

Biological Analysis Report

NE-DIST-2017-12-28-01

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 Bmap 2**
Request ID: **RQ-2017-12-18-10**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 09-MAR-2018 11:03



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, InvertZool, 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 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: Moncrief Crk N of 33rd St. Bridge

Collection Date/Time: 12/27/2017 10:40

Field ID: G2NE0323

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956262	SM 10200 H (mod.)	Chlorophyll-a, Corrected	25		ug/L	P338028	
		Phaeophytin-a	8.2		ug/L	P338028	
		Chlorophyll-a, Uncorrected	31		ug/L	P338028	
1956282	SM 9223 B	Escherichia Coli-Quanti-Tray**	20		MPN/100 mL		
1956287	SOP-PCR-1.0	HF183-qPCR**	80	T	GEU/100 mL	P337556	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

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 @ Dinsmore Boat Ramp

Collection Date/Time: 12/27/2017 09:15

Field ID: G2NE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956261	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.7		ug/L	P338028	
		Phaeophytin-a	0.53	I	ug/L	P338028	
		Chlorophyll-a, Uncorrected	7.3		ug/L	P338028	
1956281	ASTM D6503-99	ENTEROCOCCI-ENTEROLERT	240		MPN/100 mL		
1956286	SOP-PCR-1.0	HF183-qPCR**	36	T	GEU/100 mL	P337556	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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 @ Old Kings Rd.

Collection Date/Time: 12/27/2017 09:50

Field ID: G2NE0761

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956280	SM 9223 B	Escherichia Coli-Quanti-Tray**	181		MPN/100 mL		
1956285	SOP-PCR-1.0	HF183-qPCR**	42	T	GEU/100 mL	P336939	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: NW Trib. to Open Danforth

Collection Date/Time: 12/27/2017 10:40

Field ID: G2NE095812272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956259	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.62	U	ug/L	P338028	
		Phaeophytin-a	0.45	U	ug/L	P338028	
		Chlorophyll-a, Uncorrected	0.67	I	ug/L	P338028	
1956278	SM 9223 B	Escherichia Coli-Quanti-Tray**	435		MPN/100 mL		
1956283	SOP-PCR-1.0	HF183-qPCR**	0.88	T	GEU/100 mL	P336939	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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: NW Trib. to Open Danforth

Collection Date/Time: 12/27/2017 10:40

Field ID: G2NE095812272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956263	SOP-IZ06	Stream Condition Index (SCI)**	49	A	Points		
		Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2**	19		# Taxa		

Sample Location: Terrapin at Faye

Collection Date/Time: 12/27/2017 09:40

Field ID: G2NE066012272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1956260	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8	I	ug/L	P338028	
		Phaeophytin-a	1.3	I	ug/L	P338028	
		Chlorophyll-a, Uncorrected	2.7		ug/L	P338028	
1956279	SM 9223 B	Escherichia Coli-Quanti-Tray**	1210		MPN/100 mL		
1956284	SOP-PCR-1.0	HF183-qPCR**	190	T	GEU/100 mL	P336939	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

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: P338028

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

Reference Method: SOP-PCR-1.0
 Batch ID: P336939

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

Reference Method: SOP-PCR-1.0
 Batch ID: P337556

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P338028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.1		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P336939

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	141	104	P/P	50 - 175
HF183-qPCR	164	127	P/P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P337556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	91.2	123	P/P	50 - 175
HF183-qPCR	116	104	P/P	50 - 175
HF183-qPCR	73.9	104	P/P	50 - 175
HF183-qPCR	115	123	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P336939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1954866	HF183-qPCR	97.7	106	P	50 - 175
1954892	HF183-qPCR	96.3		P	50 - 175
1954999	HF183-qPCR	95.2		P	50 - 175
1955000	HF183-qPCR	110		P/P	50 - 175
1955001	HF183-qPCR	108		P	50 - 175
1955239	HF183-qPCR	93.9		P	50 - 175
1955240	HF183-qPCR	78.6		P	50 - 175
1955241	HF183-qPCR	90.6		P	50 - 175
1955266	HF183-qPCR	86.9		P	50 - 175
1956283	HF183-qPCR	85.9		P	50 - 175
1956284	HF183-qPCR	80.4		P	50 - 175
1956285	HF183-qPCR	80.8		P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P337556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1945751	HF183-qPCR	77.3	68.7	P	50 - 175
1949228	HF183-qPCR	75.3		P	50 - 175
1949274	HF183-qPCR	82.8		P	50 - 175
1950149	HF183-qPCR	92.3		P	50 - 175
1950854	HF183-qPCR	84.6		P	50 - 175
1950855	HF183-qPCR	84.7		P	50 - 175
1950863	HF183-qPCR	91.7		P	50 - 175
1956286	HF183-qPCR	88.6		P	50 - 175
1956287	HF183-qPCR	74.7		P/P	50 - 175
1957454	HF183-qPCR	90.9		P	50 - 175
1957455	HF183-qPCR	82.8		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P338028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956149	Chlorophyll-a, Uncorrected	15.0	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P336939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955000	HF183-qPCR	3.09	Spike	P	0 - 25
1958501	HF183-qPCR	3.82	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P337556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1956287	HF183-qPCR	8.36	Spike	P	0 - 25
1956287	HF183-qPCR	8.36	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: 1956283
Field Sample ID: G2NE095812272017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	106	P	50 - 300

Lab Sample ID: 1956284
Field Sample ID: G2NE066012272017

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

Lab Sample ID: 1956285
Field Sample ID: G2NE0761

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	114	P	50 - 300

Lab Sample ID: 1956286
Field Sample ID: G2NE0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1956287
 Field Sample ID: G2NE0323

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	100	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	95.1								
	Chlorophyll-a, Uncorrected								15.0	
SOP-PCR-1.0	HF183-qPCR	141	127	164	78.6	97.7	96.3			3.82 3.09
		104				95.2				
	HF183-qPCR	91.2	123	116	82.8	91.7	77.3			8.36 8.36
		123				88.6				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
ASTM D6503-99 / E82502	Enterococci by MPN by ALS Environmental Overflow Laboratory for NED	1956281
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1956259, 1956260, 1956261, 1956262
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1956278, 1956279, 1956280, 1956282
SOP-IZ06 / E31780	No. Taxa of FW macroinverts, qual samp, 20 dipnets.	1956263
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1956283, 1956284, 1956285, 1956286, 1956287
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1956283, 1956284, 1956285, 1956286, 1956287

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D6503-99	12/27/2017	12/27/2017 15:44		12/28/2017 17:17	ALS Environmental, Jax	1956281
SM 10200 H (mod.)	12/28/2017	12/28/2017 11:00	Cathy Sherrer	01/09/2018	Jennifer Mihalic	1956259, 1956260, 1956261, 1956262
SM 9223 B	12/27/2017	12/27/2017 15:30		12/28/2017 17:23	ALS Environmental, Jax	1956278, 1956279, 1956280, 1956282
SOP-IZ06	12/28/2017	02/13/2018	Mariam Hanna	03/08/2018	Lisa Homann	1956263
SOP-PCR-1.0	12/28/2017	12/28/2017 12:30	Avril Wood	01/09/2018	Sarah Menz	1956283, 1956284, 1956285
	12/28/2017	12/28/2017 12:30	Puja Jasrotia	01/09/2018	Sarah Menz	1956286, 1956287
SOP-PCR-4.0	12/28/2017	12/28/2017 12:30	Sarah Menz	01/22/2018	Puja Jasrotia	1956283, 1956284, 1956285, 1956286, 1956287