

Biological Analysis Report

NE-DIST-2017-06-14-01

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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Gainesville, Florida 32608
DOH Accreditation E82001

Event Description: **LSJR SWest**
Request ID: **RQ-2017-06-12-15**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 18-AUG-2017 11:00



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: 06/13/2017 09:35

Field ID: G2NE0674 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905978	EPA 1603	Escherichia coli-Membrane Filter	335		cfu/100 mL		
1905989	SOP-PCR-1.0	HF183-qPCR**	20	T	GEU/100 mL	P326689	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: LITTLE BLACK CREEK @ SR 220

Collection Date/Time: 06/13/2017 09:35

Field ID: G2NE0674 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905976	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.67	I	ug/L	P326979	
		Phaeophytin-a	0.40	U	ug/L	P326979	
		Chlorophyll/Phaeophytin Ratio	1.6			P326979	
		Chlorophyll-a, Uncorrected	0.75	I	ug/L	P326979	

Sample Location: GROG BRANCH @ SR 220

Collection Date/Time: 06/13/2017 09:55

Field ID: G2NE0578 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905979	EPA 1603	Escherichia coli-Membrane Filter	60	B	cfu/100 mL		
1905990	SOP-PCR-1.0	HF183-qPCR**	24	UJ	GEU/100 mL	P327537	SUR
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker. Quality control failure(s) observed. Sample processed with an additional purification step to reduce inhibition, which can reduce overall DNA recovery. See QA report.

Sample Location: GROG BRANCH @ SR 220

Collection Date/Time: 06/13/2017 09:55

Field ID: G2NE0578 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905977	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8		ug/L	P326979	
		Phaeophytin-a	0.40	U	ug/L	P326979	
		Chlorophyll/Phaeophytin Ratio	1.6			P326979	
		Chlorophyll-a, Uncorrected	3.1		ug/L	P326979	

Sample Location: PETERS CREEK @ SR 16

Collection Date/Time: 06/13/2017 10:32

Field ID: G2NE0410 03132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905980	EPA 1603	Escherichia coli-Membrane Filter	90	B	cfu/100 mL		
1905991	SOP-PCR-1.0	HF183-qPCR**	3.4	T	GEU/100 mL	P326689	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: PETERS CREEK @ SR 16 DUPLICATE

Collection Date/Time: 06/13/2017 10:35

Field ID: G2NE0719D06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905992	SOP-PCR-1.0	HF183-qPCR**	11	T	GEU/100 mL	P326689	

Field ID: G2NE0719D06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905992	SOP-PCR-4.0	HF183 - Human Source Marker**	No Result				

Ref. Method and Comment:

SOP-PCR-4.0: No micro results available. Sample was cancelled as was not received by the overflow lab.

Sample Location: GREENE CREEK @ SR 315 (SHARON RD.)

Collection Date/Time: 06/13/2017 10:55

Field ID: G2NE0253 06132017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1905982	EPA 1603	Escherichia coli-Membrane Filter	100	B	cfu/100 mL		
1905993	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P326776	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 Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P326979

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: P326689

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

Reference Method: SOP-PCR-1.0

Batch ID: P327537

Component	Result	Code	Units
HF183-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.3

Batch ID: P326776

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: P326979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P326689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	94.0	94.5	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P327537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	68.6	72.8	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P326776

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	56.6	23.7	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P326689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905707	HF183-qPCR	94.6		P	50 - 175
1905708	HF183-qPCR	71.5		P	50 - 175
1905709	HF183-qPCR	70.4	86.3	P/P	50 - 175
1905711	HF183-qPCR	62.7		P	50 - 175
1905908	HF183-qPCR	82.0		P	50 - 175
1905909	HF183-qPCR	76.9		P	50 - 175
1905989	HF183-qPCR	82.0		P	50 - 175
1905991	HF183-qPCR	87.5		P	50 - 175
1905992	HF183-qPCR	82.6		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P327537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905710	HF183-qPCR	81.0		P	50 - 175
1905990	HF183-qPCR	78.4		P	50 - 175
1908006	HF183-qPCR	83.8		P	50 - 175
1908009	HF183-qPCR	80.5	71.9	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P326776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1905391	GFD-purified-qPCR	96.0		P	50 - 175
1905392	GFD-purified-qPCR	109		P	50 - 175
1905393	GFD-purified-qPCR	138		P	50 - 175
1905394	GFD-purified-qPCR	93.0		P	50 - 175
1905395	GFD-purified-qPCR	28.7		F	50 - 175
1905396	GFD-purified-qPCR	71.1		P	50 - 175
1905993	GFD-purified-qPCR	73.9	173	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3
 Batch ID: P326776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906939	GFD-purified-qPCR	18.7		F	50 - 175
1907080	GFD-purified-qPCR	20.5		F	50 - 175
1908580	GFD-purified-qPCR	77.1		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P326979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1906048	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1906048	Chlorophyll-a, Corrected	5.66	Sample	P	0 - 25
1906048	Chlorophyll-a, Uncorrected	5.24	Sample	P	0 - 25
1906048	Phaeophytin-a	1.44	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P326689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905709	HF183-qPCR	2.70	Sample	P	0 - 25
1905709	HF183-qPCR	20.3	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P327537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908009	HF183-qPCR	11.2	Spike	P	0 - 25
1908009	HF183-qPCR	7.05	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P326776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1905993	GFD-purified-qPCR	80.5	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

Lab Sample ID: 1905989
 Field Sample ID: G2NE0674 06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	127	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1905990
Field Sample ID: G2NE0578 06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	7.61	F	30 - 300

Lab Sample ID: 1905991
Field Sample ID: G2NE0410 03132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	145	P	50 - 300

Lab Sample ID: 1905992
Field Sample ID: G2NE0719D06132017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	153	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio							0.0	
	Chlorophyll-a, Corrected	100						5.66	
	Chlorophyll-a, Uncorrected							5.24	
	Phaeophytin-a							1.44	
SOP-PCR-1.0	HF183-qPCR	94.5	94.0	82.0	94.6	71.5		2.70	20.3
				70.4					
	HF183-qPCR	72.8	68.6	81.0	78.4	83.8			7.05 11.2
SOP-PCR-1.3				80.5					
	GFD-purified-qPCR	23.7	56.6	73.9	173	18.7			80.5
				20.5					

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	1905978, 1905979, 1905980, 1905982
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1905976, 1905977
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1905989, 1905990, 1905991, 1905992
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter genetic marker with quantitative polymerase chain reaction	1905993
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1905989, 1905990, 1905991, 1905992, 1905993

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	06/13/2017			06/13/2017 14:07	AEL - Gainesville	1905978, 1905979, 1905980, 1905982
SM 10200 H (mod.)	06/14/2017	06/14/2017 13:07	Cathy Sherrer	06/16/2017	Kim M. Spencer	1905976, 1905977
SOP-PCR-1.0	06/14/2017	06/14/2017 12:51	Avril Wood	06/30/2017	Puja Jasrotia	1905990
	06/14/2017	06/14/2017 12:51	Puja Jasrotia	06/27/2017	Puja Jasrotia	1905989, 1905991, 1905992
SOP-PCR-1.3	06/14/2017	06/14/2017 12:52	Sarah Menz	06/27/2017	Sarah Menz	1905993
SOP-PCR-4.0	06/14/2017	06/14/2017 12:53	Sarah Menz	07/26/2017	Puja Jasrotia	1905989, 1905990, 1905991, 1905993
	06/14/2017	06/14/2017 12:53	Sarah Menz	07/31/2017	Puja Jasrotia	1905992