

Chemical Analysis Report

NE-DIST-2019-04-04-01

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

Event Description: **Continuous Monitoring**

Request ID: **RQ-2019-01-21-47**

Customer: **NE-DIST**

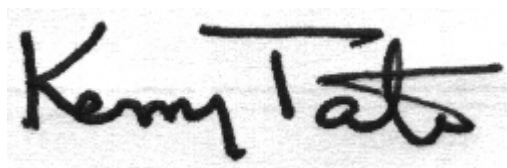
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 19-APR-2019 10:39

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: SHERMAN CR @ CONF SAN PABLO R

Collection Date/Time: 04/03/2019 12:45

Field ID: 20030802

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2075539	EPA 180.1 Rev. 2.0	Turbidity	7.5	A	NTU	P361617	
	EPA 300.0	Bromide	47		mg Br/L	P361971	
	SM 2320 B-97	Total Alkalinity	107		mg CaCO3/L	P362101	
	SM 2540 D-97	TSS	19	A	mg/L	P361878	
	SM 4500 F-C-97	Fluoride	0.95		mg F/L	P362102	
2075540	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P361963	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36	I	mg N/L	P362009	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.026		mg N/L	P361991	
	EPA 365.1 Rev. 2.0	Total-P	0.068		mg P/L	P361930	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P361780	
2075541	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.034		mg P/L	P361609	

Ref. Method and Comment:

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361617

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0
Batch ID: P361971

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361963

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362009

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361991

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361930

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361609

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-97
Batch ID: P362101

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

Reference Method: SM 2540 D-97
Batch ID: P361878

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P362102

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P361780

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0
Batch ID: P361971

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361963

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362009

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361991

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: P361930

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361609

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P362101

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362102

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P361780

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
Batch ID: P361971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075727	Bromide	91.7	93.4	P/P	90 - 110
2075728	Bromide	92.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075428	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362009

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075599	Kjeldahl Nitrogen	93.5	94.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075488	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361930

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075599	Total-P	91.2	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075383	O-Phosphate-P	93.9	96.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Batch ID: P361780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2075540	Organic Carbon	99.9	98.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075539	Turbidity	0.533	Sample	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P361971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075727	Bromide	1.78	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P361963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075428	Ammonia-N	0.185	Spike	P	0 - 15

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362009

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075599	Kjeldahl Nitrogen	1.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P361991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075488	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P361930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075599	Total-P	9.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075383	O-Phosphate-P	2.06	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2074613	Total Alkalinity	0.509	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 D-97
Batch ID: P361878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075539	TSS	6.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075903	Fluoride	0.935	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P361780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2075540	Organic Carbon	1.71	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90461

Included Lab Sample IDs: 2075541

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	96.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90465

Included Lab Sample IDs: 2075539

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

Reference Method: SM 5310 B-00

Run ID: A90539

Included Lab Sample IDs: 2075540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	101	P/P	90 - 110

Reference Method: EPA 300.0

Run ID: A90561

Included Lab Sample IDs: 2075539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	91.4	93.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90603

Included Lab Sample IDs: 2075540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90628

Included Lab Sample IDs: 2075540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90691

Included Lab Sample IDs: 2075540

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

Reference Method: SM 2320 B-97

Run ID: A90692

Included Lab Sample IDs: 2075539

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A90692

Included Lab Sample IDs: 2075539

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90718

Included Lab Sample IDs: 2075540

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.0	91.9	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 SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.533	
EPA 300.0	Bromide	94.7		91.7	93.4	92.9	1.78
EPA 350.1 Rev. 2.0	Ammonia-N	99.5		101	101		0.185
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9		93.5	94.7		1.21
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		101	101		0.0
EPA 365.1 Rev. 2.0	Total-P	103		91.2	100		9.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7		93.9	96.0		2.06
SM 2320 B-97	Total Alkalinity	100				0.509	
SM 2540 D-97	TSS					6.19	
SM 4500 F-C-97	Fluoride	98.8					0.935
SM 5310 B-00	Organic Carbon	101		99.9	98.0		1.71

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2075539
EPA 300.0 / E31780	Bromide in aqueous matrices	2075539
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2075540
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2075540
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2075540
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2075540
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2075541
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2075539
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2075539
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2075539
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2075540

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/04/2019			04/04/2019 15:03	Adrian Shelby	2075539
EPA 300.0	04/04/2019			04/10/2019 18:52	Lipi Saha	2075539
EPA 350.1 Rev. 2.0	04/04/2019			04/10/2019 13:05	Ping Hua	2075540
EPA 351.2 Rev. 2.0	04/04/2019	04/11/2019 18:00	Adrian Shelby	04/15/2019 11:56	Joseph Suarez	2075540
EPA 353.2 Rev. 2.0	04/04/2019			04/11/2019 12:56	Beverly Y. Sanders	2075540
EPA 365.1 Rev. 2.0	04/04/2019	04/10/2019 15:35	Sima Feizi	04/12/2019 18:17	Rosalyn Ballman	2075540
EPA 365.1 Rev. 2.0 dissolved	04/04/2019			04/04/2019 16:07	Jhamieka S. Greenwood	2075541
SM 2320 B-97	04/04/2019			04/13/2019 06:15	Dale L. Simmons	2075539
SM 2540 D-97	04/04/2019			04/08/2019 17:04	Mariam Hanna	2075539
SM 4500 F-C-97	04/04/2019			04/13/2019 02:28	Dale L. Simmons	2075539
SM 5310 B-00	04/04/2019			04/09/2019 02:49	Julia Storbeck	2075540