

Biological Analysis Report

NE-DIST-2019-12-04-01

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 - Gainesville
6815 SW Archer Road
Gainesville, Florida 32608
DOH Accreditation E82001

Event Description: **Suwannee North**
Request ID: **RQ-2019-12-02-24**
Customer: **NE-DIST**
Project ID: **SMP**

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8800 Baymeadows Way West
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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 26-DEC-2019 15:50



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: LITTLE CREEK AT US 441

Collection Date/Time: 12/03/2019 10:15

Field ID: 21010033

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140253	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.69	U	ug/L	P376341	
		Phaeophytin-a	0.75	U	ug/L	P376341	
		Chlorophyll-a, Uncorrected	0.50	U	ug/L	P376341	
2140255	EPA 1603	Escherichia coli-Membrane Filter	116		cfu/100 mL		
2140256	SOP-PCR-1.0	HF183-qPCR**	240	I	GEU/100 mL	P375116	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P375116	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P375116	LCS

Sample Location: LAKE KANAPAHA-300M N OF 56TH

Collection Date/Time: 12/03/2019 12:35

Field ID: 20030925

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140254	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.3	I	ug/L	P376341	
		Phaeophytin-a	0.68	U	ug/L	P376341	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P376341	

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P376341

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.62	U	ug/L
Chlorophyll-a, Uncorrected	0.45	U	ug/L
Phaeophytin-a	0.68	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P375116

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

Reference Method: SOP-PCR-1.4
Batch ID: P375116

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

Reference Method: SOP-PCR-1.5
Batch ID: P375116

Component	Result	Code	Units
DG3-qPCR	2.6E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P376341

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	93.4		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P375116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	121	96.8	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P375116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	114	150	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P375116

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	109	482	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P375116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140043	HF183-qPCR	94.1	89.6	P/P	50 - 175
2140112	HF183-qPCR	116		P	50 - 175
2140186	HF183-qPCR	114		P	50 - 175
2140207	HF183-qPCR	109		P	50 - 175
2140208	HF183-qPCR	124		P	50 - 175
2140256	HF183-qPCR	114		P	50 - 175
2140327	HF183-qPCR	116		P	50 - 175
2140328	HF183-qPCR	107		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P375116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140043	BacR-qPCR	88.4	90.9	P/P	50 - 175
2140112	BacR-qPCR	92.3		P	50 - 175
2140121	BacR-qPCR	81.8		P	50 - 175
2140122	BacR-qPCR	70.7		P	50 - 175
2140123	BacR-qPCR	134		P	50 - 175
2140124	BacR-qPCR	69.8		P	50 - 175
2140125	BacR-qPCR	83.8		P	50 - 175
2140186	BacR-qPCR	95.5		P	50 - 175
2140207	BacR-qPCR	93.4		P	50 - 175
2140208	BacR-qPCR	86.5		P	50 - 175
2140256	BacR-qPCR	87.1		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P375116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140043	DG3-qPCR	104	104	P/P	50 - 175
2140112	DG3-qPCR	98.8		P	50 - 175
2140121	DG3-qPCR	90.2		P	50 - 175
2140122	DG3-qPCR	88.3		P	50 - 175
2140123	DG3-qPCR	103		P	50 - 175
2140124	DG3-qPCR	94.3		P	50 - 175
2140125	DG3-qPCR	95.7		P	50 - 175
2140186	DG3-qPCR	101		P	50 - 175
2140207	DG3-qPCR	102		P	50 - 175
2140208	DG3-qPCR	89.5		P	50 - 175
2140256	DG3-qPCR	94.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P376341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140094	Chlorophyll-a, Corrected	5.04	Sample	P	0 - 25
2140094	Chlorophyll-a, Uncorrected	4.84	Sample	P	0 - 25
2140094	Phaeophytin-a	2.94	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P375116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140043	HF183-qPCR	4.86	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P375116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140043	BacR-qPCR	2.85	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P375116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140043	DG3-qPCR	0.141	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: 2140256
Field Sample ID: 21010033

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	94.2	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	94.9	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	101	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	93.4						5.04	
	Chlorophyll-a, Uncorrected							4.84	
	Phaeophytin-a							2.94	
SOP-PCR-1.0	HF183-qPCR	96.8	121	94.1	89.6	116			4.86
SOP-PCR-1.4	BacR-qPCR	150	114	88.4	90.9	92.3			2.85
SOP-PCR-1.5	DG3-qPCR	482	109	104	104	98.8			0.141
				90.2					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E82001	E. coli by MF by AEL in Gainesville	2140255
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2140253, 2140254
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2140256
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2140256
SOP-PCR-1.5 / E31780	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2140256

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	12/03/2019	12/03/2019 14:20		12/04/2019 14:15	AEL - Gainesville	2140255
SM 10200 H (mod.)	12/04/2019	12/04/2019 15:10	Jessica Fetgatter	12/11/2019 14:20	Peterson Janvier	2140253, 2140254
SOP-PCR-1.0	12/04/2019	12/04/2019 15:45	Angela Smith	12/16/2019 12:17	Lauren Campbell	2140256
SOP-PCR-1.4	12/04/2019	12/04/2019 15:45	Angela Smith	12/16/2019 15:30	Lauren Campbell	2140256
SOP-PCR-1.5	12/04/2019	12/04/2019 15:45	Angela Smith	12/20/2019 10:32	Lauren Campbell	2140256