

Biological Analysis Report

SW-DIST-2019-11-15-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Tampa
9610 Princess Palm Avenue
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DOH Accreditation E84589

Event Description: **English, Pemberton, Baker, Spartman, Mustang, Poley**
Request ID: **RQ-2019-10-21-05**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 12-DEC-2019 17:03



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: English Creek above SR 60

Collection Date/Time: 11/14/2019 10:00

Field ID: G2SW0006

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2136550	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	I	ug/L	P374925	
		Phaeophytin-a	0.90	U	ug/L	P374925	
		Chlorophyll-a, Uncorrected	1.2	I	ug/L	P374925	
2136555	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P374309	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	I	TSC/100 mL	P374309	
2136556	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	222		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: P374925

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: P374309

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

Reference Method: SOP-PCR-1.4

Batch ID: P374309

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P374925

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	105		P	84 - 116

Reference Method: SOP-PCR-1.0

Batch ID: P374309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	119	136	P/P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P374309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	102	103	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P374309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136555	HF183-qPCR	119	119	P	50 - 175
2136599	HF183-qPCR	152		P/P	50 - 175
2137008	HF183-qPCR	122		P	50 - 175
2137009	HF183-qPCR	122		P	50 - 175
2137010	HF183-qPCR	110		P	50 - 175
2137011	HF183-qPCR	115		P	50 - 175
2137012	HF183-qPCR	93.1		P	50 - 175
2137013	HF183-qPCR	115		P	50 - 175
2137014	HF183-qPCR	118		P	50 - 175
2137015	HF183-qPCR	125		P	50 - 175
2137016	HF183-qPCR	122		P	50 - 175
2137017	HF183-qPCR	134		P	50 - 175
2137018	HF183-qPCR	101		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P374309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136555	BacR-qPCR	70.3	81.5	P	50 - 175
2136599	BacR-qPCR	79.9		P/P	50 - 175
2137008	BacR-qPCR	78.4		P	50 - 175
2137009	BacR-qPCR	85.8		P	50 - 175
2137010	BacR-qPCR	77.3		P	50 - 175
2137011	BacR-qPCR	77.3		P	50 - 175
2137012	BacR-qPCR	81.8		P	50 - 175
2137013	BacR-qPCR	72.5		P	50 - 175
2137014	BacR-qPCR	65.8		P	50 - 175
2137015	BacR-qPCR	72.4		P	50 - 175
2137016	BacR-qPCR	71.3		P	50 - 175
2137017	BacR-qPCR	84.6		P	50 - 175
2137018	BacR-qPCR	67.5		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P374309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136599	HF183-qPCR	24.2	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P374309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136599	BacR-qPCR	2.06	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2136555
Field Sample ID: G2SW0006

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	83.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	99.1	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	105							
SOP-PCR-1.0	HF183-qPCR	136	119	119	152	119			24.2
SOP-PCR-1.4	BacR-qPCR	103	102	70.3	79.9	81.5			2.06
				78.4					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2136550
SM 9223 B Quanti-Tray / E84589	E. coli by Colilert-18/QT by AEL in Tampa	2136556
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2136555
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2136555

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	11/15/2019	11/15/2019 13:30	Jessica Fetgatter	11/26/2019 09:30	Yuliya Danyuk	2136550
SM 9223 B Quanti-Tray	11/14/2019	11/14/2019 15:25		11/15/2019 09:25	AEL - Tampa	2136556
SOP-PCR-1.0	11/15/2019	11/15/2019 14:45	Angela Smith	12/05/2019 10:37	Lauren Campbell	2136555
SOP-PCR-1.4	11/15/2019	11/15/2019 14:45	Angela Smith	12/05/2019 15:10	Lauren Campbell	2136555