Chemical Analysis Report

CEN-DIST-2016-06-24-02

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

Event Description: **LIttle Jones+SCI**
Request ID: **RQ-2016-06-20-36**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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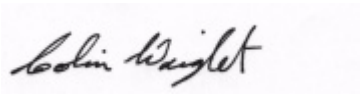
Certified by: Colin Wright, Environmental Administrator

Date Certified: 19-JUL-2016 12:05



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: Little Jones Creek @ DS of Loop Trail Rd. Bridge **Collection Date/Time: 06/23/2016 12:35**

Field ID: G4CE0024 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1811391	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P306842	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P307644	
		Sulfate	17		mg SO4/L	P307643	
	SM 2120 B	Color (true)	14		PCU	P306844	
	SM 2320 B-97	Total Alkalinity	149		mg CaCO3/L	P307349	
	SM 2540 C-97	TDS	176		mg/L	P307343	
	SM 2540 D-97	TSS	3	I	mg/L	P307314	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P307516	
1811392	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P307092	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.33		mg N/L	P307047	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.3		mg N/L	P306924	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P307117	
	SM 5310 B-00	Organic Carbon	2.1		mg C/L	P307483	
1811393	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.048		mg P/L	P306848	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306842

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307643

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307644

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307092

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307047

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: P306924

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307117

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306848

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

Reference Method: SM 2120 B
Batch ID: P306844

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P307349

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

Reference Method: SM 2540 C-97
Batch ID: P307343

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P307314

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307516

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307483

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: P307643

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307644

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	91.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307047

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306924

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: P307117

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306848

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

Reference Method: SM 2320 B-97
Batch ID: P307349

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P307516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P307483

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307643

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811967	Sulfate	107		P	90 - 110
1811982	Sulfate	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307644

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811967	Chloride	105		P	90 - 110
1811982	Chloride	106		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811326	Ammonia-N	91.2	92.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811570	Kjeldahl Nitrogen	93.0	92.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306924

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811230	NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811392	Total-P	106	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811393	O-Phosphate-P	99.1	101	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P307516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811123	Fluoride	98.6	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1811231	Organic Carbon	97.2	94.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P306842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811251	Turbidity	2.67	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307643

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811967	Sulfate	0.0666	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307644

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811967	Chloride	0.193	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811326	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811570	Kjeldahl Nitrogen	0.214	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P306924

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: P306924

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811230	NO2NO3-N	0.985	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307117

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811392	Total-P	2.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P306848

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811393	O-Phosphate-P	1.55	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P306844

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811251	Color (true)	1.90	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307349

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811123	Total Alkalinity	0.670	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P307343

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811251	TDS	3.39	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P307516

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811123	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P307483

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1811231	Organic Carbon	1.35	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 180.1 Rev. 2.0
Run ID: A70221
Included Lab Sample IDs: 1811391

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

Reference Method: SM 2120 B
Run ID: A70222
Included Lab Sample IDs: 1811391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	92.8	93.4	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70223
Included Lab Sample IDs: 1811393

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70248
Included Lab Sample IDs: 1811392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70306
Included Lab Sample IDs: 1811392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	92.1	90.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70336
Included Lab Sample IDs: 1811392

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70368
Included Lab Sample IDs: 1811392

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 2320 B-97
Run ID: A70404
Included Lab Sample IDs: 1811391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A70437
Included Lab Sample IDs: 1811392

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.9	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A70440
Included Lab Sample IDs: 1811391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70443
Included Lab Sample IDs: 1811391

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	108	106	P/P	90 - 110
Sulfate	106	99.6	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					2.67	
EPA 300.0 Rev. 2.1	Chloride	107	105	106		0.193	
	Sulfate	105	107	105		0.0666	
EPA 350.1 Rev. 2.0	Ammonia-N	91.4	91.2	92.7			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	93.0	92.6			0.214
EPA 353.2 Rev. 2.0	NO2NO3-N	102	101	102			0.985
EPA 365.1 Rev. 2.0	Total-P	102	106	104			2.25
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.1	101			1.55
SM 2120 B	Color (true)					1.90	
SM 2320 B-97	Total Alkalinity	103				0.670	
SM 2540 C-97	TDS					3.39	
SM 4500 F-C-97	Fluoride	97.2	98.6	98.6			0.0
SM 5310 B-00	Organic Carbon	98.5	97.2	94.6			1.35

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1811391
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1811391
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1811391
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1811392
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1811392
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1811392
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1811392
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1811393
SM 2120 B / E31780	True Color measured at 450 nm	1811391
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1811391
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1811391
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1811391
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1811391
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1811392

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	06/24/2016			06/24/2016 15:08	Sima Feizi	1811391
EPA 300.0 Rev. 2.1	06/24/2016			07/09/2016	Ping Hua	1811391
EPA 350.1 Rev. 2.0	06/24/2016			06/29/2016	Diana M. Turner	1811392
EPA 351.2 Rev. 2.0	06/24/2016	06/29/2016	Sofia Elnemr	06/30/2016	Christopher Armour	1811392
EPA 353.2 Rev. 2.0	06/24/2016			06/27/2016	Peter D. Kaus	1811392
EPA 365.1 Rev. 2.0	06/24/2016	06/30/2016	Vijayalakshmi Reddy	07/01/2016	Lipi Saha	1811392
EPA 365.1 Rev. 2.0 dissolved	06/24/2016			06/24/2016 15:46	Julia Storbeck	1811393
SM 2120 B	06/24/2016			06/24/2016 16:25	Rochelle Y Jackson	1811391
SM 2320 B-97	06/24/2016			07/06/2016	Dale L. Simmons	1811391
SM 2540 C-97	06/24/2016			06/29/2016	Yijie Li	1811391
SM 2540 D-97	06/24/2016			06/29/2016	Yijie Li	1811391
SM 4500 F-C-97	06/24/2016			07/07/2016	Dale L. Simmons	1811391
SM 5310 B-00	06/24/2016			07/06/2016	Sofia Elnemr	1811392