

Biological Analysis Report

SO-DIST-2019-08-30-01

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

Overflow Analyses Performed By:
Benchmark EnviroAnalytical, Inc. - North Port
1001 Corporate Avenue, Suite 102
North Port, FL 34289
DOH Accreditation E85086

Event Description: **Sara Tidal**
Request ID: **RQ-2019-08-19-26**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Fort Myers, FL 33901-3381
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Certified by: Jacqueline Savage, Environmental Administrator

Date Certified: 01-OCT-2019 12:25

A handwritten signature in black ink that reads "Jackie Savage". The signature is written in a cursive, flowing style.

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: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 08/29/2019 09:45

Field ID: G3SD0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116022	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8	I	ug/L	P371297	
		Phaeophytin-a	1.1	U	ug/L	P371297	
		Chlorophyll-a, Uncorrected	3.2		ug/L	P371297	
2116026	Enterolert/QT	Enterococci-Quanti-Tray	683		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: Curry(Tidal)@AlbeeFarm

Collection Date/Time: 08/29/2019 09:50

Field ID: G3SD0066_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116024	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.8		ug/L	P370377	RPD
		Phaeophytin-a	0.86	IV	ug/L	P370377	
		Chlorophyll-a, Uncorrected	3.4	V	ug/L	P370377	RPD

Ref. Method and Comment:
 SM 10200 H (mod.): Prec data unavailable for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data. Result V-qualified due to lab blk failure for Uncorr chl-a and phaeo-a components.

Sample Location: Hatchett@PinebrookRd

Collection Date/Time: 08/29/2019 10:20

Field ID: G3SD0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116027	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	134		MPN/100 mL		

Sample Location: Alligator @ Jacaranda

Collection Date/Time: 08/29/2019 10:40

Field ID: G2SD0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116023	SM 10200 H (mod.)	Chlorophyll-a, Corrected	20		ug/L	P371297	
		Phaeophytin-a	4.0		ug/L	P371297	
		Chlorophyll-a, Uncorrected	23		ug/L	P371297	
2116029	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	231		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: WoodmereCreek@HeronRd

Collection Date/Time: 08/29/2019 11:10

Field ID: G2SD0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116025	SOP-PCR-1.0	HF183-qPCR**	570	I	GEU/100 mL	P369893	
2116030	Enterolert/QT	Enterococci-Quanti-Tray	404		MPN/100 mL		

Sample Location: UnnamedDitch@IndianaAve

Collection Date/Time: 08/29/2019 11:35

Field ID: G2SD0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: G2SD0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116028	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	187		MPN/100 mL		

Sample Location: Gottfried@DeerCkMobile

Collection Date/Time: 08/29/2019 11:55

Field ID: G2SD0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2116031	Enterolert/QT	Enterococci-Quanti-Tray	52		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P370377

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.69	U	ug/L
Chlorophyll-a, Uncorrected	0.74	I	ug/L
Phaeophytin-a	0.83	I	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P371297

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.69	U	ug/L
Chlorophyll-a, Uncorrected	0.50	U	ug/L
Phaeophytin-a	0.75	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P369893

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: P370377

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	90.6		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P371297

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	86.5		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P369893

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	143	171	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P369893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107028	HF183-qPCR	109		P	50 - 175
2115044	HF183-qPCR	132		P	50 - 175
2115733	HF183-qPCR	118		P	50 - 175
2115734	HF183-qPCR	135		P	50 - 175
2115735	HF183-qPCR	118		P	50 - 175
2115736	HF183-qPCR	129	118	P/P	50 - 175
2115970	HF183-qPCR	116		P	50 - 175
2116025	HF183-qPCR	113		P	50 - 175
2116097	HF183-qPCR	131		P	50 - 175
2116098	HF183-qPCR	124		P	50 - 175
2116099	HF183-qPCR	129		P	50 - 175
2116100	HF183-qPCR	124		P	50 - 175
2116129	HF183-qPCR	119		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P370377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2116045	Chlorophyll-a, Corrected	25.3	Sample	F	0 - 25
2116045	Chlorophyll-a, Uncorrected	26.0	Sample	F	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P369893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2115736	HF183-qPCR	8.63	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: 2116025
Field Sample ID: G2SD0027

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	115	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	90.6			25.3	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	86.5							
	Chlorophyll-a, Uncorrected							26.0	
SOP-PCR-1.0	HF183-qPCR	171	143	118	135	118			8.63
				129					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E85086	Enterococci by Enterolert/QT by BEA South in North Port	2116026, 2116030, 2116031
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2116022, 2116023, 2116024
SM 9223 Quanti-Tray / E85086	E. coli by Colilert/QT by BEA South in North Port	2116027, 2116028, 2116029
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2116025

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	08/29/2019	08/29/2019 14:01		08/30/2019 15:17	Benchmark EnviroAnalytical in North Port	2116026, 2116030, 2116031
SM 10200 H (mod.)	08/30/2019	08/30/2019 14:40	Peterson Janvier	09/09/2019 08:35	Peterson Janvier	2116022, 2116023
	08/30/2019	08/30/2019 14:40	Peterson Janvier	09/09/2019 10:19	Peterson Janvier	2116024
SM 9223 Quanti-Tray	08/29/2019	08/29/2019 14:11		08/30/2019 15:19	Benchmark EnviroAnalytical in North Port	2116027, 2116028, 2116029
SOP-PCR-1.0	08/30/2019	08/30/2019 12:45	Angela Smith	09/12/2019 10:16	Mailin Lopez	2116025