

Biological Analysis Report

TLH-ROC-2018-08-21-01

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

Event Description: **Run 5**
Request ID: **RQ-2018-08-20-58**
Customer: **TLH-ROC**
Project ID: **SMP**

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Certified by: Amelia G. Rankin,

Date Certified: 19-SEP-2018 17:34



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, Microbiology and Molecular.

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: LAKE SEMINOLE 200M FROM BOAT RAMP @ RIVER RD. **Collection Date/Time: 08/21/2018 10:15**

Field ID: G2TLHR0002

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018773	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P351115	
		Phaeophytin-a	2.5		ug/L	P351115	
		Chlorophyll-a, Uncorrected	13		ug/L	P351115	

Sample Location: MOSQUITO CREEK @ SR269 **Collection Date/Time: 08/21/2018 11:00**

Field ID: G2TLHR0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018774	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P351115	
		Phaeophytin-a	3.3		ug/L	P351115	
		Chlorophyll-a, Uncorrected	3.4		ug/L	P351115	
2018776	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6		MPN/100 mL	P350744	
2018777	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P350805	
	SOP-PCR-1.4	BacR-qPCR**	1.06E+05		TSC/100 mL	P350805	LCS, MS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: UNNAMED BRANCH @ HARDAWAY RD 2 **Collection Date/Time: 08/21/2018 12:15**

Field ID: G2TLHR0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2018772	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.0		ug/L	P351115	
		Phaeophytin-a	10		ug/L	P351115	
		Chlorophyll-a, Uncorrected	13		ug/L	P351115	
2018775	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	J	MPN/100 mL	P350744	

Ref. Method and Comment:

SM 9223 Quanti-Tray: Laboratory duplicate result is 2419.6 J - all Quanti-Tray wells were positive. Precision data is unavailable due to the high amount of analyte in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P351115

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.62	U	ug/L
Chlorophyll-a, Uncorrected	0.45	U	ug/L
Phaeophytin-a	0.45	U	ug/L

Reference Method: SM 9223 Quanti-Tray

Batch ID: P350744

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
 Batch ID: P350805

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

Reference Method: SOP-PCR-1.4
 Batch ID: P350805

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: P351115

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.3		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P350805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	104	83.9	P/P	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P350805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	82.3	216	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P350805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015784	HF183-qPCR	99.7		P	50 - 175
2015786	HF183-qPCR	94.6		P	50 - 175
2017669	HF183-qPCR	114		P	50 - 175
2018777	HF183-qPCR	84.3		P	50 - 175
2020672	HF183-qPCR	90.5		P	50 - 175
2020673	HF183-qPCR	96.2	105	P/P	50 - 175
2020674	HF183-qPCR	97.4		P	50 - 175
2020675	HF183-qPCR	89.6		P	50 - 175
2020676	HF183-qPCR	79.0		P	50 - 175
2020677	HF183-qPCR	109		P	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P350805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P350805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2015786	BacR-qPCR	72.5		P	50 - 175
2017669	BacR-qPCR	85.4		P	50 - 175
2018777	BacR-qPCR	57.1		P	50 - 175
2020672	BacR-qPCR	57.7		P	50 - 175
2020673	BacR-qPCR	127	99.3	P/P	50 - 175
2020674	BacR-qPCR	78.3		P	50 - 175
2020675	BacR-qPCR	75.2		P	50 - 175
2020676	BacR-qPCR	105		P	50 - 175
2020677	BacR-qPCR	48.9		F	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P351115

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018630	Chlorophyll-a, Corrected	0.943	Sample	P	0 - 25
2018630	Chlorophyll-a, Uncorrected	0.645	Sample	P	0 - 25
2018630	Phaeophytin-a	3.49	Sample	P	0 - 25

Reference Method: SM 9223 Quanti-Tray
Batch ID: P350744

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2018349	Escherichia Coli-Quanti-Tray	23.8	Sample	P	0 - 80
2018414	Escherichia Coli-Quanti-Tray	24.8	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P350805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020673	HF183-qPCR	8.33	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P350805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020673	BacR-qPCR	24.8	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

Quality Assurance Report Surrogates

Lab Sample ID: 2018777
Field Sample ID: G2TLHR0015

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	56.9	P	50 - 300
SOP-PCR-1.0	SKETA-qPCR	114	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	50.7	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	87.3						0.943	
	Chlorophyll-a, Uncorrected							0.645	
	Phaeophytin-a							3.49	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray							23.8 24.8	
SOP-PCR-1.0	HF183-qPCR	83.9	104	99.7	94.6	84.3			8.33
SOP-PCR-1.4	BacR-qPCR	216 82.3		90.5					
				48.9 85.4 72.5					
				57.1					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2018772, 2018773, 2018774
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2018775, 2018776
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2018777
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2018777
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2018777

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	08/21/2018	08/21/2018 16:35	Mariam Hanna	08/31/2018 11:30	Carina A. Tull	2018772, 2018773, 2018774
SM 9223 Quanti-Tray	08/21/2018	08/21/2018 16:40	Peterson Janvier	08/22/2018 11:20	Peterson Janvier	2018775, 2018776
SOP-PCR-1.0	08/21/2018	08/21/2018 15:15	Sarah Menz	08/31/2018 09:08	Mailin Lopez	2018777
SOP-PCR-1.4	08/21/2018	08/21/2018 15:15	Sarah Menz	08/31/2018 13:44	Mailin Lopez	2018777
SOP-PCR-4.0	08/21/2018	08/21/2018 15:15	Angela Smith	08/28/2018 11:11	Sarah Menz	2018777