

Biological Analysis Report

SW-DIST-2018-03-02-01

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Tampa
9610 Princess Palm Avenue
Tampa, Florida 33619
DOH Accreditation E84589

Event Description: **Cockroach & Lil Manatee**
Request ID: **RQ-2018-02-26-11**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Cheryl Swanson - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Puja Jasrotia, Environmental Manager

Date Certified: 04-MAY-2018 13:56



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: Cockroach Bay at Dockage

Collection Date/Time: 03/01/2018 09:50

Field ID: G1SW0090

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971365	SM 10200 H (mod.)	Chlorophyll-a, Corrected	18		ug/L	P341183	
		Phaeophytin-a	6.6		ug/L	P341183	
		Chlorophyll-a, Uncorrected	23		ug/L	P341183	
1971369	SM 9222 D	Fecal Coliforms-Membrane Filter	24	B	cfu/100 mL		
	SM 9230 C	Enterococci-Membrane Filter	20	B	cfu/100 mL		

Sample Location: Cockroach Bay at Boat Ramp

Collection Date/Time: 03/01/2018 09:30

Field ID: G1SW0089

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971366	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.9		ug/L	P341183	
		Phaeophytin-a	1.9		ug/L	P341183	
		Chlorophyll-a, Uncorrected	5.2		ug/L	P341183	
1971370	SM 9222 D	Fecal Coliforms-Membrane Filter	4	U	cfu/100 mL		
	SM 9230 C	Enterococci-Membrane Filter	4	U	cfu/100 mL		

Sample Location: Piney Pt Creek @ County Line Rd

Collection Date/Time: 03/01/2018 10:30

Field ID: G1SW0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971367	SOP-PCR-1.0	HF183-qPCR**	110	T	GEU/100 mL	P342672	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				
1971371	SM 9230 C	Enterococci-Membrane Filter	14100	B	cfu/100 mL		

Sample Location: Little Manatee River at SP Boat Ramp

Collection Date/Time: 03/01/2018 11:15

Field ID: G2SW0037

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971364	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.83	I	ug/L	P341183	
		Phaeophytin-a	0.93	I	ug/L	P341183	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P341183	
1971368	EPA 1603	Escherichia coli-Membrane Filter**	90	B	cfu/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P341183

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P342672

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P341183

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	103		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P342672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	95.6	70.8	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P342672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1971367	HF183-qPCR	83.9		P	50 - 175
1973484	HF183-qPCR	89.7	92.8	P/P	50 - 175
1974754	HF183-qPCR	92.3		P	50 - 175
1974755	HF183-qPCR	91.0		P	50 - 175
1975217	HF183-qPCR	78.0		P	50 - 175
1981244	HF183-qPCR	115		P	50 - 175
1981705	HF183-qPCR	78.8		P	50 - 175
1981706	HF183-qPCR	83.1		P	50 - 175
1981851	HF183-qPCR	78.1		P	50 - 175
1982097	HF183-qPCR	90.7		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P341183

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971281	Chlorophyll-a, Corrected	17.5	Sample	P	0 - 25
1971281	Chlorophyll-a, Uncorrected	16.3	Sample	P	0 - 25
1971281	Phaeophytin-a	12.8	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P342672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1973484	HF183-qPCR	3.37	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: 1971367
Field Sample ID: G1SW0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	119	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	103						17.5	
	Chlorophyll-a, Uncorrected							16.3	
	Phaeophytin-a							12.8	
SOP-PCR-1.0	HF183-qPCR	70.8	95.6	89.7	92.8	92.3			3.37
				91.0					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E84589	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Tampa Lab for SWD	1971368
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1971364, 1971365, 1971366
SM 9222 D / E84589	Fecal coliforms by membrane filter method by Advanced Environmental Overflow Laboratories for SWD	1971369, 1971370
SM 9230 C / E84589	Enterococci by membrane filter method by Advanced Environmental Overflow Laboratories for SWD	1971369, 1971370, 1971371
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1971367
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1971367

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	03/01/2018	03/01/2018 15:00		03/02/2018 15:00	AEL - Tampa	1971368
SM 10200 H (mod.)	03/02/2018	03/02/2018 14:21	Mariam Hanna	03/07/2018 14:00	Carina A. Tull	1971364, 1971365, 1971366
SM 9222 D	03/01/2018	03/01/2018 15:45		03/02/2018 13:45	AEL - Tampa	1971369, 1971370
SM 9230 C	03/01/2018	03/01/2018 15:30		03/02/2018 13:30	AEL - Tampa	1971369, 1971370, 1971371
SOP-PCR-1.0	03/02/2018	03/02/2018 13:00	Puja Jasrotia	04/09/2018 15:43	Mailin Lopez	1971367
SOP-PCR-4.0	03/02/2018	03/02/2018 13:00	Angela Smith	04/17/2018 14:27	Puja Jasrotia	1971367