Chemical Analysis Report

NW-DIST-2023-04-11-02

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

Event Description: **Navarre Run resample**
Request ID: **RQ-2023-04-10-60**
Customer: **NW-DIST**
Project ID: **SMP**

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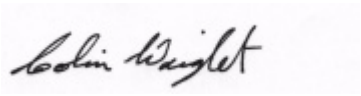
Date Certified: 04-MAY-2023 14:37



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: Williams Creek Upstream of HWY 98 **Collection Date/Time: 04/10/2023 11:20**

Field ID: G4NW0531 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2399558	DEP SOP: NU-094-1	Color (true)	9.6		PCU	P428337	
	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P428331	
	EPA 300.0 Rev. 2.1	Chloride	1.1E+04		mg Cl/L	P428764	
		Sulfate	1.5E+03		mg SO4/L	P428767	
	SM 2320 B-2011	Total Alkalinity	74		mg CaCO3/L	P428508	
	SM 2540 C-2015	TDS	1.84E+04		mg/L	P428905	
	SM 2540 D-2015	TSS	4	I	mg/L	P428824	
	SM 4500-F- C-2011	Fluoride	0.68		mg F/L	P428419	
2399559	EPA 350.1 Rev. 2.0	Ammonia-N	0.089		mg N/L	P428521	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P428408	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.043		mg N/L	P428431	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P428550	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P429038	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
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: DEP SOP: NU-094-1
Batch ID: P428337

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

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

Reference Method: SM 2320 B-2011
Batch ID: P428508

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: P428905

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P428824

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429038

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: P428337

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

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: P428408

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: P428431

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: P428550

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

Reference Method: SM 2320 B-2011
Batch ID: P428508

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.6		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P428905

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.8		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P428824

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

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P429038

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399545	Chloride	100		P	90 - 110
2399662	Chloride	98.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399545	Sulfate	99.6		P	90 - 110
2399662	Sulfate	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398768	Kjeldahl Nitrogen	101	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398767	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399841	Total-P	94.5	94.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2398269	Fluoride	100	99.4	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P429038

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2399578	Organic Carbon	96.6	96.9	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P428337

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399511	Color (true)	1.17	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P428331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399511	Turbidity	2.11	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428764

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399545	Chloride	1.37	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P428767

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399545	Sulfate	1.58	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P428521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399578	Ammonia-N	0.253	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P428408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398768	Kjeldahl Nitrogen	5.75	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P428431

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398767	NO2NO3-N	0.460	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P428550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399841	Total-P	0.123	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P428508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399501	Total Alkalinity	1.02	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P428905

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399855	TDS	1.87	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P428419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2398269	Fluoride	0.464	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P429038

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2399578	Organic Carbon	0.238	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: A118504
Included Lab Sample IDs: 2399558

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

Reference Method: DEP SOP: NU-094-1
Run ID: A118508
Included Lab Sample IDs: 2399558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.4	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A118544
Included Lab Sample IDs: 2399558

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A118550
Included Lab Sample IDs: 2399559

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

Reference Method: SM 2320 B-2011
Run ID: A118577
Included Lab Sample IDs: 2399558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.4	94.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A118584
Included Lab Sample IDs: 2399559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A118612
Included Lab Sample IDs: 2399559

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A118633
Included Lab Sample IDs: 2399559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	100	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A118641
Included Lab Sample IDs: 2399558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.2	97.2	P/P	90 - 110
Sulfate	97.7	98.5	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A118807
Included Lab Sample IDs: 2399559

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.8	95.9	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)	100				1.17	
EPA 180.1 Rev. 2.0	Turbidity	99.6				2.11	
EPA 300.0 Rev. 2.1	Chloride	99.9	100	98.8		1.37	
	Sulfate	100	99.6	99.2		1.58	
EPA 350.1 Rev. 2.0	Ammonia-N	97.0					0.253
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	101	94.1			5.75
EPA 353.2 Rev. 2.0	NO2NO3-N	102	103	103			0.460
EPA 365.1 Rev. 2.0	Total-P	101	94.5	94.6			0.123
SM 2320 B-2011	Total Alkalinity	94.6				1.02	
SM 2540 C-2015	TDS	96.8				1.87	
SM 2540 D-2015	TSS	102					
SM 4500-F- C-2011	Fluoride	98.8	100	99.4			0.464
SM 5310 B-2011	Organic Carbon	98.2	96.6	96.9			0.238

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2399558
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2399558
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2399558
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2399558
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2399559
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2399559
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2399559
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2399559
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2399558
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2399558
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2399558
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2399558
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2399559

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	04/11/2023			04/11/2023 15:28	Anna M. Plaviak	2399558
EPA 180.1 Rev. 2.0	04/11/2023			04/11/2023 13:42	Chandler E Cox	2399558
EPA 300.0 Rev. 2.1	04/11/2023			04/19/2023 15:49	James L Waggerby	2399558
EPA 350.1 Rev. 2.0	04/11/2023			04/14/2023 13:47	Ping Hua	2399559
EPA 351.2 Rev. 2.0	04/11/2023	04/13/2023 12:30	Simonne.V. Calhoun	04/17/2023 14:36	Samantha L Bates	2399559
EPA 353.2 Rev. 2.0	04/11/2023			04/13/2023 10:38	Beverly Y. Sanders	2399559
EPA 365.1 Rev. 2.0	04/11/2023	04/17/2023 18:31	Adam P Silver	04/18/2023 12:00	James L Waggerby	2399559
SM 2320 B-2011	04/11/2023			04/14/2023 00:29	Dale L. Simmons	2399558
SM 2540 C-2015	04/11/2023			04/14/2023 15:46	Yijie Li	2399558
SM 2540 D-2015	04/11/2023			04/14/2023 15:46	Yijie Li	2399558
SM 4500-F- C-2011	04/11/2023			04/12/2023 20:56	Dale L. Simmons	2399558
SM 5310 B-2011	04/11/2023			04/27/2023 00:41	Elise M. Gillis	2399559