

Chemical Analysis Report

SO-DIST-2024-02-09-04

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

Event Description: **2024 SMP : LaBella-Ella-Ella**
Request ID: **RQ-2024-02-05-38**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Marek Topolski, Environmental Specialist III

Date Certified: 01-MAR-2024 12:43

A handwritten signature in black ink, appearing to read "Marek Topolski", with a stylized, flowing script.

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: JACKS BRANCH

Collection Date/Time: 02/08/2024 09:25

Field ID: G3SD0176					Matrix: W-SURF-FRH			
Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes	
2468010	DEP SOP: NU-094-1	Color (true)	110		PCU	P441241		
	EPA 180.1 Rev. 2.0	Turbidity	0.80	I	NTU	P441251		
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P441601		
		Sulfate	6.7		mg SO4/L	P441604		
	SM 2320 B-2011	Total Alkalinity	108		mg CaCO3/L	P441799		
	SM 2540 C-2015	TDS	203		mg/L	P441863		
	SM 2540 D-2015	TSS	2	I	mg/L	P441736		
	SM 4500-F- C-2011	Fluoride	0.093	I	mg F/L	P441946	MS	
2468011	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P441503		
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P441341		
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P441387		
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P441535		
	SM 5310 B-2014	Organic Carbon	20		mg C/L	P441450		

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: P441241

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P441251

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441601

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441604

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441503

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P441341

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P441387

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P441535

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

Reference Method: SM 2320 B-2011
Batch ID: P441799

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: P441863

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P441736

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P441946

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P441450

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: P441241

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P441251

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441604

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441503

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P441341

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P441387

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P441535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P441799

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.0		P	92 - 105

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P441863

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	94.8		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P441736

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	102		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P441946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P441450

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467753	Chloride	99.6		P	90 - 110
2468010	Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467753	Sulfate	105		P	90 - 110
2468010	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2468011	Ammonia-N	96.8	96.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P441341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467951	Kjeldahl Nitrogen	107	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P441387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467951	NO2NO3-N	96.8	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P441535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2468468	Total-P	104	107	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P441946

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467942	Fluoride	105	107	P/F	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P441450

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2467951	Organic Carbon	100	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P441241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467938	Color (true)	6.28	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P441251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467880	Turbidity	13.8	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467753	Chloride	4.38	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P441604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467753	Sulfate	3.62	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P441503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2468011	Ammonia-N	0.518	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P441341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467951	Kjeldahl Nitrogen	0.0723	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P441387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467951	NO2NO3-N	1.17	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P441535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2468468	Total-P	1.65	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P441799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2468712	Total Alkalinity	1.18	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P441863

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467938	TDS	3.86	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P441946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467942	Fluoride	1.48	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P441450

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2467951	Organic Carbon	1.00	Spike	P	0 - 15

* 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: A124094
Included Lab Sample IDs: 2468010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	96.9	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A124097
Included Lab Sample IDs: 2468010

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A124140
Included Lab Sample IDs: 2468011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 5310 B-2014
Run ID: A124180
Included Lab Sample IDs: 2468011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	101	P/P	85 - 115

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A124190
Included Lab Sample IDs: 2468011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	96.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124199
Included Lab Sample IDs: 2468011

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A124232
Included Lab Sample IDs: 2468010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	99.8	P/P	90 - 110
Sulfate	103	99.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A124261
Included Lab Sample IDs: 2468011

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A124320
Included Lab Sample IDs: 2468010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A124381
Included Lab Sample IDs: 2468010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	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)	98.0			6.28	
EPA 180.1 Rev. 2.0	Turbidity	103			13.8	
EPA 300.0 Rev. 2.1	Chloride	106	99.6	99.0	4.38	
	Sulfate	107	105	102	3.62	
EPA 350.1 Rev. 2.0	Ammonia-N	101	96.8	96.2		0.518
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.8	107	107		0.0723
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.8	98.4		1.17
EPA 365.1 Rev. 2.0	Total-P	105	104	107		1.65
SM 2320 B-2011	Total Alkalinity	98.0			1.18	
SM 2540 C-2015	TDS	94.8			3.86	
SM 2540 D-2015	TSS	102				
SM 4500-F- C-2011	Fluoride	99.0	105	107		1.48
SM 5310 B-2014	Organic Carbon	101	100	101		1.00

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2468010
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2468010
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2468010
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2468010
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2468011
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2468011
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2468011
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2468011
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2468010
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2468010
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2468010
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2468010
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2468011

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	02/09/2024			02/09/2024 15:17	Anna M. Plaviak	2468010
EPA 180.1 Rev. 2.0	02/09/2024			02/09/2024 14:50	Khloe J Berg	2468010
EPA 300.0 Rev. 2.1	02/09/2024			02/16/2024 04:28	James L Waggeberby	2468010
EPA 350.1 Rev. 2.0	02/09/2024			02/15/2024 12:42	Ping Hua	2468011
EPA 351.2 Rev. 2.0	02/09/2024	02/14/2024 10:54	Ping Hua	02/15/2024 11:06	Samantha L Bates	2468011
EPA 353.2 Rev. 2.0	02/09/2024			02/13/2024 14:39	Fadila Guebre	2468011
EPA 365.1 Rev. 2.0	02/09/2024	02/16/2024 14:14	Adam P Silver	02/20/2024 11:18	James L Waggeberby	2468011
SM 2320 B-2011	02/09/2024			02/21/2024 09:39	Dale L. Simmons	2468010
SM 2540 C-2015	02/09/2024			02/14/2024 16:46	Yijie Li	2468010
SM 2540 D-2015	02/09/2024			02/14/2024 16:46	Yijie Li	2468010
SM 4500-F- C-2011	02/09/2024			02/23/2024 23:00	Dale L. Simmons	2468010
SM 5310 B-2014	02/09/2024			02/14/2024 20:44	Khloe J Berg	2468011