

Biological Analysis Report

WAS-SECT-2018-09-26-01

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

Event Description: **Big Branch, Stafford, Coon, Stone Mill, Monkey B.**

Request ID: **RQ-2018-09-17-15**

Customer: **WAS-SECT**

Project ID: **SMP**

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Date Certified: 09-NOV-2018 18:14



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: Big Branch Downstream of Road 5

Collection Date/Time: 09/26/2018 10:20

Field ID: G2WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028625	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	U	ug/L	P353041	RPD
		Phaeophytin-a	1.2	U	ug/L	P353041	
		Chlorophyll-a, Uncorrected	0.80	U	ug/L	P353041	RPD
2028628	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	365.4		MPN/100 mL	P352477	

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: Stone Mill Creek Upstream of Dianna St

Collection Date/Time: 09/26/2018 11:00

Field ID: G2WA0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028627	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.0	U	ug/L	P353041	RPD
		Phaeophytin-a	1.1	U	ug/L	P353041	
		Chlorophyll-a, Uncorrected	0.78	I	ug/L	P353041	RPD
2028631	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	313.0		MPN/100 mL	P352477	

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: Coon Creek 100 meters upstream of CR 69

Collection Date/Time: 09/26/2018 12:20

Field ID: G2WA0005

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028630	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	101.4		MPN/100 mL	P352477	

Sample Location: Stafford Creek 100 meters upstream of SR 69

Collection Date/Time: 09/26/2018 12:35

Field ID: G2WA0004

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2028626	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.69	U	ug/L	P353041	RPD
		Phaeophytin-a	0.75	U	ug/L	P353041	
		Chlorophyll-a, Uncorrected	0.52	I	ug/L	P353041	RPD
2028629	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	235.9		MPN/100 mL	P352477	
2028632	SOP-PCR-1.0	HF183-qPCR**	190	U	GEU/100 mL	P352017	
	SOP-PCR-1.4	BacR-qPCR**	7.4E+04		TSC/100 mL	P352017	LCS

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: P353041

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P353041

Component	Result	Code	Units
Phaeophytin-a	0.60	U	ug/L

Reference Method: SM 9223 Quanti-Tray
Batch ID: P352477

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

Reference Method: SOP-PCR-1.0
Batch ID: P352017

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

Reference Method: SOP-PCR-1.4
Batch ID: P352017

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: P353041

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	99.1		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	99.4	142	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P352017

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	102	183	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021158	HF183-qPCR	71.6		P	50 - 175
2022579	HF183-qPCR	91.2		P	50 - 175
2022581	HF183-qPCR	79.4		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022582	HF183-qPCR	78.8		P	50 - 175
2025922	HF183-qPCR	81.0		P	50 - 175
2025923	HF183-qPCR	84.3		P	50 - 175
2025924	HF183-qPCR	85.0		P	50 - 175
2026790	HF183-qPCR	81.1		P	50 - 175
2026791	HF183-qPCR	89.3		P	50 - 175
2026792	HF183-qPCR	82.8	88.6	P/P	50 - 175
2026793	HF183-qPCR	89.1		P	50 - 175
2026794	HF183-qPCR	92.8		P	50 - 175
2028632	HF183-qPCR	54.1		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P352017

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021158	BacR-qPCR	82.8		P	50 - 175
2022579	BacR-qPCR	88.3		P	50 - 175
2022582	BacR-qPCR	81.2		P	50 - 175
2025922	BacR-qPCR	96.1		P	50 - 175
2025923	BacR-qPCR	74.7		P	50 - 175
2025924	BacR-qPCR	64.7		P	50 - 175
2026790	BacR-qPCR	82.6		P	50 - 175
2026791	BacR-qPCR	88.9		P	50 - 175
2026792	BacR-qPCR	92.3	90.5	P/P	50 - 175
2026793	BacR-qPCR	96.4		P	50 - 175
2026794	BacR-qPCR	104		P	50 - 175
2028632	BacR-qPCR	67.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P353041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028573	Chlorophyll-a, Corrected	38.9	Sample	F	0 - 25
2028573	Chlorophyll-a, Uncorrected	39.8	Sample	F	0 - 25

Reference Method: SM 9223 Quanti-Tray
Batch ID: P352477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028658	Escherichia Coli-Quanti-Tray	11.0	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
 Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	HF183-qPCR	6.74	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P352017

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	BacR-qPCR	2.02	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: 2028632
 Field Sample ID: G2WA0004

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.1	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	67.0	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	99.1						38.9	
	Chlorophyll-a, Uncorrected							39.8	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray							11.0	
SOP-PCR-1.0	HF183-qPCR	142	99.4	81.1	89.3	82.8			6.74
				88.6					
SOP-PCR-1.4	BacR-qPCR	183	102	82.6	88.9	92.3			2.02
				90.5					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2028625, 2028626, 2028627
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2028628, 2028629, 2028630, 2028631
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2028632
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2028632

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	09/26/2018	09/27/2018 08:18	Mariam Hanna	10/08/2018 13:00	Peterson Janvier	2028625, 2028626, 2028627
SM 9223 Quanti-Tray	09/26/2018	09/26/2018 17:15	Edwin Gonzalez-Soto	09/27/2018 13:30	Edwin Gonzalez-Soto	2028628, 2028629, 2028630, 2028631
SOP-PCR-1.0	09/26/2018	09/26/2018 15:50	Angela Smith	09/27/2018 13:57	Mailin Lopez	2028632
SOP-PCR-1.4	09/26/2018	09/26/2018 15:50	Angela Smith	09/28/2018 09:46	Mailin Lopez	2028632