Chemical Analysis Report

SE-DIST-2022-04-15-01

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

Event Description: **Micco Valkaria/Sebastian Deploy**
Request ID: **RQ-2022-04-11-41**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 06-MAY-2022 10:50

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: C-40 Six Mile Marsh **Collection Date/Time: 04/14/2022 10:00**

Field ID: G3SE0055 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2319726	DEP SOP: NU-094-1	Color (true)**	200		PCU	P412436	
	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P412439	
	EPA 300.0 Rev. 2.1	Chloride	44	A	mg Cl/L	P412952	
		Sulfate	2.2	A	mg SO4/L	P412955	
	SM 2320 B-2011	Total Alkalinity	40		mg CaCO3/L	P412807	
	SM 2540 C-2011	TDS	200	A	mg/L	P413061	
	SM 2540 D-2011	TSS	3	I A	mg/L	P412988	
	SM 4500-F- C-2011	Fluoride	0.095	I	mg F/L	P412810	
2319727	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P412626	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P412835	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.034		mg N/L	P412622	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P412670	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P412783	

Ref. Method and Comment:
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: DEP SOP: NU-094-1
Batch ID: P412436

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412439

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412952

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412955

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412626

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412835

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412622

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412670

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

Reference Method: SM 2320 B-2011
Batch ID: P412807

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P413061

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P412988

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P412810

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P412783

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P412436

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.3		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412439

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412952

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412955

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412626

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412622

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412670

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

Reference Method: SM 2320 B-2011
Batch ID: P412807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.6		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P412810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P412783

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412952

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319726	Chloride	96.9		P	90 - 110
2319765	Chloride	96.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319726	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412626

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319680	Ammonia-N	95.4	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319291	Kjeldahl Nitrogen	96.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412622

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319710	NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412670

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319713	Total-P	103	102	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P412810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319704	Fluoride	100	99.4	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319870	Organic Carbon	97.1	97.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P412436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319702	Color (true)	0.283	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319572	Turbidity	12.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319726	Chloride	0.748	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P412955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319726	Sulfate	1.37	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P412626

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319680	Ammonia-N	0.0	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319291	Kjeldahl Nitrogen	4.79	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P412622

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319710	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P412670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319713	Total-P	0.786	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P412807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319704	Total Alkalinity	0.146	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P413061

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319726	TDS	4.49	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P412810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319704	Fluoride	0.476	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P412783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319870	Organic Carbon	0.556	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A111505
Included Lab Sample IDs: 2319726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A111506
Included Lab Sample IDs: 2319726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A111572
Included Lab Sample IDs: 2319727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A111574
Included Lab Sample IDs: 2319727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.0	97.6	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A111644
Included Lab Sample IDs: 2319727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	99.3	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A111656
Included Lab Sample IDs: 2319726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.9	97.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A111656
Included Lab Sample IDs: 2319726

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A111672
Included Lab Sample IDs: 2319727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	98.7	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A111715
Included Lab Sample IDs: 2319726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	99.6	P/P	90 - 110
Sulfate	99.7	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A111850
Included Lab Sample IDs: 2319727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	107	96.1	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		Precision		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	99.3				0.283	
EPA 180.1 Rev. 2.0	Turbidity	96.3				12.0	
EPA 300.0 Rev. 2.1	Chloride	98.4	96.9	96.6		0.748	
	Sulfate	97.0	96.8			1.37	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	95.4	95.4			0.0
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.6	96.5	101			4.79
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	97.0	97.0			0.0
EPA 365.1 Rev. 2.0	Total-P	102	103	102			0.786
SM 2320 B-2011	Total Alkalinity	96.6				0.146	
SM 2540 C-2011	TDS					4.49	
SM 4500-F- C-2011	Fluoride	99.6	100	99.4			0.476
SM 5310 B-2011	Organic Carbon	96.0	97.1	97.9			0.556

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2319726
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2319726
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2319726
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2319726
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2319727
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2319727
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2319727
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2319727
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2319726
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2319726
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2319726
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2319726
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2319727

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	04/15/2022			04/15/2022 16:29	Anna M. Plaviak	2319726
EPA 180.1 Rev. 2.0	04/15/2022			04/15/2022 14:05	Khloe J Berg	2319726
EPA 300.0 Rev. 2.1	04/15/2022			04/26/2022 12:22	Anna M. Plaviak	2319726
EPA 350.1 Rev. 2.0	04/15/2022			04/20/2022 11:04	Ping Hua	2319727
EPA 351.2 Rev. 2.0	04/15/2022	04/28/2022 09:58	Samantha L Bates	05/02/2022 11:32	Alexandra J Mattheus	2319727
EPA 353.2 Rev. 2.0	04/15/2022			04/19/2022 16:45	Nathaniel J Jones	2319727
EPA 365.1 Rev. 2.0	04/15/2022	04/22/2022 16:40	Simonne.V. Calhoun	04/25/2022 14:53	Sarah A Nixon	2319727
SM 2320 B-2011	04/15/2022			04/22/2022 04:49	Sarah A Nixon	2319726
SM 2540 C-2011	04/15/2022			04/20/2022 15:36	Yijie Li	2319726
SM 2540 D-2011	04/15/2022			04/20/2022 15:36	Yijie Li	2319726
SM 4500-F- C-2011	04/15/2022			04/22/2022 04:49	Sarah A Nixon	2319726
SM 5310 B-2011	04/15/2022			04/21/2022 05:03	Judith K. Clark	2319727