Biological Analysis Report

SE-DIST-2018-11-29-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
Pace Analytical Services
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DOH Accreditation E86240

Event Description: **SMP- Dade**
Request ID: **RQ-2018-11-26-06**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 29-DEC-2018 12:35

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: SNAKE CREEK CANAL (NORTH FORK) @ STIRLING **Collection Date/Time: 11/28/2018 11:25**

Field ID: G4SE0049 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044545	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	I	ug/L	P355955	
		Phaeophytin-a	0.60	U	ug/L	P355955	
		Chlorophyll-a, Uncorrected	1.5		ug/L	P355955	
2044552	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	10.0		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: SNAKE CREEK CANAL (NF) @ STIRLING **Collection Date/Time: 11/28/2018 11:30**

Field ID: G4SE0049_DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044542	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	I	ug/L	P355951	
		Phaeophytin-a	0.60	U	ug/L	P355951	
		Chlorophyll-a, Uncorrected	0.49	I	ug/L	P355951	

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: CUTLER DRAIN (C-100)(CD-06 MIAMI) **Collection Date/Time: 11/28/2018 13:40**

Field ID: G4SECD06 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044551	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	538		MPN/100 mL		

Sample Location: WAGNER CREEK (WC-02) **Collection Date/Time: 11/28/2018 14:45**

Field ID: G4SEWC02 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044544	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.9		ug/L	P355955	
		Phaeophytin-a	0.60	U	ug/L	P355955	
		Chlorophyll-a, Uncorrected	2.0		ug/L	P355955	
2044547	SOP-PCR-1.0	HF183-qPCR**	1.30E+03		GEU/100 mL	P355112	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
2044550	Enterolert/QT	Enterococci-Quanti-Tray	108		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: MIAMI (C-6) @ S26 **Collection Date/Time: 11/28/2018 15:15**

Field ID: G4SE0024 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044543	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P355951	
		Phaeophytin-a	0.60	U	ug/L	P355951	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P355951	
2044546	SOP-PCR-1.0	HF183-qPCR**	990		GEU/100 mL	P355112	LCS

Field ID: G4SE0024 Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2044546	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
2044549	Enterolert/QT	Enterococci-Quanti-Tray	20.0		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.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P355951

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.60	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P355955

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.60	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P355112

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P355951

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

Reference Method: SM 10200 H (mod.)
Batch ID: P355955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	101		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P355112

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	184	113	F/P	50 - 175
HF183-qPCR	204	99.2	F/P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P355112

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2034437	HF183-qPCR	56.6		P	50 - 175
2034438	HF183-qPCR	54.5		P	50 - 175
2034440	HF183-qPCR	51.9		P	50 - 175
2038134	HF183-qPCR	70.0		P	50 - 175
2038135	HF183-qPCR	65.6		P	50 - 175
2038136	HF183-qPCR	70.4		P	50 - 175
2039236	HF183-qPCR	83.2		P	50 - 175
2040439	HF183-qPCR	71.4		P	50 - 175
2042347	HF183-qPCR	76.9		P	50 - 175
2042348	HF183-qPCR	77.6		P	50 - 175
2044072	HF183-qPCR	77.3	84.4	P/P	50 - 175
2044546	HF183-qPCR	80.2		P	50 - 175
2044547	HF183-qPCR	89.1		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P355951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044435	Chlorophyll-a, Corrected	2.20	Sample	P	0 - 25
2044435	Chlorophyll-a, Uncorrected	3.68	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P355955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044639	Chlorophyll-a, Corrected	7.66	Sample	P	0 - 25
2044639	Chlorophyll-a, Uncorrected	4.30	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P355112

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2044072	HF183-qPCR	8.82	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: 2044546
Field Sample ID: G4SE0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	111	P	50 - 300

Quality Assurance Report
Surrogates

Lab Sample ID: 2044547
Field Sample ID: G4SEWC02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	103			2.20	
	Chlorophyll-a, Corrected	101			7.66	
	Chlorophyll-a, Uncorrected				3.68	
	Chlorophyll-a, Uncorrected				4.30	
SOP-PCR-1.0	HF183-qPCR	184 99.2 204 113	51.9 83.2 71.4 76.9			8.82

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E86240	Enterococci by Enterolert Quanti-Tray method by Pace Analytical Services in Pompano Beach	2044549, 2044550
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2044542, 2044543, 2044544, 2044545
SM 9223 Quanti-Tray / E86240	Escherichia coli by Quanti-Tray method by Pace Analytical Services in Pompano Beach	2044551, 2044552
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2044546, 2044547
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2044546, 2044547

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/28/2018	11/28/2018 17:07		11/29/2018 18:28	Pace Analytical Pompano	2044549, 2044550
SM 10200 H (mod.)	11/29/2018	11/29/2018 14:25	Edwin Gonzalez-Soto	12/10/2018 15:45	Peterson Janvier	2044542, 2044543
	11/29/2018	11/29/2018 14:25	Edwin Gonzalez-Soto	12/10/2018 16:25	Peterson Janvier	2044544, 2044545
SM 9223 Quanti-Tray	11/28/2018	11/28/2018 17:17		11/29/2018 14:20	Pace Analytical Pompano	2044551, 2044552
SOP-PCR-1.0	11/29/2018	11/29/2018 15:00	Sarah Menz	12/04/2018 16:58	Mailin Lopez	2044546, 2044547
SOP-PCR-4.0	11/29/2018	11/29/2018 15:00	Angela Smith	12/17/2018 10:23	Sarah Menz	2044546, 2044547