

Biological Analysis Report

SE-DIST-2017-10-17-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
Advanced Environmental Labs - Miami
10200 USA Today Way
Mirimar, FL 33025
DOH Accreditation E82535

Event Description: **SMP-Broward Blue**
Request ID: **RQ-2017-10-16-31**
Customer: **SE-DIST**
Project ID: **SMP**

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Date Certified: 29-NOV-2017 11:13



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: South New River Canal C-11 @ S Flamingo

Collection Date/Time: 10/16/2017 09:55

Field ID: 28030546

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937135	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.1		ug/L	P333930	
		Phaeophytin-a	1.4		ug/L	P333930	
		Chlorophyll-a, Uncorrected	5.1		ug/L	P333930	
1937146	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1937150	EPA 1603	Escherichia coli-Membrane Filter**	85	B	cfu/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: S New River Canal East

Collection Date/Time: 10/16/2017 10:30

Field ID: G4SE0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937136	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.7		ug/L	P333930	
		Phaeophytin-a	3.2		ug/L	P333930	
		Chlorophyll-a, Uncorrected	7.8		ug/L	P333930	
1937147	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1937151	EPA 1603	Escherichia coli-Membrane Filter**	90	B	cfu/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: Dania Cutoff Canal @ US1

Collection Date/Time: 10/16/2017 10:45

Field ID: 28030552

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937138	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.3	A	ug/L	P333930	
		Phaeophytin-a	1.2	I	ug/L	P333930	
		Chlorophyll-a, Uncorrected	3.0	A	ug/L	P333930	
1937148	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1937153	EPA 1600	Enterococci-Membrane Filter	48		cfu/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 0.85 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: C-10 Canal @ Stirling Rd.

Collection Date/Time: 10/16/2017 11:15

Field ID: G4SE0036

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937139	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.3		ug/L	P333930	
		Phaeophytin-a	2.5		ug/L	P333930	
		Chlorophyll-a, Uncorrected	11		ug/L	P333930	
1937149	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P333248	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1937154	EPA 1600	Enterococci-Membrane Filter	50		cfu/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.

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

Sample Location: West Lake Middle North Sheridan

Collection Date/Time: 10/16/2017 12:00

Field ID: G4SE0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1937137	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.5		ug/L	P333930	
		Phaeophytin-a	0.73	I	ug/L	P333930	
		Chlorophyll-a, Uncorrected	4.1		ug/L	P333930	
1937152	EPA 1600	Enterococci-Membrane Filter	28	B	cfu/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.

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P333930

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: P333248

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: P333930

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	102		P	84 - 116

Reference Method: SOP-PCR-1.0

Batch ID: P333248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	128	101	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P333248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1929071	HF183-qPCR	81.7		P	50 - 175
1929354	HF183-qPCR	79.5		P	50 - 175
1930545	HF183-qPCR	62.1		P	50 - 175
1936308	HF183-qPCR	71.9		P	50 - 175
1936311	HF183-qPCR	69.8		P	50 - 175
1936312	HF183-qPCR	79.3	80.7	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P333248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1937035	HF183-qPCR	80.1		P	50 - 175
1937036	HF183-qPCR	78.3		P	50 - 175
1937037	HF183-qPCR	79.6		P	50 - 175
1937038	HF183-qPCR	79.4		P	50 - 175
1937039	HF183-qPCR	73.2		P	50 - 175
1937149	HF183-qPCR	83.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P333930

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1937138	Chlorophyll-a, Corrected	5.75	Sample	P	0 - 25
1937138	Chlorophyll-a, Uncorrected	10.7	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P333248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1936312	HF183-qPCR	1.79	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: 1937149
 Field Sample ID: G4SE0036

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.8	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision
				LCS			SMP
SM 10200 H (mod.)	Chlorophyll-a, Corrected	102					5.75
	Chlorophyll-a, Uncorrected						10.7
SOP-PCR-1.0	HF183-qPCR	101	128	71.9	69.8	79.3	1.79
				80.7			

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1600 / E82535	Enterococci by membrane filter method by Advanced Environmental Miami Overflow Laboratories for SED	1937152, 1937153, 1937154
EPA 1603 / E82535	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Miami Overflow Laboratories for SED	1937150, 1937151
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1937135, 1937136, 1937137, 1937138, 1937139
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1937149
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1937146, 1937147, 1937148, 1937149

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1600	10/16/2017	10/16/2017 18:33	Cathy Sherrer	10/17/2017 19:15	AEL - Mirimar	1937152, 1937153, 1937154
EPA 1603	10/16/2017	10/16/2017 17:39		10/17/2017 19:13	AEL - Mirimar	1937150, 1937151
SM 10200 H (mod.)	10/17/2017	10/17/2017 12:27		10/24/2017	Kim M. Spencer	1937135, 1937136, 1937137, 1937138, 1937139
SOP-PCR-1.0	10/17/2017	10/17/2017 15:00	Avril Wood	10/20/2017	Sarah Menz	1937149
SOP-PCR-4.0	10/17/2017	10/17/2017 15:00	Avril Wood	10/30/2017	Puja Jasrotia	1937146, 1937147, 1937148, 1937149