	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386984	Kjeldahl Nitrogen	98.1	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2386745	NO2NO3-N	98.0	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385600	Total-P	90.8	91.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P425910

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2385654	Fluoride	98.5	97.8	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388063	Organic Carbon	96.5	94.7	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P426589

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2389308	Organic Carbon	90.4	90.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P425795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387284	Turbidity	1.78	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386977	Ammonia-N	2.08	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386901	Ammonia-N	0.162	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P425915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386984	Kjeldahl Nitrogen	0.736	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426010

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386745	NO2NO3-N	5.19	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P425816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385600	Total-P	1.12	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P425908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385654	Total Alkalinity	1.09	Sample	P	0 - 3.8

Reference Method: SM 2540 D-2015
Batch ID: P426315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2386900	TSS	4.44	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P425910

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2385654	Fluoride	0.463	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388063	Organic Carbon	1.68	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P426589

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2389308	Organic Carbon	0.332	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: A117437
Included Lab Sample IDs: 2386899, 2386900

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

Reference Method: SM 2320 B-2011
Run ID: A117472
Included Lab Sample IDs: 2386899, 2386900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.6	99.1	P/P	90 - 110
Total Alkalinity	99.1	97.2	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A117472
Included Lab Sample IDs: 2386899, 2386900

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117485
Included Lab Sample IDs: 2386901, 2386902

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117514
Included Lab Sample IDs: 2386901, 2386902

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A117566
Included Lab Sample IDs: 2386902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.3	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A117592
Included Lab Sample IDs: 2386901

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A117602
Included Lab Sample IDs: 2386901

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117625
Included Lab Sample IDs: 2386901, 2386902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	101	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A117756
Included Lab Sample IDs: 2386902

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	94.3	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	101				1.78	
EPA 350.1 Rev. 2.0	Ammonia-N	95.2	99.0	102			2.08
	Ammonia-N	99.4	105	105			0.162
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.1	97.3			0.736
EPA 353.2 Rev. 2.0	NO2NO3-N	102	98.0	104			5.19
EPA 365.1 Rev. 2.0	Total-P	96.0	90.8	91.8			1.12
SM 2320 B-2011	Total Alkalinity	99.3				1.09	
SM 2540 D-2015	TSS	102				4.44	
SM 4500-F- C-2011	Fluoride	99.0	98.5	97.8			0.463
SM 5310 B-2011	Organic Carbon	96.0	96.5	94.7			1.68
	Organic Carbon	98.3	90.4	90.8			0.332

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2386899, 2386900
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2386901, 2386902
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2386901, 2386902
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2386901, 2386902
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2386901, 2386902
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2386899, 2386900
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2386899, 2386900
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2386899, 2386900
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2386901, 2386902

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	02/14/2023			02/14/2023 15:37	Anna M. Plaviak	2386900
	02/14/2023			02/14/2023 15:39	Anna M. Plaviak	2386899
EPA 350.1 Rev. 2.0	02/14/2023			02/21/2023 10:24	Ping Hua	2386902
	02/14/2023			02/22/2023 11:40	Ping Hua	2386901
EPA 351.2 Rev. 2.0	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:06	Judith K. Clark	2386901
	02/14/2023	02/16/2023 11:00	Simonne.V. Calhoun	02/23/2023 12:07	Judith K. Clark	2386902
EPA 353.2 Rev. 2.0	02/14/2023			02/17/2023 10:12	Beverly Y. Sanders	2386901
	02/14/2023			02/17/2023 10:13	Beverly Y. Sanders	2386902
EPA 365.1 Rev. 2.0	02/14/2023	02/15/2023 13:30	Adam P Silver	02/16/2023 13:00	James L Waggerby	2386901
	02/14/2023	02/15/2023 13:30	Adam P Silver	02/16/2023 13:01	James L Waggerby	2386902
SM 2320 B-2011	02/14/2023			02/15/2023 23:17	Dale L. Simmons	2386899
	02/14/2023			02/16/2023 00:16	Dale L. Simmons	2386900
SM 2540 D-2015	02/14/2023			02/17/2023 15:46	Yijie Li	2386899, 2386900
SM 4500-F- C-2011	02/14/2023			02/15/2023 20:45	Dale L. Simmons	2386899
	02/14/2023			02/15/2023 20:51	Dale L. Simmons	2386900
SM 5310 B-2011	02/14/2023			02/22/2023 01:42	Elise M. Gillis	2386901
	02/14/2023			03/01/2023 16:12	Elise M. Gillis	2386902