

Biological Analysis Report

NE-DIST-2019-07-30-01

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 North Boat**
Request ID: **RQ-2019-07-29-07**
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: 28-AUG-2019 15:14



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, 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: TROUT R @ I-95 BURT MAXWELL DOCK

Collection Date/Time: 07/29/2019 11:35

Field ID: 20030121

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106875	SM 10200 H (mod.)	Chlorophyll-a, Corrected	12		ug/L	P368471	
		Phaeophytin-a	3.4	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	14		ug/L	P368471	
2106881	ASTM D650399	ENTEROCOCCI-ENTEROLERT	84		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: MONCRIEF CREEK NEAR MOUTH

Collection Date/Time: 07/29/2019 11:00

Field ID: 2003115 DUP

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106870	SM 10200 H (mod.)	Chlorophyll-a, Corrected	10		ug/L	P368471	
		Phaeophytin-a	1.9	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	11		ug/L	P368471	
2106876	ASTM D650399	ENTEROCOCCI-ENTEROLERT	95		MPN/100 mL		
2106892	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P368294	

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: MONCRIEF CREEK NEAR MOUTH

Collection Date/Time: 07/29/2019 10:55

Field ID: 20030115

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106871	SM 10200 H (mod.)	Chlorophyll-a, Corrected	10		ug/L	P368471	
		Phaeophytin-a	2.1	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	12		ug/L	P368471	
2106877	ASTM D650399	ENTEROCOCCI-ENTEROLERT	52		MPN/100 mL		
2106893	SOP-PCR-1.0	HF183-qPCR**	430	I	GEU/100 mL	P368014	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: RIBAUT RIVER AT US-1

Collection Date/Time: 07/29/2019 12:40

Field ID: 20030133

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106873	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.8		ug/L	P368471	
		Phaeophytin-a	1.6	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	9.0		ug/L	P368471	
2106879	ASTM D650399	ENTEROCOCCI-ENTEROLERT	160		MPN/100 mL		
2106895	SOP-PCR-1.0	HF183-qPCR**	960		GEU/100 mL	P368014	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P367815	

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: RIBAUT R MONCRIEF RD BR

Collection Date/Time: 07/29/2019 10:15

Field ID: 20030129

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106874	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14	A	ug/L	P368471	
		Phaeophytin-a	2.8	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	16	A	ug/L	P368471	
2106880	ASTM D650399	ENTEROCOCCI-ENTEROLERT	73		MPN/100 mL		
2106896	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold			P367815	

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 2.3 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: MONCRIEF CR LEM TURNER RD
 BR/NORWOOD AVE

Collection Date/Time: 07/29/2019 12:10

Field ID: 20030114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106872	SM 10200 H (mod.)	Chlorophyll-a, Corrected	21		ug/L	P368471	
		Phaeophytin-a	2.6	I	ug/L	P368471	
		Chlorophyll-a, Uncorrected	23		ug/L	P368471	
2106878	ASTM D650399	ENTEROCOCCI-ENTEROLERT	150		MPN/100 mL		
2106894	SOP-PCR-1.0	HF183-qPCR**	1.47E+03		GEU/100 mL	P368294	

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: P368471

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.89	U	ug/L
Chlorophyll-a, Uncorrected	0.65	U	ug/L
Phaeophytin-a	0.98	U	ug/L

Reference Method: SOP-PCR-1.0

Batch ID: P368014

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

Reference Method: SOP-PCR-1.0

Batch ID: P368294

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P368471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
-----------	---------	---------	-----------	----------------

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P368471

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	88.3		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P368014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	172	239	P/F	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P368294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	100	83.1	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P368014

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2104380	HF183-qPCR	99.9	124	P/P	50 - 175
2104381	HF183-qPCR	98.2		P	50 - 175
2105231	HF183-qPCR	102		P	50 - 175
2105232	HF183-qPCR	111		P	50 - 175
2105233	HF183-qPCR	141		P	50 - 175
2105234	HF183-qPCR	83.4		P	50 - 175
2105235	HF183-qPCR	96.6		P	50 - 175
2105370	HF183-qPCR	115		P	50 - 175
2105634	HF183-qPCR	102		P	50 - 175
2105879	HF183-qPCR	160		P	50 - 175
2106297	HF183-qPCR	142		P	50 - 175
2106893	HF183-qPCR	143		P	50 - 175
2106895	HF183-qPCR	95.1		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P368294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106892	HF183-qPCR	94.6	94.3	P/P	50 - 175
2106894	HF183-qPCR	74.8		P	50 - 175
2106990	HF183-qPCR	73.1		P	50 - 175
2106991	HF183-qPCR	61.4		P	50 - 175
2107456	HF183-qPCR	83.9		P	50 - 175
2107457	HF183-qPCR	74.5		P	50 - 175
2107458	HF183-qPCR	90.5		P	50 - 175
2107459	HF183-qPCR	89.0		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P368471

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106874	Chlorophyll-a, Corrected	1.60	Sample	P	0 - 25
2106874	Chlorophyll-a, Uncorrected	3.47	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P368014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2104380	HF183-qPCR	21.3	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P368294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106892	HF183-qPCR	0.373	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: 2106893
Field Sample ID: 20030115

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	127	P	50 - 300

Lab Sample ID: 2106894
Field Sample ID: 20030114

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300

Lab Sample ID: 2106895
Field Sample ID: 20030133

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	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	88.3						1.60	
	Chlorophyll-a, Uncorrected							3.47	
SOP-PCR-1.0	HF183-qPCR	239	172	142	160	143			21.3
				141					

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	83.1	100	83.9	74.5	90.5			0.373
				89.0					

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
ASTM D650399 / E82502	Enterococci by Enterolert/QT by ALS in Jacksonville	2106876, 2106877, 2106878, 2106879, 2106880, 2106881
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2106870, 2106871, 2106872, 2106873, 2106874, 2106875
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2106892, 2106893, 2106894, 2106895
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2106895, 2106896

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	07/29/2019	07/29/2019 14:44		07/30/2019 15:10	ALS Environmental, Jax	2106877, 2106878, 2106879, 2106880, 2106881
	07/29/2019	07/29/2019 15:15		07/30/2019 15:16	ALS Environmental, Jax	2106876
SM 10200 H (mod.)	07/30/2019	07/30/2019 14:00	Peterson Janvier	08/05/2019 12:14	Yuliya Danyuk	2106870, 2106871, 2106872, 2106873, 2106874, 2106875
SOP-PCR-1.0	07/30/2019	07/30/2019 15:30	Angela Smith	08/12/2019 10:13	Mailin Lopez	2106893, 2106895
	07/30/2019	07/30/2019 15:30	Angela Smith	08/15/2019 09:11	Mailin Lopez	2106892, 2106894
SOP-PCR-4.0	07/30/2019	07/30/2019 15:30	Angela Smith	08/06/2019 12:00	Sarah Menz	2106895, 2106896