Chemical Analysis Report

NE-DIST-2017-03-30-02

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

Event Description: **Jerry, Rocky , Ichetucknee SCI's, Peacock lake**
Request ID: **RQ-2017-03-27-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

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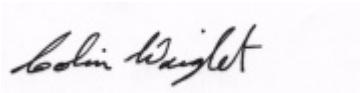
Certified by: Colin Wright, Program Administrator

Date Certified: 21-APR-2017 11:15



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 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: Ichetucknee R @ US Hwy 27 **Collection Date/Time: 03/29/2017 11:40**

Field ID: G1NE0531 03292017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884743	EPA 180.1 Rev. 2.0	Turbidity	0.25		NTU	P322544	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P323032	
		Sulfate	11		mg SO4/L	P323035	
	SM 2120 B	Color (true)	2.5	U	PCU	P322524	
	SM 2320 B-97	Total Alkalinity	156		mg CaCO3/L	P323004	
	SM 2540 C-97	TDS	174		mg/L	P323101	
	SM 2540 D-97	TSS	2	U	mg/L	P322878	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P323007	
1884744	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P322567	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.50		mg N/L	P322718	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P322702	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P322582	
1884745	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P322536	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322544

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322718

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

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

Reference Method: SM 2120 B
Batch ID: P322524

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P323004

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

Reference Method: SM 2540 C-97
Batch ID: P323101

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P322878

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P322582

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322718

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322702

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P323004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P322582

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884258	Chloride	101		P	90 - 110
1884348	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884258	Sulfate	98.5		P	90 - 110
1884348	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884627	Ammonia-N	106	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884744	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322718

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884779	NO2NO3-N	93.4	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884710	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884633	O-Phosphate-P	99.0	100	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1885134	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884420	Organic Carbon	99.6		P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884663	Turbidity	7.49	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884258	Chloride	0.0733	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323035

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884258	Sulfate	0.775	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884627	Ammonia-N	2.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884744	Kjeldahl Nitrogen	1.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884779	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884710	Total-P	0.932	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884633	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884815	Color (true)	2.75	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P323004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Total Alkalinity	0.0234	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884700	TDS	1.70	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P322582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884420	Organic Carbon	0.0206	Spike	P	0 - 20

Quality Assurance Report
Precision

* 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 350.1 Rev. 2.0
Run ID: A75470
Included Lab Sample IDs: 1884744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A75477
Included Lab Sample IDs: 1884743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	104	103	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A75479
Included Lab Sample IDs: 1884745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.8	99.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A75482
Included Lab Sample IDs: 1884743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 5310 B-00
Run ID: A75496
Included Lab Sample IDs: 1884744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.3	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A75533
Included Lab Sample IDs: 1884744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A75553
Included Lab Sample IDs: 1884744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	97.5	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A75585
Included Lab Sample IDs: 1884744

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

Reference Method: SM 2320 B-97
Run ID: A75665
Included Lab Sample IDs: 1884743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	107	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A75665
Included Lab Sample IDs: 1884743

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A75672
Included Lab Sample IDs: 1884743

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	104	P/P	90 - 110
Sulfate	105	102	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
EPA 180.1 Rev. 2.0	Turbidity					7.49	
EPA 300.0 Rev. 2.1	Chloride	101	101	101		0.0733	
	Sulfate	99.4	98.5	99.0		0.775	
EPA 350.1 Rev. 2.0	Ammonia-N	106	106	103			2.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.2	102	100			1.62
EPA 353.2 Rev. 2.0	NO2NO3-N	101	93.4	95.0			1.49
EPA 365.1 Rev. 2.0	Total-P	101	101	102			0.932
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2	99.0	100			1.40
SM 2120 B	Color (true)					2.75	
SM 2320 B-97	Total Alkalinity	105				0.0234	
SM 2540 C-97	TDS					1.70	
SM 4500 F-C-97	Fluoride	97.4	98.9	98.9			0.0
SM 5310 B-00	Organic Carbon	99.9	99.6				0.0206

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1884743
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1884743
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1884743
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1884744
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1884744
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1884744
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1884744
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1884745
SM 2120 B / E31780	True Color measured at 450 nm	1884743
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1884743
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1884743
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1884743
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1884743
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1884744

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	03/30/2017			03/30/2017 15:54	Blanca Fach	1884743
EPA 300.0 Rev. 2.1	03/30/2017			04/08/2017	Ping Hua	1884743
EPA 350.1 Rev. 2.0	03/30/2017			03/30/2017	Julie Michelle Frank	1884744
EPA 351.2 Rev. 2.0	03/30/2017	03/31/2017	Adrian Shelby	04/03/2017	Joseph Suarez	1884744
EPA 353.2 Rev. 2.0	03/30/2017			04/04/2017	Beverly Y. Sanders	1884744
EPA 365.1 Rev. 2.0	03/30/2017	04/04/2017	Adrian Shelby	04/05/2017	Lipi Saha	1884744
EPA 365.1 Rev. 2.0 dissolved	03/30/2017			03/30/2017 16:41	Anthony C. Onicha	1884745
SM 2120 B	03/30/2017			03/30/2017 19:35	Julie Michelle Frank	1884743
SM 2320 B-97	03/30/2017			04/07/2017	Dale L. Simmons	1884743
SM 2540 C-97	03/30/2017			04/03/2017	Sima Feizi	1884743
SM 2540 D-97	03/30/2017			04/03/2017	Sima Feizi	1884743
SM 4500 F-C-97	03/30/2017			04/07/2017	Dale L. Simmons	1884743
SM 5310 B-00	03/30/2017			03/30/2017	Julie Michelle Frank	1884744