

Biological Analysis Report

NE-DIST-2017-12-13-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
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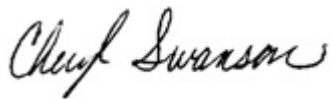
Event Description: **LSJR Bmap**
Request ID: **RQ-2017-12-11-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 19-APR-2018 13:58



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: Goodbys Crk above W branch @ San Clerc

Collection Date/Time: 12/12/2017 09:00

Field ID: G2NE0899 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953407	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	I	ug/L	P337739	
		Phaeophytin-a	0.40	U	ug/L	P337739	
		Chlorophyll-a, Uncorrected	0.99	I	ug/L	P337739	
1953418	SOP-PCR-1.0	HF183-qPCR**	36	T	GEU/100 mL	P336815	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1956574	SM 9223 B	Escherichia Coli-Quanti-Tray**	495		MPN/100 mL		

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: Craig Creek @ Hendricks Ave

Collection Date/Time: 12/12/2017 09:25

Field ID: G2NE0801 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953416	SM 9223 B	Escherichia Coli-Quanti-Tray**	627		MPN/100 mL		
1953423	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P337261	
	SOP-PCR-1.2	GULL2-qPCR**	4.9E+03	T	TSC/100 mL	P337261	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P337261	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A81521.

SOP-PCR-1.4: No amplification of BACR marker. Precision data unavailable for Analysis Batch A81375.

Sample Location: Craig Crk 100m down from bridge in park

Collection Date/Time: 12/12/2017 09:40

Field ID: G2NE0966 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953408	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4	A	ug/L	P337739	
		Phaeophytin-a	0.58	I	ug/L	P337739	
		Chlorophyll-a, Uncorrected	2.7	A	ug/L	P337739	
1953412	SM 9223 B	Escherichia Coli-Quanti-Tray**	712		MPN/100 mL		
1953419	SOP-PCR-1.0	HF183-qPCR**	85	T	GEU/100 mL	P336815	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

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

Sample Location: Little Fishweir Crk @ Oak Street

Collection Date/Time: 12/12/2017 10:45

Field ID: G2NE0961 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953417	SM 9223 B	Escherichia Coli-Quanti-Tray**	689		MPN/100 mL		
1953424	SOP-PCR-1.0	HF183-qPCR**	53	T	GEU/100 mL	P337261	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Big Fishweir Crk SF East Park St

Collection Date/Time: 12/12/2017 10:15

Field ID: G2NE0959 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953409	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P337739	
		Phaeophytin-a	0.40	U	ug/L	P337739	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P337739	
1953413	SM 9223 B	Escherichia Coli-Quanti-Tray**	1850		MPN/100 mL		
1953420	SOP-PCR-1.0	HF183-qPCR**	68	T	GEU/100 mL	P336815	
	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.

Sample Location: Butcher Pen Crk @ Confederate Pt.Rd

Collection Date/Time: 12/12/2017 11:00

Field ID: G2NE0089 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953410	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P337739	
		Phaeophytin-a	0.40	U	ug/L	P337739	
		Chlorophyll-a, Uncorrected	1.7		ug/L	P337739	
1953414	SM 9223 B	Escherichia Coli-Quanti-Tray**	2250		MPN/100 mL		
1953421	SOP-PCR-1.0	HF183-qPCR**	430	I	GEU/100 mL	P336815	
	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.

Sample Location: Butcher Pen Crk @ Wesconnett Rd

Collection Date/Time: 12/12/2017 11:25

Field ID: G2NE0760 12122017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1953415	SM 9223 B	Escherichia Coli-Quanti-Tray**	3450		MPN/100 mL		
1953422	SOP-PCR-1.0	HF183-qPCR**	1.32E+03		GEU/100 mL	P337261	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P337739

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: P336815

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P337261

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

Reference Method: SOP-PCR-1.2
Batch ID: P337261

Component	Result	Code	Units
GULL2-qPCR	1.7E+04	U	TSC/100 mL
GULL2-qPCR	1.7E+04	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P337261

Component	Result	Code	Units
BacR-qPCR	4.7E+04		TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P337739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	94.3		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P336815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	116	115	P/P	50 - 175
HF183-qPCR	121	102	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P337261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	117	P/P	50 - 175
HF183-qPCR	117	102	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P337261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	135	59.3	P/P	50 - 300
GULL2-qPCR	108	99.0	P/P	50 - 300

Reference Method: SOP-PCR-1.4
Batch ID: P337261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	100	140	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P336815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947218	HF183-qPCR	94.9		P	50 - 175
1947510	HF183-qPCR	94.8		P	50 - 175
1948583	HF183-qPCR	96.0		P	50 - 175
1948586	HF183-qPCR	104		P	50 - 175
1952987	HF183-qPCR	86.9		P	50 - 175
1952988	HF183-qPCR	84.4		P	50 - 175
1953037	HF183-qPCR	92.3	99.4	P/P	50 - 175
1953038	HF183-qPCR	99.2		P	50 - 175
1953137	HF183-qPCR	102		P	50 - 175
1953418	HF183-qPCR	96.4		P	50 - 175
1953419	HF183-qPCR	95.9		P	50 - 175
1953420	HF183-qPCR	92.1		P	50 - 175
1953421	HF183-qPCR	97.2		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P337261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940862	HF183-qPCR	93.6		P	50 - 175
1947864	HF183-qPCR	92.7		P	50 - 175
1947865	HF183-qPCR	80.2		P	50 - 175
1948297	HF183-qPCR	84.0		P	50 - 175
1953422	HF183-qPCR	85.7		P	50 - 175
1953423	HF183-qPCR	92.3		P	50 - 175
1953424	HF183-qPCR	85.9		P	50 - 175
1955372	HF183-qPCR	95.9		P	50 - 175
1955373	HF183-qPCR	85.7		P	50 - 175
1955374	HF183-qPCR	104		P	50 - 175
1955375	HF183-qPCR	93.0	92.2	P/P	50 - 175
1955377	HF183-qPCR	84.8		P	50 - 175
1955528	HF183-qPCR	88.4		P	50 - 175
1955930	HF183-qPCR	91.8		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P337261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1953423	GULL2-qPCR	89.2		P	50 - 300
1955242	GULL2-qPCR	56.4		P	50 - 300
1955372	GULL2-qPCR	54.7		P	50 - 300
1955375	GULL2-qPCR	53.1	60.5	P/P	50 - 300

Reference Method: SOP-PCR-1.4
Batch ID: P337261

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1953423	BacR-qPCR	62.7		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P337739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1953408	Chlorophyll-a, Corrected	3.58	Sample	P	0 - 25
1953408	Chlorophyll-a, Uncorrected	7.04	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P336815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1953037	HF183-qPCR	3.54	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P337261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955375	HF183-qPCR	0.813	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P337261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955375	GULL2-qPCR	13.0	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: 1953418
Field Sample ID: G2NE0899 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	107	P	50 - 300

Lab Sample ID: 1953419
Field Sample ID: G2NE0966 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	109	P	50 - 300

Lab Sample ID: 1953420
Field Sample ID: G2NE0959 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	100	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1953421
 Field Sample ID: G2NE0089 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	95.0	P	50 - 300

Lab Sample ID: 1953422
 Field Sample ID: G2NE0760 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	90.2	P	50 - 300

Lab Sample ID: 1953423
 Field Sample ID: G2NE0801 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	94.8	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	112	P	50 - 300

Lab Sample ID: 1953424
 Field Sample ID: G2NE0961 12122017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.9	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	94.3							3.58	
	Chlorophyll-a, Uncorrected								7.04	
SOP-PCR-1.0	HF183-qPCR	116	102	121	84.4	94.9	94.8		3.54	
		115			96.0					
	HF183-qPCR	117	102	117	93.6	84.0	88.4			0.813
		117			91.8					
SOP-PCR-1.2	GULL2-qPCR	135	99.0	108	89.2	56.4	54.7			13.0
		59.3			53.1					
SOP-PCR-1.4	BacR-qPCR	140	100		62.7					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1953407, 1953408, 1953409, 1953410
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1953412, 1953413, 1953414, 1953415, 1953416, 1953417, 1956574
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1953418, 1953419, 1953420, 1953421, 1953422, 1953423, 1953424
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	1953423
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1953423
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1953418, 1953419, 1953420, 1953421, 1953422, 1953423, 1953424

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	12/13/2017	12/13/2017 12:29	Cathy Sherrer	01/03/2018 08:50	Jennifer Mihalic	1953407, 1953408, 1953409, 1953410
SM 9223 B	12/12/2017	12/12/2017 15:30		12/13/2017 16:42	ALS Environmental, Jax	1953412, 1953413, 1953414, 1953415, 1953416, 1953417, 1956574
SOP-PCR-1.0	12/13/2017	12/13/2017 13:30	Puja Jasrotia	12/27/2017 12:47	Sarah Menz	1953418, 1953419, 1953420, 1953421
	12/13/2017	12/13/2017 13:30	Sarah Menz	12/27/2017 13:11	Sarah Menz	1953422, 1953423, 1953424
SOP-PCR-1.2	12/13/2017	12/13/2017 13:30	Sarah Menz	01/18/2018 10:27	Sarah Menz	1953423
SOP-PCR-1.4	12/13/2017	12/13/2017 13:30	Sarah Menz	01/10/2018 11:08	Sarah Menz	1953423
SOP-PCR-4.0	12/13/2017	12/13/2017 13:30	Avril Wood	01/08/2018 11:09	Puja Jasrotia	1953418, 1953419, 1953420, 1953421, 1953422, 1953423, 1953424