

Biological Analysis Report

SW-DIST-2019-03-12-02

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Tampa
9610 Princess Palm Avenue
Tampa, Florida 33619
DOH Accreditation E84589

Event Description: **SMP: Baker, Bellow Outlet, New River**
Request ID: **RQ-2019-03-11-08**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

For additional information please contact
Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 10-APR-2019 14:07



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: BELLOWS LAKE OUTLET

Collection Date/Time: 03/11/2019 11:45

Field ID: G1SW0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068988	SM 10200 H (mod.)	Chlorophyll-a, Corrected	140		ug/L	P361043	
		Phaeophytin-a	19		ug/L	P361043	
		Chlorophyll-a, Uncorrected	160		ug/L	P361043	
2068996	SOP-PCR-1.0	HF183-purified-qPCR**	2.18E+04	AJ	GEU/100 mL	P360503	LCS, SUR
2069000	EPA 1603	Escherichia coli-Membrane Filter**	7900		cfu/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.

SOP-PCR-1.0: Quality control failure(s) observed. See QA report for details.

Sample Location: NEW RIVER @ MORRIS BRIDGE RD

Collection Date/Time: 03/11/2019 09:30

Field ID: G2SW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068987	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.6	U	ug/L	P361043	
		Phaeophytin-a	1.8	U	ug/L	P361043	
		Chlorophyll-a, Uncorrected	1.2	U	ug/L	P361043	
2068995	SOP-PCR-1.0	HF183-qPCR**	270	I	GEU/100 mL	P360366	
	SOP-PCR-1.4	BacR-qPCR**	1.82E+05		TSC/100 mL	P359951	
2068999	EPA 1603	Escherichia coli-Membrane Filter**	400		cfu/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.

SOP-PCR-1.0: Precision data unavailable for Analysis Batch A90008

Sample Location: BAKER CREEK @ THONOTOSASSA RD

Collection Date/Time: 03/11/2019 10:50

Field ID: G2SW0012

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068984	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.2	A	ug/L	P361043	
		Phaeophytin-a	2.2	I	ug/L	P361043	
		Chlorophyll-a, Uncorrected	9.8	A	ug/L	P361043	
2068997	EPA 1603	Escherichia coli-Membrane Filter**	152		cfu/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 2.2 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: BAKER CREEK @ THONOTOSASSA RD

Collection Date/Time: 03/11/2019 10:55

Field ID: G2SW0012_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068985	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.5		ug/L	P361043	
		Phaeophytin-a	2.5	I	ug/L	P361043	
		Chlorophyll-a, Uncorrected	11		ug/L	P361043	
2068998	EPA 1603	Escherichia coli-Membrane Filter**	156		cfu/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: FIELD

Collection Date/Time: 03/11/2019 14:00

Field ID: FB 03112019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068986	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P361043	
		Phaeophytin-a	0.90	U	ug/L	P361043	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P361043	

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: P361043

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: P360366

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

Reference Method: SOP-PCR-1.0
Batch ID: P360503

Component	Result	Code	Units
HF183-purified-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P359951

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: P361043

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.7		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P360366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	137	117	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P360503

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

Reference Method: SOP-PCR-1.0
Batch ID: P360503

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	110	15.9	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P359951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	91.6	89.5	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P360366

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068995	HF183-qPCR	110		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P360503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068996	HF183-purified-qPCR	98.6	91.0	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P359951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2061146	BacR-qPCR	84.2		P	50 - 175
2062106	BacR-qPCR	69.1		P	50 - 175
2066184	BacR-qPCR	70.7		P	50 - 175
2067629	BacR-qPCR	71.9	72.7	P/P	50 - 175
2067943	BacR-qPCR	71.4		P	50 - 175
2068995	BacR-qPCR	77.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P361043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068984	Chlorophyll-a, Corrected	1.76	Sample	P	0 - 25
2068984	Chlorophyll-a, Uncorrected	1.54	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P360503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068996	HF183-purified-qPCR	6.43	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.4
Batch ID: P359951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067629	BacR-qPCR	1.12	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: 2068995
Field Sample ID: G2SW0061

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	88.8	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	138	P	50 - 300

Lab Sample ID: 2068996
Field Sample ID: G1SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	7.93	F	30 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	98.7						1.76	
	Chlorophyll-a, Uncorrected							1.54	
SOP-PCR-1.0	HF183-purified-qPCR	15.9	110	98.6	91.0				6.43
	HF183-qPCR	117	137	110					
SOP-PCR-1.4	BacR-qPCR	89.5	91.6	69.1	71.9	72.7			1.12
				71.4					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E84589	Escherichia coli by membrane filter	2068997, 2068998, 2068999, 2069000
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2068984, 2068985, 2068986, 2068987, 2068988
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2068995
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2068996
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2068995

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	03/11/2019	03/11/2019 15:30		03/12/2019 13:38	AEL - Tampa	2068997, 2068998, 2068999, 2069000
SM 10200 H (mod.)	03/12/2019	03/12/2019 14:25	Edwin Gonzalez-Soto	03/25/2019 13:30	Peterson Janvier	2068984, 2068985, 2068986, 2068987, 2068988
SOP-PCR-1.0	03/12/2019	03/12/2019 14:00	Angela Smith	03/27/2019 10:42	Mailin Lopez	2068996
	03/12/2019	03/12/2019 14:00	Mailin Lopez	03/14/2019 10:13	Mailin Lopez	2068995
SOP-PCR-1.4	03/12/2019	03/12/2019 14:00	Sarah Menz	03/14/2019 09:09	Mailin Lopez	2068995