

Chemical Analysis Report

SE-DIST-2022-07-07-02

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

Event Description: **Micco Valkaria**
Request ID: **RQ-2022-07-04-58**
Customer: **SE-DIST**
Project ID: **SMP**

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

Date Certified: 26-JUL-2022 08:38

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray 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: C-40 Six Mile Marsh

Collection Date/Time: 07/06/2022 09:35

Field ID: G3SE0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2339648	DEP SOP: NU-094-1	Color (true)	210		PCU	P416282	
	EPA 180.1 Rev. 2.0	Turbidity	5.8		NTU	P416290	
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P416731	
		Sulfate	1.1		mg SO4/L	P416734	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P416656	
	SM 2540 C-2011	TDS	210	A	mg/L	P416546	
	SM 2540 D-2011	TSS	7	IA	mg/L	P416549	
	SM 4500-F- C-2011	Fluoride	0.10		mg F/L	P417023	MS
2339649	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P416421	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.7		mg N/L	P416391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P416651	
	EPA 365.1 Rev. 2.0	Total-P	0.26		mg P/L	P416399	
	SM 5310 B-2011	Organic Carbon	32		mg C/L	P416395	

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: P416282

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

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

Reference Method: SM 2320 B-2011
Batch ID: P416656

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: P416546

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P416549

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P417023

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P416395

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: P416282

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

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: P416391

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: P416651

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

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

Reference Method: SM 2320 B-2011
Batch ID: P416656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.9		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P417023

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

Reference Method: SM 5310 B-2011
Batch ID: P416395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339681	Chloride	95.7		P	90 - 110
2339743	Chloride	95.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339681	Sulfate	92.2		P	90 - 110
2339743	Sulfate	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339604	Ammonia-N	97.0	95.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339376	Kjeldahl Nitrogen	91.6	96.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339556	NO2NO3-N	94.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339682	Total-P	104	106	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P417023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2341350	Fluoride	111	110	F/F	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P416395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2339524	Organic Carbon	99.9	99.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P416282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339602	Color (true)	0.408	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P416290

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339270	Turbidity	6.36	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416731

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339681	Chloride	0.443	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P416734

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339681	Sulfate	0.455	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P416421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339604	Ammonia-N	1.16	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P416391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339376	Kjeldahl Nitrogen	2.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P416651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339556	NO2NO3-N	1.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P416399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339682	Total-P	1.52	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P416656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339964	Total Alkalinity	0.890	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P416546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339648	TDS	4.76	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P417023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2341350	Fluoride	1.00	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P416395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2339524	Organic Carbon	0.138	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: A113337
Included Lab Sample IDs: 2339648

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: A113341
Included Lab Sample IDs: 2339648

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

Reference Method: SM 5310 B-2011
Run ID: A113409
Included Lab Sample IDs: 2339649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.6	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A113417
Included Lab Sample IDs: 2339649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.4	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A113462
Included Lab Sample IDs: 2339648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.5	98.5	P/P	90 - 110
Sulfate	96.2	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A113477
Included Lab Sample IDs: 2339649

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A113493
Included Lab Sample IDs: 2339649

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A113503
Included Lab Sample IDs: 2339649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	96.0	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A113504

Included Lab Sample IDs: 2339648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.6	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A113658

Included Lab Sample IDs: 2339648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	105	104	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	MS
DEP SOP: NU-094-1	Color (true)	99.5			0.408	
EPA 180.1 Rev. 2.0	Turbidity	97.2			6.36	
EPA 300.0 Rev. 2.1	Chloride	98.0	95.7	95.4	0.443	
	Sulfate	97.6	92.2	94.7	0.455	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	97.0	95.8		1.16
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.0	91.6	96.7		2.92
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	94.0	96.0		1.87
EPA 365.1 Rev. 2.0	Total-P	103	104	106		1.52
SM 2320 B-2011	Total Alkalinity	99.9			0.890	
SM 2540 C-2011	TDS				4.76	
SM 4500-F- C-2011	Fluoride	104	111	110		1.00
SM 5310 B-2011	Organic Carbon	97.8	99.9	99.7		0.138

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2339648
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2339648
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2339648
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2339648
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2339649
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2339649
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2339649
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2339649
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2339648
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2339648
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2339648
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2339648
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2339649

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	07/07/2022			07/07/2022 14:53	Blanca Fach	2339648
EPA 180.1 Rev. 2.0	07/07/2022			07/07/2022 14:24	Anna M. Plaviak	2339648
EPA 300.0 Rev. 2.1	07/07/2022			07/14/2022 22:06	Anna M. Plaviak	2339648
EPA 350.1 Rev. 2.0	07/07/2022			07/11/2022 12:06	Ping Hua	2339649
EPA 351.2 Rev. 2.0	07/07/2022	07/12/2022 16:32	Samantha L Bates	07/13/2022 16:52	Alexandra J Mattheus	2339649
EPA 353.2 Rev. 2.0	07/07/2022			07/14/2022 10:53	Judith K. Clark	2339649
EPA 365.1 Rev. 2.0	07/07/2022	07/13/2022 09:52	Adam P Silver	07/13/2022 15:01	James L Waggerby	2339649
SM 2320 B-2011	07/07/2022			07/13/2022 23:48	Dale L. Simmons	2339648
SM 2540 C-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339648
SM 2540 D-2011	07/07/2022			07/08/2022 15:22	Yijie Li	2339648
SM 4500-F- C-2011	07/07/2022			07/21/2022 05:38	Dale L. Simmons	2339648
SM 5310 B-2011	07/07/2022			07/09/2022 03:28	Khloe J Berg	2339649