

Biological Analysis Report

SO-DIST-2019-10-29-01

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: **2019 SMP : Sarasota Tidal**
Request ID: **RQ-2019-10-28-13**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
2295 Victoria Ave. Suite 364
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Date Certified: 26-NOV-2019 08:11



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: 10/28/2019 10:15

Field ID: G3SD0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132225	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6	I	ug/L	P374088	
		Phaeophytin-a	1.8	U	ug/L	P374088	
		Chlorophyll-a, Uncorrected	2.8	I	ug/L	P374088	
2132229	Enterolert/QT	Enterococci-Quanti-Tray	323		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: Hatchett@PinebrookRd

Collection Date/Time: 10/28/2019 10:45

Field ID: G3SD0103

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132230	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	132		MPN/100 mL		

Sample Location: Alligator @ Jacaranda

Collection Date/Time: 10/28/2019 11:15

Field ID: G2SD0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132226	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P374088	
		Phaeophytin-a	4.5		ug/L	P374088	
		Chlorophyll-a, Uncorrected	15		ug/L	P374088	
2132233	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	75		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: 10/28/2019 11:55

Field ID: G2SD0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132227	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P373334	
2132234	Enterolert/QT	Enterococci-Quanti-Tray	1076		MPN/100 mL		

Sample Location: UnnamedDitch@IndianaAve

Collection Date/Time: 10/28/2019 12:36

Field ID: G2SD0022_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132231	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	226		MPN/100 mL		

Sample Location: Gottfried@DeerCkMobile

Collection Date/Time: 10/28/2019 13:05

Field ID: G2SD0028_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132235	Enterolert/QT	Enterococci-Quanti-Tray	199		MPN/100 mL		

Sample Location: UnnamedDitch@IndianaAve

Collection Date/Time: 10/28/2019 12:31

Field ID: G2SD0022

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132232	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	216		MPN/100 mL		

Sample Location: WoodmereCreek@HeronRd

Collection Date/Time: 10/28/2019 12:00

Field ID: FB_10282019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132228	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P373335	

Ref. Method and Comment:
 SOP-PCR-1.0: Precision data unavailable for Analysis Batch A95897.

Sample Location: Gottfried@DeerCkMobile

Collection Date/Time: 10/28/2019 13:00

Field ID: G2SD0028

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2132236	Enterolert/QT	Enterococci-Quanti-Tray	189		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P374088

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SOP-PCR-1.0
 Batch ID: P373334

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

Reference Method: SOP-PCR-1.0
 Batch ID: P373335

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: P374088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	108		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P373334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	123	144	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P373335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	120	152	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P373334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2131992	HF183-qPCR	105	110	P/P	50 - 175
2131993	HF183-qPCR	118		P	50 - 175
2132227	HF183-qPCR	113		P	50 - 175

Reference Method: SOP-PCR-1.0
 Batch ID: P373335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2132228	HF183-qPCR	116		P	50 - 175
2132373	HF183-qPCR	105		P	50 - 175
2132374	HF183-qPCR	103		P	50 - 175
2132571	HF183-qPCR	102		P	50 - 175
2132572	HF183-qPCR	99.1		P	50 - 175
2132669	HF183-qPCR	95.4		P	50 - 175
2132700	HF183-qPCR	90.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P374088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2132099	Chlorophyll-a, Corrected	9.13	Sample	P	0 - 25
2132099	Chlorophyll-a, Uncorrected	9.57	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P373334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2131992	HF183-qPCR	4.27	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Quality Assurance Report Surrogates

Lab Sample ID: 2132227
 Field Sample ID: G2SD0027

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

Lab Sample ID: 2132228
 Field Sample ID: FB_10282019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	106	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	108			9.13	
	Chlorophyll-a, Uncorrected				9.57	
SOP-PCR-1.0	HF183-qPCR	144 123	105 110 118			4.27
			113			
	HF183-qPCR	152 120	116 105 103			
			102			

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E85086	Enterococci by Enterolert/QT by BEA South in North Port	2132229, 2132234, 2132235, 2132236
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2132225, 2132226
SM 9223 Quanti-Tray / E85086	E. coli by Colilert/QT by BEA South in North Port	2132230, 2132231, 2132232, 2132233
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2132227, 2132228

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	10/28/2019	10/28/2019 15:30		10/29/2019 16:00	Benchmark EnviroAnalytical in North Port	2132229, 2132234, 2132235, 2132236
SM 10200 H (mod.)	10/29/2019	10/29/2019 14:21	Jessica Fetgatter	11/05/2019 10:25	Yuliya Danyuk	2132225, 2132226
SM 9223 Quanti-Tray	10/28/2019	10/28/2019 15:52		10/29/2019 16:23	Benchmark EnviroAnalytical in North Port	2132230, 2132231, 2132232, 2132233
SOP-PCR-1.0	10/29/2019	10/29/2019 14:30	Sarah Menz	11/19/2019 13:43	Lauren Campbell	2132227
	10/29/2019	10/29/2019 14:30	Sarah Menz	11/21/2019 15:22	Lauren Campbell	2132228