

Biological Analysis Report

NE-DIST-2017-08-23-01

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Gainesville
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DOH Accreditation E82001

Event Description: **LSJR SW**
Request ID: **RQ-2017-08-07-11**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 11-JAN-2018 08:56



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: Little Black Creek @ SR 220

Collection Date/Time: 08/22/2017 08:45

Field ID: G2NE0626 08092017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923583	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P331332	
		Phaeophytin-a	0.40	U	ug/L	P331332	
		Chlorophyll-a, Uncorrected	0.59	I	ug/L	P331332	

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: Little Black Creek @ SR 220

Collection Date/Time: 08/22/2017 08:45

Field ID: G2NE0626 08092017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923585	EPA 1603	Escherichia coli-Membrane Filter	280		cfu/100 mL		
1923589	SOP-PCR-1.0	HF183-qPCR**	200	T	GEU/100 mL	P330613	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: Peters Creek @ SR 16

Collection Date/Time: 08/22/2017 09:50

Field ID: G2NE0719 08092017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923588	EPA 1603	Escherichia coli-Membrane Filter	130	B	cfu/100 mL		
1923592	SOP-PCR-1.3	GFD-purified-qPCR**	110	UJ	TSC/100 mL	P330552	LCS, MS, RPD
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.3: No amplification of GFD marker. Quality control failure(s) observed. See QA report for details.

Sample Location: Grog Branch @ SR 220

Collection Date/Time: 08/22/2017 09:10

Field ID: G2NE0674 08092017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923584	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	I	ug/L	P331332	
		Phaeophytin-a	0.40	U	ug/L	P331332	
		Chlorophyll-a, Uncorrected	1.2		ug/L	P331332	

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: Grog Branch @ SR 220

Collection Date/Time: 08/22/2017 09:10

Field ID: G2NE0674 08092017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923587	EPA 1603	Escherichia coli-Membrane Filter	40	B	cfu/100 mL		
1923591	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: Pareners Branch @ 1491

Collection Date/Time: 08/22/2017 11:45

Field ID: G1NE0600

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G1NE0600

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1923586	EPA 1603	Escherichia coli-Membrane Filter	580		cfu/100 mL		
1923590	SOP-PCR-1.0	HF183-qPCR**	320	I	GEU/100 mL	P330613	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P331332

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-1.3
Batch ID: P330552

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P331332

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	109		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-1.3
Batch ID: P330552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	120	12.9	P/F	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

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-1.3
Batch ID: P330552

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914093	GFD-purified-qPCR	112		P	50 - 175
1915515	GFD-purified-qPCR	62.4		P	50 - 175
1915693	GFD-purified-qPCR	120		P	50 - 175
1916673	GFD-purified-qPCR	135		P	50 - 175
1922635	GFD-purified-qPCR	0.0		F	50 - 175
1923592	GFD-purified-qPCR	221		F	50 - 175
1923820	GFD-purified-qPCR	25.5		F	50 - 175

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-1.3
Batch ID: P330552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1922635	GFD-purified-qPCR	10000	Spike	F	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

Quality Assurance Report Surrogates

Lab Sample ID: 1923589
Field Sample ID: G2NE0626 08092017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	90.8	P	50 - 300

Lab Sample ID: 1923590
Field Sample ID: G1NE0600

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	89.3	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	109				
SOP-PCR-1.0	HF183-qPCR	3.57 117	75.9 92.0 58.9 108			8.22
SOP-PCR-1.3	GFD-purified-qPCR	12.9 120	120 0.0 221 25.5			10000

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	1923585, 1923586, 1923587, 1923588
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1923583, 1923584
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1923589, 1923590
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1923592
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1923589, 1923590, 1923591, 1923592

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	08/22/2017	08/22/2017 14:02		08/23/2017 14:20	AEL - Gainesville	1923585, 1923586, 1923587, 1923588
SM 10200 H (mod.)	08/23/2017	08/23/2017 14:15	Cathy Sherrer	09/05/2017	Jennifer Mihalic	1923583, 1923584
SOP-PCR-1.0	08/23/2017	08/23/2017 14:30	Puja Jasrotia	08/28/2017	Puja Jasrotia	1923589, 1923590
SOP-PCR-1.3	08/23/2017	08/23/2017 14:30	Avril Wood	08/29/2017	Sarah Menz	1923592
SOP-PCR-4.0	08/23/2017	08/23/2017 14:30	Puja Jasrotia	09/25/2017	Puja Jasrotia	1923589, 1923590, 1923591
	08/23/2017	08/23/2017 14:30	Puja Jasrotia	10/02/2017	Puja Jasrotia	1923592