

Chemical Analysis Report

WQAP-2016-12-29-03

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

Event Description: **Black Creek and Soapstone Branch**
Request ID: **RQ-2016-12-26-36**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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Date Certified: 13-JAN-2017 16:27



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: Black Creek upstream of Bloxham Cutoff

Collection Date/Time: 12/29/2016 09:10

Field ID: G1WA0023-12292016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1860550	EPA 180.1 Rev. 2.0	Turbidity	0.70	A	NTU	P317560	
	EPA 300.0 Rev. 2.1	Chloride	3.6		mg Cl/L	P317848	
	SM 2120 B	Color (true)	450		PCU	P317565	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P317578	
	SM 2540 C-97	TDS	50		mg/L	P318138	
	SM 2540 D-97	TSS	2	U	mg/L	P318128	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P317581	
1860551	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P317753	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P317632	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P317993	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P317652	
	SM 5310 B-00	Organic Carbon	45		mg C/L	P317613	
1860552	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P317556	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: P317560

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P317848

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P317753

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P317632

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P317993

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317652

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317556

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

Reference Method: SM 2120 B
Batch ID: P317565

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P317578

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

Reference Method: SM 2540 C-97
Batch ID: P318138

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P318128

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P317581

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P317613

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: P317848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317848

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317753

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317632

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317993

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	94.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317556

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

Reference Method: SM 2320 B-97
Batch ID: P317578

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P317581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P317613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860744	Chloride	101		P	90 - 110
1860745	Chloride	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860460	Ammonia-N	99.9	98.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860463	Kjeldahl Nitrogen	97.8	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317993

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860588	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860577	Total-P	97.0	96.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860468	O-Phosphate-P	96.7	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P317581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860521	Fluoride	100	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P317613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1860431	Organic Carbon	95.3	91.6	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P317848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860744	Chloride	0.289	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P317753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860460	Ammonia-N	0.968	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P317632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860463	Kjeldahl Nitrogen	3.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P317993

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860588	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P317652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860577	Total-P	0.384	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P317556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860468	O-Phosphate-P	1.64	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P317565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860555	Color (true)	5.16	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P317578

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860521	Total Alkalinity	0.312	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P318138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860574	TDS	1.98	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P317581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860521	Fluoride	0.483	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P317613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1860431	Organic Carbon	2.83	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: A73649
Included Lab Sample IDs: 1860552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A73654
Included Lab Sample IDs: 1860550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	97.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A73655
Included Lab Sample IDs: 1860550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115

Reference Method: SM 2320 B-97
Run ID: A73661
Included Lab Sample IDs: 1860550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A73661

Included Lab Sample IDs: 1860550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A73673

Included Lab Sample IDs: 1860551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A73722

Included Lab Sample IDs: 1860551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	98.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A73745

Included Lab Sample IDs: 1860551

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A73753

Included Lab Sample IDs: 1860551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A73754

Included Lab Sample IDs: 1860550

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A73828

Included Lab Sample IDs: 1860551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	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		LCS	Precision	MS
						SMP	
EPA 300.0 Rev. 2.1	Chloride	102	101	102		0.289	
EPA 350.1 Rev. 2.0	Ammonia-N	103	99.9	98.9			0.968
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	97.8	94.5			3.17
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	104	102	102			0.480
EPA 365.1 Rev. 2.0	Total-P	94.3	97.0	96.5			0.384
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5	96.7	98.3			1.64
SM 2120 B	Color (true)					5.16	
SM 2320 B-97	Total Alkalinity	102				0.312	
SM 2540 C-97	TDS					1.98	
SM 4500 F-C-97	Fluoride	96.9	100	101			0.483
SM 5310 B-00	Organic Carbon	99.8	95.3	91.6			2.83

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1860550
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1860550
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1860551
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1860551
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1860551
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1860551
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1860552
SM 2120 B / E31780	True Color measured at 450 nm	1860550
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1860550
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1860550
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1860550
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1860550
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1860551

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	12/29/2016			12/29/2016 15:54	Julie Michelle Frank	1860550
EPA 300.0 Rev. 2.1	12/29/2016			01/06/2017	Ping Hua	1860550
EPA 350.1 Rev. 2.0	12/29/2016			01/04/2017	Sofia Elnemr	1860551
EPA 351.2 Rev. 2.0	12/29/2016	01/03/2017	Adrian Shelby	01/04/2017	Joseph Suarez	1860551
EPA 353.2 Rev. 2.0	12/29/2016			01/09/2017	Beverly Y. Sanders	1860551
EPA 365.1 Rev. 2.0	12/29/2016	01/03/2017	Vijayalakshmi Reddy	01/05/2017	Lipi Saha	1860551
EPA 365.1 Rev. 2.0 dissolved	12/29/2016			12/29/2016 15:46	Virginia P. Brown	1860552
SM 2120 B	12/29/2016			12/29/2016 16:11	Julie Michelle Frank	1860550
SM 2320 B-97	12/29/2016			12/30/2016	Dale L. Simmons	1860550
SM 2540 C-97	12/29/2016			01/03/2017	Sima Feizi	1860550
SM 2540 D-97	12/29/2016			01/03/2017	Sima Feizi	1860550
SM 4500 F-C-97	12/29/2016			12/30/2016	Dale L. Simmons	1860550
SM 5310 B-00	12/29/2016			12/30/2016	Julie Michelle Frank	1860551