

Chemical Analysis Report

SW-DIST-2023-06-02-01

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

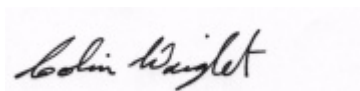
Event Description: **Run 1**
Request ID: **RQ-2023-06-05-33**
Customer: **SW-DIST**
Project ID: **SMP**

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

Date Certified: 22-JUN-2023 08:33

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: CHASSAHOWITZKA RIVER DOWNSTREAM OF HOUSES **Collection Date/Time: 06/01/2023 10:20**

Field ID: G5SW0065

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2414238	DEP SOP: NU-094-1	Color (true)	18		PCU	P430746	
	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P430750	
	EPA 300.0 Rev. 2.1	Chloride	4.6E+03		mg Cl/L	P430960	
		Sulfate	650		mg SO4/L	P430964	
	SM 2320 B-2011	Total Alkalinity	177		mg CaCO3/L	P431028	
	SM 2540 C-2015	TDS	8.28E+03		mg/L	P431083	
	SM 2540 D-2015	TSS	4	IA	mg/L	P431071	
	SM 4500-F- C-2011	Fluoride	0.31		mg F/L	P431430	
2414239	EPA 350.1 Rev. 2.0	Ammonia-N	0.066		mg N/L	P430847	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P431036	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.092		mg N/L	P431212	
	EPA 365.1 Rev. 2.0	Total-P	0.019		mg P/L	P430793	
	SM 5310 B-2011	Organic Carbon	3.6		mg C/L	P430900	

Ref. Method and Comment:

SM 2540 D-2015: 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: P430746

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430960

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430964

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430847

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431036

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431212

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430793

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

Reference Method: SM 2320 B-2011
Batch ID: P431028

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P431083

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P431071

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P431430

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P430900

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: P430746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430960

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430964

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: P430847

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431036

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431212

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: P430793

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

Reference Method: SM 2320 B-2011
Batch ID: P431028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	92 - 105

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P431083

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

Reference Method: SM 2540 D-2015
Batch ID: P431071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	91.2		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P431430

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

Reference Method: SM 5310 B-2011
Batch ID: P430900

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 300.0 Rev. 2.1
Batch ID: P430960

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413402	Chloride	103		P	90 - 110
2414251	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413402	Sulfate	96.9		P	90 - 110
2414251	Sulfate	98.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430847

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413792	Ammonia-N	98.0	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413962	Kjeldahl Nitrogen	99.2	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413657	NO2NO3-N	97.6	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413962	Total-P	99.6	99.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P431430

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2414949	Fluoride	105	104	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P430900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413962	Organic Carbon	89.3	92.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P430746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414182	Color (true)	4.80	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P430750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414248	Turbidity	17.5	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430960

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413402	Chloride	1.99	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413402	Sulfate	2.95	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P430847

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413792	Ammonia-N	0.987	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431036

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413962	Kjeldahl Nitrogen	0.709	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413657	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P430793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413962	Total-P	0.240	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P431028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414186	Total Alkalinity	0.863	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P431083

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414248	TDS	4.62	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P431430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2414949	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P430900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413962	Organic Carbon	2.49	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: A119551

Included Lab Sample IDs: 2414238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119552

Included Lab Sample IDs: 2414238

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119602

Included Lab Sample IDs: 2414239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.9	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119605

Included Lab Sample IDs: 2414238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.1	96.5	P/P	90 - 110
Sulfate	98.1	98.4	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119626

Included Lab Sample IDs: 2414239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.8	94.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119636

Included Lab Sample IDs: 2414239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	97.8	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A119676

Included Lab Sample IDs: 2414238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119727

Included Lab Sample IDs: 2414239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A119777

Included Lab Sample IDs: 2414239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	95.0	96.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119876

Included Lab Sample IDs: 2414238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	103	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			4.80	
EPA 180.1 Rev. 2.0	Turbidity	99.4			17.5	
EPA 300.0 Rev. 2.1	Chloride	98.3	103	103	1.99	
	Sulfate	97.0	96.9	98.5	2.95	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0	98.0	99.2		0.987
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	99.2	98.4		0.709
EPA 353.2 Rev. 2.0	NO2NO3-N	96.5	97.6	97.0		0.466
EPA 365.1 Rev. 2.0	Total-P	99.0	99.6	99.9		0.240
SM 2320 B-2011	Total Alkalinity	99.4			0.863	
SM 2540 C-2015	TDS	102			4.62	
SM 2540 D-2015	TSS	91.2				
SM 4500-F- C-2011	Fluoride	99.3	105	104		0.480
SM 5310 B-2011	Organic Carbon	96.6	89.3	92.1		2.49

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2414238
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2414238
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2414238
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2414238
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2414239
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2414239
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2414239
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2414239
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2414238
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2414238
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2414238
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2414238
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2414239

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	06/02/2023			06/02/2023 15:40	Alexis Price	2414238
EPA 180.1 Rev. 2.0	06/02/2023			06/02/2023 14:01	Alexis Price	2414238
EPA 300.0 Rev. 2.1	06/02/2023			06/07/2023 15:51	James L Waggerby	2414238
EPA 350.1 Rev. 2.0	06/02/2023			06/06/2023 11:19	Khloe J Berg	2414239
EPA 351.2 Rev. 2.0	06/02/2023	06/09/2023 11:22	Ping Hua	06/12/2023 11:13	Samantha L Bates	2414239
EPA 353.2 Rev. 2.0	06/02/2023			06/13/2023 14:41	Anna M. Plaviak	2414239
EPA 365.1 Rev. 2.0	06/02/2023	06/05/2023 14:34	Adam P Silver	06/07/2023 14:03	James L Waggerby	2414239
SM 2320 B-2011	06/02/2023			06/08/2023 19:31	Chandler E Cox	2414238
SM 2540 C-2015	06/02/2023			06/06/2023 14:58	Yijie Li	2414238
SM 2540 D-2015	06/02/2023			06/06/2023 14:58	Yijie Li	2414238
SM 4500-F- C-2011	06/02/2023			06/16/2023 21:53	Adam P Silver	2414238
SM 5310 B-2011	06/02/2023			06/06/2023 21:34	Elise M. Gillis	2414239