

Biological Analysis Report

SO-DIST-2017-11-16-02

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

Overflow Analyses Performed By:
Sanders Laboratories
10090 Bavaria Road
Ft. Myers, FL 33913
DOH Accreditation E85457

Event Description: **Woodmere & Gottfried**
Request ID: **RQ-2017-11-13-07**
Customer: **SO-DIST**
Project ID: **SMP**

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FLDEP South District Office
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Date Certified: 12-JAN-2018 14:24



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: Alligator Creek @ Small Stream Inflow

Collection Date/Time: 11/15/2017 09:55

Field ID: G2SD111517-1

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947216	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1947219	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	196		MPN/100 mL		

Sample Location: Field Blank

Collection Date/Time: 11/15/2017 10:35

Field ID: G2SD092617-2

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947214	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P336302	
		Phaeophytin-a	0.40	U	ug/L	P336302	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P336302	

Sample Location: Alligator Creek @ Upstream of Jacaranda

Collection Date/Time: 11/15/2017 10:30

Field ID: G2SD111517-3

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947215	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.2		ug/L	P336302	
		Phaeophytin-a	3.0		ug/L	P336302	
		Chlorophyll-a, Uncorrected	9.2		ug/L	P336302	

Sample Location: Woodmere Canal at Heron Road

Collection Date/Time: 11/15/2017 11:00

Field ID: G2SD111517-4

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947217	SOP-PCR-1.0	HF183-qPCR**	2.25E+03		GEU/100 mL	P336561	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1947220	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	2420	J	MPN/100 mL		

Ref. Method and Comment:

Enterolert/QT: ""All Quanti-Tray wells were positive. Results maybe higher than reported.

Sample Location: Gottfried Creek @ Deer Creek Mobile Home Park

Collection Date/Time: 11/15/2017 11:45

Field ID: G2SD111517-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947218	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P336815	
	SOP-PCR-1.2	GULL2-qPCR**	2.1E+03	T	TSC/100 mL	P336815	
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P336815	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1947221	Enterolert/QT	ENTEROCOCCI-ENTEROLERT	2420		MPN/100 mL		

Ref. Method and Comment:

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

SOP-PCR-1.4: No amplification of BACR marker. Precision data unavailable for Analysis Batch A81374.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P336302

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: P336561

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

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

Reference Method: SOP-PCR-1.2
Batch ID: P336815

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: P336815

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P336302

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.3		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P336561

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	108	115	P/P	50 - 175
HF183-qPCR	67.2	110	P/P	50 - 175

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

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

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-1.2
Batch ID: P336815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	143	59.3	P/P	50 - 300
GULL2-qPCR	105	141	P/P	50 - 300

Reference Method: SOP-PCR-1.4
Batch ID: P336815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	100	153	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P336561

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1942583	HF183-qPCR	68.5		P	50 - 175
1943494	HF183-qPCR	67.8		P	50 - 175
1946368	HF183-qPCR	70.3		P	50 - 175
1947217	HF183-qPCR	75.7		P	50 - 175
1950320	HF183-qPCR	67.8		P	50 - 175
1950321	HF183-qPCR	67.6		P	50 - 175
1951207	HF183-qPCR	99.7		P	50 - 175
1951442	HF183-qPCR	79.1		P	50 - 175
1951443	HF183-qPCR	75.7	74.3	P/P	50 - 175
1951610	HF183-qPCR	92.2		P	50 - 175
1951702	HF183-qPCR	83.4		P	50 - 175
1951703	HF183-qPCR	76.2		P	50 - 175

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

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
1953420	HF183-qPCR	92.1		P	50 - 175
1953421	HF183-qPCR	97.2		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P336815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947218	GULL2-qPCR	84.9		P	50 - 300
1953137	GULL2-qPCR	53.1		P	50 - 300

Reference Method: SOP-PCR-1.4
Batch ID: P336815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1947218	BacR-qPCR	57.8		P	50 - 175
1953137	BacR-qPCR	68.2		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P336302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947273	Chlorophyll-a, Corrected	4.18	Sample	P	0 - 25
1947273	Chlorophyll-a, Uncorrected	3.15	Sample	P	0 - 25
1947273	Phaeophytin-a	0.296	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P336561

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1951443	HF183-qPCR	1.80	Spike	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-1.2
Batch ID: P336815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1954937	GULL2-qPCR	9.94	Spike	P	0 - 25
1955375	GULL2-qPCR	13.0	Spike	P	0 - 25

Quality Assurance Report Precision

* 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: 1947217
Field Sample ID: G2SD111517-4

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	94.9	P	50 - 300

Lab Sample ID: 1947218
Field Sample ID: G2SD111517-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	100	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	94.9	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	98.3							4.18	
	Chlorophyll-a, Uncorrected								3.15	
	Phaeophytin-a								0.296	
SOP-PCR-1.0	HF183-qPCR	108	110	67.2	79.1	75.7	74.3			1.80
		115			92.2					
	HF183-qPCR	116	102	121	84.4	94.9	94.8		3.54	
		115			96.0					
SOP-PCR-1.2	GULL2-qPCR	143	141	105	84.9	53.1				9.94 13.0
		59.3								
SOP-PCR-1.4	BacR-qPCR	153	100		57.8	68.2				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E85457	Enterococci by MPN method by Sanders Laboratories Overflow Laboratory for SD	1947219, 1947220, 1947221
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1947214, 1947215
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1947217, 1947218
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	1947218
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1947218
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1947216, 1947217, 1947218

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/15/2017	11/15/2017 13:55		11/16/2017 14:15	Sanders Laboratories, Inc -	1947219, 1947220, 1947221
SM 10200 H (mod.)	11/16/2017	11/16/2017 15:25	Cathy Sherrer	12/04/2017	Kim M. Spencer	1947214, 1947215
SOP-PCR-1.0	11/16/2017	11/16/2017 15:00	Puja Jasrotia	12/27/2017	Sarah Menz	1947218
	11/16/2017	11/16/2017 15:00	Sarah Menz	12/14/2017	Sarah Menz	1947217
SOP-PCR-1.2	11/16/2017	11/16/2017 15:00	Puja Jasrotia	01/11/2018	Sarah Menz	1947218
SOP-PCR-1.4	11/16/2017	11/16/2017 15:00	Puja Jasrotia	01/10/2018	Sarah Menz	1947218
SOP-PCR-4.0	11/16/2017	11/16/2017 15:00	Sarah Menz	12/12/2017	Puja Jasrotia	1947216, 1947217, 1947218