

Chemical Analysis Report

SO-DIST-2024-02-29-01

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
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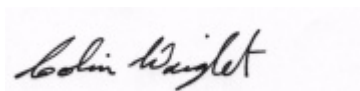
Event Description: **2024 SMP: Punta Rassa Cover**
Request ID: **RQ-2024-02-26-50**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Colin Wright, Program Administrator

Date Certified: 20-MAR-2024 09:08



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: Punta Rassa Cove

Collection Date/Time: 02/28/2024 10:10

Field ID: G2SD0047

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2472463	DEP SOP: NU-094-1	Color (true)	43	A	PCU	P442161	
	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P442168	
	EPA 300.0 Rev. 2.1	Chloride	9.3E+03		mg Cl/L	P442687	
		Sulfate	1.3E+03		mg SO4/L	P442466	
	SM 2320 B-2011	Total Alkalinity	116	IA	mg CaCO3/L	P442481	
	SM 2540 C-2015	TDS	1.84E+04		mg/L	P442434	
	SM 2540 D-2015	TSS	3		mg/L	P442562	
	SM 4500-F- C-2011	Fluoride	0.72		mg F/L	P442483	
2472464	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P442392	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P442178	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P442417	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P442176	
	SM 5310 B-2014	Organic Carbon	9.7		mg C/L	P442348	

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: P442161

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442168

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442466

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442687

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442392

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442178

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442417

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442176

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

Reference Method: SM 2320 B-2011
Batch ID: P442481

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: P442434

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P442562

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P442483

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P442348

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: P442161

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442168

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442466

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442687

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442392

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442178

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442417

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: P442176

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

Reference Method: SM 2320 B-2011
Batch ID: P442481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	92 - 105

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P442434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.8		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P442562

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.6		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P442483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P442348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472425	Sulfate	96.0		P	90 - 110
2472536	Sulfate	94.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442687

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472522	Chloride	94.1		P	90 - 110
2472557	Chloride	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442392

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472464	Ammonia-N	96.6	96.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442178

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472304	Kjeldahl Nitrogen	107	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472412	NO2NO3-N	99.6	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442176

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472304	Total-P	104	104	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P442483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2469610	Fluoride	99.6	101	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P442348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2472603	Organic Carbon	88.3	90.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P442161

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472463	Color (true)	8.61	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P442168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472363	Turbidity	8.74	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472425	Sulfate	0.0151	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P442687

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472522	Chloride	4.07	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P442392

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472464	Ammonia-N	0.150	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P442178

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472304	Kjeldahl Nitrogen	4.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P442417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472412	NO2NO3-N	0.489	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P442176

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472304	Total-P	0.602	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P442481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472614	Total Alkalinity	0.315	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P442434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472055	TDS	6.82	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P442483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2469610	Fluoride	0.947	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P442348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2472603	Organic Carbon	1.80	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: A124477
Included Lab Sample IDs: 2472463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.2	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A124482
Included Lab Sample IDs: 2472463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A124529
Included Lab Sample IDs: 2472464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.9	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A124530
Included Lab Sample IDs: 2472464

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

Reference Method: SM 5310 B-2014
Run ID: A124556
Included Lab Sample IDs: 2472464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.5	114	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A124577
Included Lab Sample IDs: 2472464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.1	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A124581
Included Lab Sample IDs: 2472463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	95.5	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A124589
Included Lab Sample IDs: 2472464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	105	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A124624
Included Lab Sample IDs: 2472463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	99.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A124624
Included Lab Sample IDs: 2472463

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A124710
Included Lab Sample IDs: 2472463

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	97.9	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	MS
DEP SOP: NU-094-1	Color (true)	99.4			8.61	
EPA 180.1 Rev. 2.0	Turbidity	103			8.74	
EPA 300.0 Rev. 2.1	Chloride	101	99.9	94.1	4.07	
	Sulfate	93.8	96.0	94.8	0.0151	
EPA 350.1 Rev. 2.0	Ammonia-N	93.6	96.6	96.4		0.150
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	107	101		4.90
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.6	99.1		0.489
EPA 365.1 Rev. 2.0	Total-P	102	104	104		0.602
SM 2320 B-2011	Total Alkalinity	102			0.315	
SM 2540 C-2015	TDS	96.8			6.82	
SM 2540 D-2015	TSS	93.6				
SM 4500-F- C-2011	Fluoride	101	99.6	101		0.947
SM 5310 B-2014	Organic Carbon	96.2	88.3	90.5		1.80

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2472463
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2472463
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2472463
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2472463
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2472464
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2472464
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2472464
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2472464
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2472463
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2472463
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2472463
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2472463
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2472464

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	02/29/2024			02/29/2024 14:55	Jessica K Wilks	2472463
EPA 180.1 Rev. 2.0	02/29/2024			02/29/2024 14:14	Dipa Joshi	2472463
EPA 300.0 Rev. 2.1	02/29/2024			03/07/2024 16:05	James L Waggeberby	2472463
	02/29/2024			03/11/2024 23:27	James L Waggeberby	2472463
EPA 350.1 Rev. 2.0	02/29/2024			03/06/2024 14:38	Kenneth H Lee	2472464
EPA 351.2 Rev. 2.0	02/29/2024	03/01/2024 10:33	Samantha L Bates	03/04/2024 13:19	Samantha L Bates	2472464
EPA 353.2 Rev. 2.0	02/29/2024			03/05/2024 16:31	Fadila Guebre	2472464
EPA 365.1 Rev. 2.0	02/29/2024	03/01/2024 12:45	Adam P Silver	03/04/2024 14:04	Chandler E Cox	2472464
SM 2320 B-2011	02/29/2024			03/06/2024 22:46	Dale L. Simmons	2472463
SM 2540 C-2015	02/29/2024			03/01/2024 16:04	Yijie Li	2472463
SM 2540 D-2015	02/29/2024			03/01/2024 16:04	Yijie Li	2472463
SM 4500-F- C-2011	02/29/2024			03/06/2024 20:05	Dale L. Simmons	2472463
SM 5310 B-2014	02/29/2024			03/06/2024 04:02	Elise M. Gillis	2472464