

Biological Analysis Report

NE-DIST-2019-02-28-02

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

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
9143 Philips Highway, Suite 200
Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **LSJR Downtown**
Request ID: **RQ-2019-02-25-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

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 13:06



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: MCGIRTS CREEK AT OLD PLANK ROAD

Collection Date/Time: 02/27/2019 09:30

Field ID: 20030346

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066109	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.71	I	ug/L	P360119	
		Phaeophytin-a	0.60	U	ug/L	P360119	
		Chlorophyll-a, Uncorrected	0.79	I	ug/L	P360119	
2066114	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	203		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.

Sample Location: TROUT RIVER AT GARDEN ST

Collection Date/Time: 02/27/2019 10:15

Field ID: 20030751

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066110	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.70	I	ug/L	P360119	
		Phaeophytin-a	0.60	U	ug/L	P360119	
		Chlorophyll-a, Uncorrected	0.65	I	ug/L	P360119	
2066115	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	85		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.

Sample Location: TROUT RIVER AT GARDEN ST DUPLICATE

Collection Date/Time: 02/27/2019 10:20

Field ID: 20030751DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066111	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.76	I	ug/L	P360119	
		Phaeophytin-a	0.60	U	ug/L	P360119	
		Chlorophyll-a, Uncorrected	0.71	I	ug/L	P360119	
2066116	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	98		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.

Sample Location: BLOCKHOUSE 100M ABV IRMA RD.

Collection Date/Time: 02/27/2019 12:05

Field ID: G2NE1159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066108	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.95	I	ug/L	P360119	
		Phaeophytin-a	0.60	U	ug/L	P360119	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P360119	
2066113	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	135		MPN/100 mL		
2066124	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P359614	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P359614	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.

Sample Location: BLOCKHOUSE AT BROWARD RD.

Collection Date/Time: 02/27/2019 11:20

Field ID: G2NE1180

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066107	SM 10200 H (mod.)	Chlorophyll-a, Corrected	12	A	ug/L	P360119	
		Phaeophytin-a	1.4	I	ug/L	P360119	
		Chlorophyll-a, Uncorrected	13	A	ug/L	P360119	
2066112	ASTM D650399	ENTEROCOCCI-ENTEROLERT	360		MPN/100 mL		
2066123	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P359614	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P359614	LCS

Ref. Method and Comment:
SM 10200 H (mod.): Laboratory duplicate result is 1.1 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P360119

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.60	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P359614

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

Reference Method: SOP-PCR-1.4
Batch ID: P359614

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P360119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P359614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	99.1	144	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P359614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	43.2	90.8	F/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P359614

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	43.5	95.1	F/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P359614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058248	HF183-qPCR	87.8		P	50 - 175
2058249	HF183-qPCR	91.8		P	50 - 175
2060595	HF183-qPCR	84.7		P	50 - 175
2060596	HF183-qPCR	74.6		P	50 - 175
2061285	HF183-qPCR	75.4		P	50 - 175
2061793	HF183-qPCR	83.7		P	50 - 175
2062154	HF183-qPCR	87.4		P	50 - 175
2065681	HF183-qPCR	94.8		P	50 - 175
2065682	HF183-qPCR	88.6		P	50 - 175
2065683	HF183-qPCR	98.9		P	50 - 175
2065684	HF183-qPCR	94.1	94.5	P/P	50 - 175
2066123	HF183-qPCR	79.3		P	50 - 175
2066124	HF183-qPCR	83.0		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P359614

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058248	BacR-qPCR	81.5		P	50 - 175
2058249	BacR-qPCR	82.6		P	50 - 175
2060595	BacR-qPCR	71.7		P	50 - 175
2060596	BacR-qPCR	73.4		P	50 - 175
2061285	BacR-qPCR	67.2		P	50 - 175
2061793	BacR-qPCR	70.9		P	50 - 175
2062154	BacR-qPCR	77.7		P	50 - 175
2065681	BacR-qPCR	84.9		P	50 - 175
2065682	BacR-qPCR	77.6		P	50 - 175
2065683	BacR-qPCR	83.0		P	50 - 175
2065684	BacR-qPCR	90.6	92.7	P/P	50 - 175
2066123	BacR-qPCR	68.3		P	50 - 175
2066124	BacR-qPCR	78.1		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P360119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066107	Chlorophyll-a, Corrected	0.210	Sample	P	0 - 25
2066107	Chlorophyll-a, Uncorrected	1.37	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P359614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065684	HF183-qPCR	0.427	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P359614

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065684	BacR-qPCR	2.33	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: 2066123
Field Sample ID: G2NE1180

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	97.3	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	113	P	50 - 300

Lab Sample ID: 2066124
Field Sample ID: G2NE1159

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	111	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	152	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	100							0.210	
	Chlorophyll-a, Uncorrected								1.37	
SOP-PCR-1.0	HF183-qPCR	144	99.1		94.8	88.6	98.9			0.427
					94.1					
SOP-PCR-1.4	BacR-qPCR	43.2	95.1	43.5	81.5	82.6	77.7			2.33
		90.8			71.7					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D650399 / E82502	Enterococci by Enterolert Quanti-Tray Method by ALS Environmental Laboratory in Jacksonville	2066112
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2066107, 2066108, 2066109, 2066110, 2066111
SM 9223 B Quanti-Tray / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Laboratory in Jacksonville	2066113, 2066114, 2066115, 2066116

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2066123, 2066124
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2066123, 2066124

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	02/27/2019	02/27/2019 14:40		02/28/2019 14:41	ALS Environmental, Jax	2066112
SM 10200 H (mod.)	02/28/2019	02/28/2019 14:10	Jennifer Mihalic	03/07/2019 10:55	Peterson Janvier	2066107, 2066108, 2066109, 2066110, 2066111
SM 9223 B Quanti-Tray	02/27/2019	02/27/2019 14:28		02/28/2019 14:33	ALS Environmental, Jax	2066113, 2066114, 2066115, 2066116
SOP-PCR-1.0	02/28/2019	02/28/2019 16:00	Angela Smith	03/07/2019 08:59	Mailin Lopez	2066123, 2066124
SOP-PCR-1.4	02/28/2019	02/28/2019 16:00	Angela Smith	03/12/2019 11:01	Mailin Lopez	2066123, 2066124