

Biological Analysis Report

NE-DIST-2017-08-25-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Gainesville
6815 SW Archer Road
Gainesville, Florida 32608
DOH Accreditation E82001

Event Description: **Cannon Creek**
Request ID: **RQ-2017-08-07-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 11-JAN-2018 11:55



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 groups are included in this report: Chlorophyll/Grain Size/BOD, Molecular and Overflow.

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: Cannon Crk @ So. WardStreet

Collection Date/Time: 08/24/2017 08:50

Field ID: G1NE050008102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1924459	EPA 1603	Escherichia coli-Membrane Filter	560		cfu/100 mL		
1924463	SOP-PCR-1.0	HF183-qPCR**	20	T	GEU/100 mL	P331884	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Cannon Crk @ Cannon Crk Rd W CR 47

Collection Date/Time: 08/24/2017 09:05

Field ID: G1NE0617 08102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1924454	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8	A	ug/L	P331413	
		Phaeophytin-a	0.40	U	ug/L	P331413	
		Chlorophyll-a, Uncorrected	3.0	A	ug/L	P331413	
1924457	EPA 1603	Escherichia coli-Membrane Filter	140	B	cfu/100 mL		
1924461	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 0.40 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: Olustee Creek @ CR 238

Collection Date/Time: 08/24/2017 09:35

Field ID: G1NE0332 08102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1924455	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P331570	
		Phaeophytin-a	0.40	U	ug/L	P331570	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P331570	
1924458	EPA 1603	Escherichia coli-Membrane Filter	30	B	cfu/100 mL		
1924462	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Mill Creek @ Bellamy/Alligator Rd.

Collection Date/Time: 08/24/2017 10:15

Field ID: G1NE0605 08102017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1924456	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.1		ug/L	P331570	
		Phaeophytin-a	1.6		ug/L	P331570	
		Chlorophyll-a, Uncorrected	7.3		ug/L	P331570	
1924460	EPA 1603	Escherichia coli-Membrane Filter	2000		cfu/100 mL		
1924464	SOP-PCR-1.0	HF183-qPCR**	55	T	GEU/100 mL	P330613	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P331413

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P331570

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P330613

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.0
Batch ID: P331884

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL
HF183-qPCR	280	U	GEU/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P331413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P331570

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	108		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P330613

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	3.57	P/F	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P331884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	10.4	92.2	F/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P331884

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	13.4	92.9	F/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P330613

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913976	HF183-qPCR	102		P	50 - 175
1915406	HF183-qPCR	93.5		P	50 - 175
1915693	HF183-qPCR	95.2		P	50 - 175
1922795	HF183-qPCR	75.9		P	50 - 175
1922796	HF183-qPCR	92.0		P	50 - 175
1922809	HF183-qPCR	58.9		P	50 - 175
1923589	HF183-qPCR	108		P	50 - 175
1923590	HF183-qPCR	74.6		P	50 - 175
1923820	HF183-qPCR	83.5		P	50 - 175
1923821	HF183-qPCR	90.4		P	50 - 175
1923822	HF183-qPCR	73.8	68.0	P/P	50 - 175
1924464	HF183-qPCR	115		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P331884

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1924463	HF183-qPCR	90.4		P	50 - 175
1925964	HF183-qPCR	78.3		P	50 - 175
1925967	HF183-qPCR	88.7		P	50 - 175
1926085	HF183-qPCR	89.0		P	50 - 175
1929620	HF183-qPCR	90.6		P	50 - 175
1930310	HF183-qPCR	92.8	97.0	P/P	50 - 175
1930311	HF183-qPCR	90.1		P	50 - 175
1930312	HF183-qPCR	78.4		P	50 - 175
1931147	HF183-qPCR	96.7		P	50 - 175
1931151	HF183-qPCR	90.8		P	50 - 175
1931271	HF183-qPCR	73.7		P	50 - 175
1931272	HF183-qPCR	75.7		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P331413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1924454	Chlorophyll-a, Corrected	4.17	Sample	P	0 - 25
1924454	Chlorophyll-a, Uncorrected	3.27	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P330613

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1923822	HF183-qPCR	8.22	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P331884

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1930310	HF183-qPCR	4.40	Spike	P	0 - 25
1931925	HF183-qPCR	17.8	Spike	P	0 - 25

* 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 Surrogates

Lab Sample ID: 1924463
Field Sample ID: G1NE050008102017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	78.7	P	50 - 300

Lab Sample ID: 1924464
Field Sample ID: G1NE0605 08102017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	101	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	107							4.17	
	Chlorophyll-a, Corrected	108								
	Chlorophyll-a, Uncorrected								3.27	
SOP-PCR-1.0	HF183-qPCR	3.57	117		75.9	92.0	58.9			8.22
					108					
	HF183-qPCR	10.4	92.9	13.4	90.4	78.3	88.7			4.40 17.8
		92.2			89.0					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E82001	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Gainesville Overflow Laboratories for NED	1924457, 1924458, 1924459, 1924460
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1924454, 1924455, 1924456
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1924463, 1924464

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1924461, 1924462, 1924463, 1924464

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	08/24/2017	08/24/2017 14:43		08/25/2017 14:02	AEL - Gainesville	1924457, 1924458, 1924459, 1924460
SM 10200 H (mod.)	08/25/2017	08/25/2017 13:20	Morgan Lane	09/06/2017	Kim M. Spencer	1924454
	08/25/2017	08/25/2017 13:20	Morgan Lane	09/13/2017	Jennifer Mihalic	1924455, 1924456
SOP-PCR-1.0	08/25/2017	08/25/2017 13:30	Avril Wood	09/27/2017	Puja Jasrotia	1924463
	08/25/2017	08/25/2017 13:30	Puja Jasrotia	08/28/2017	Puja Jasrotia	1924464
SOP-PCR-4.0	08/25/2017	08/25/2017 13:30	Avril Wood	09/25/2017	Puja Jasrotia	1924461, 1924462, 1924463, 1924464