

Biological Analysis Report

SE-DIST-2019-01-30-01

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

Overflow Analyses Performed By:
Pace Analytical Services
3610 Park Central N.
Pompano Beach FL 33064
DOH Accreditation E86240

Event Description: **SMP- Fort Lauderdale**
Request ID: **RQ-2019-01-21-49**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact
Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 12-MAR-2019 10:47



NON-CONFORMANCE REPORT INCLUDED

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: WEST LAKE @ SHERIDAN

Collection Date/Time: 01/29/2019 12:50

Field ID: G4SE0037

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058039	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	IJ	ug/L	P358494	
		Phaeophytin-a	0.60	UJ	ug/L	P358494	
		Chlorophyll-a, Uncorrected	1.6	J	ug/L	P358494	
2062352	Enterolert/QT	Enterococci-Quanti-Tray	No Result	O	MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Phaeophytin-a results may be biased high. Chlorophyll-a corrected results may be biased low. See nonconformance report #7482.

Enterolert/QT: See non-conformance report #7498

Sample Location: DANIA CUTOFF @ OLD GRIFFIN

Collection Date/Time: 01/29/2019 13:30

Field ID: G4SE0106

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058042	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1	J	ug/L	P358523	
		Phaeophytin-a	0.63	IJ	ug/L	P358523	
		Chlorophyll-a, Uncorrected	2.5	J	ug/L	P358523	
2058046	SOP-PCR-1.0	HF183-qPCR**	360	I	GEU/100 mL	P358856	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P357758	
2058050	Enterolert/QT	Enterococci-Quanti-Tray	183		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Precision data isn't available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for precision data. See nonconformance report 7482. Phaeo-a may be biased high Chl-a corr may be biased low

Sample Location: NORTH FORK NEW RIVER @ SISTRUNK

Collection Date/Time: 01/29/2019 14:10

Field ID: G4SEB064

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058040	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.7	J	ug/L	P358494	
		Phaeophytin-a	1.6	IJ	ug/L	P358494	
		Chlorophyll-a, Uncorrected	6.8	J	ug/L	P358494	
2058044	SOP-PCR-1.0	HF183-qPCR**	360	I	GEU/100 mL	P358856	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P357758	
2058048	Enterolert/QT	Enterococci-Quanti-Tray	301		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Phaeophytin-a results may be biased high. Chlorophyll-a corrected results may be biased low. See nonconformance report #7482.

Sample Location: NEW RIVER @ NW 27TH

Collection Date/Time: 01/29/2019 14:35

Field ID: G4SE0085

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058041	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.4	J	ug/L	P358494	
		Phaeophytin-a	1.1	IJ	ug/L	P358494	
		Chlorophyll-a, Uncorrected	5.2	J	ug/L	P358494	
2058045	SOP-PCR-1.0	HF183-qPCR**	620	I	GEU/100 mL	P358856	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P357758	
2058049	Enterolert/QT	Enterococci-Quanti-Tray	241		MPN/100 mL		

Field ID: G4SE0085

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

SM 10200 H (mod.): Phaeophytin-a results may be biased high. Chlorophyll-a corrected results may be biased low. See nonconformance report #7482.

Sample Location: DANIA CUTOFF @ OLD GRIFFIN

Collection Date/Time: 01/29/2019 13:30

Field ID: G4SE0106_DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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2058043	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.0	J	ug/L	P358523	
		Phaeophytin-a	0.61	IJ	ug/L	P358523	
		Chlorophyll-a, Uncorrected	2.5	J	ug/L	P358523	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data isn't available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for precision data. See nonconformance report 7482. Phaeo-a may be biased high Chl-a corr may be biased low

Non-Conformance Report

NCR ID: 7482

Event(s)

SE-DIST-2019-01-30-01

Job(s)

TLH-2019-01-30-15

Sample(s)

Test(s)

NCR Type: ANALYSIS

NCR Category: Analytical Measurement

Observation: Samples were inadvertently allowed to thaw overnight which does not comply with the method.

Resolution: Customers have been notified and results will be "J" qualified.

Authorized by/Date: Cheryl A. Swanson 2/25/2019

NCR ID: 7498

Event(s)

SE-DIST-2019-01-30-01

Job(s)

TLH-2019-01-30-17

Sample(s)

2062352

Test(s)

NCR Type: CUSTODY

NCR Category: Lost sample.

Observation: Analyses were not performed on sample due to it being misplaced after receipt.

Resolution: Customer has been notified and sample will be reported as No Result with an "O" qualifier.

Authorized by/Date: Cheryl A. Swanson 2/22/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P358494

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P358523

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: P358856

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: P358494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	107		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P358523

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	114		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P358856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	121	190	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P358856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2054958	HF183-qPCR	113		P	50 - 175
2054959	HF183-qPCR	99.4		P	50 - 175
2058044	HF183-qPCR	103		P	50 - 175
2058045	HF183-qPCR	103		P	50 - 175
2058046	HF183-qPCR	115		P	50 - 175
2062018	HF183-qPCR	94.2		P	50 - 175
2062393	HF183-qPCR	115		P	50 - 175
2062395	HF183-qPCR	101		P	50 - 175
2062396	HF183-qPCR	123		P	50 - 175
2062623	HF183-qPCR	94.6		P	50 - 175
2062624	HF183-qPCR	112		P	50 - 175
2062985	HF183-qPCR	89.0		P	50 - 175
2063185	HF183-qPCR	115	109	P/P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P358494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2057757	Chlorophyll-a, Corrected	14.1	Sample	P	0 - 25
2057757	Chlorophyll-a, Uncorrected	14.4	Sample	P	0 - 25
2057757	Phaeophytin-a	15.7	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P358523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058230	Chlorophyll-a, Corrected	4.37	Sample	P	0 - 25
2058230	Chlorophyll-a, Uncorrected	3.34	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P358856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063185	HF183-qPCR	5.92	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: 2058044
Field Sample ID: G4SEB064

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	90.3	P	50 - 300

Lab Sample ID: 2058045
Field Sample ID: G4SE0085

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	95.8	P	50 - 300

Lab Sample ID: 2058046
Field Sample ID: G4SE0106

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	88.1	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	107			14.1	
	Chlorophyll-a, Corrected	114			4.37	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10200 H (mod.)	Chlorophyll-a, Uncorrected							14.4	
	Chlorophyll-a, Uncorrected							3.34	
	Phaeophytin-a							15.7	
SOP-PCR-1.0	HF183-qPCR	190	121	94.2	115	101			5.92
				123					

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	2058048, 2058049, 2058050, 2062352
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2058039, 2058040, 2058041, 2058042, 2058043
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2058044, 2058045, 2058046
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2058044, 2058045, 2058046

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	01/29/2019	01/29/2019 17:50		01/29/2019 17:50	Pace Analytical Pompano	2062352
	01/29/2019	01/29/2019 17:50		01/30/2019 19:28	Pace Analytical Pompano	2058048, 2058049, 2058050
SM 10200 H (mod.)	01/30/2019	01/30/2019 13:45	Edwin Gonzalez-Soto	02/05/2019 14:50	Jennifer Mihalic	2058039, 2058040, 2058041
	01/30/2019	01/30/2019 13:45	Edwin Gonzalez-Soto	02/05/2019 15:55	Jennifer Mihalic	2058042, 2058043
SOP-PCR-1.0	01/30/2019	01/30/2019 12:45	Angela Smith	02/20/2019 13:41	Mailin Lopez	2058044, 2058045, 2058046
SOP-PCR-4.0	01/30/2019	01/30/2019 12:45	Angela Smith	02/22/2019 09:32	Sarah Menz	2058044, 2058045, 2058046