

Biological Analysis Report

NE-DIST-2017-09-27-01

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 Nutrients**
Request ID: **RQ-2017-09-25-41**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
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: 11-JUN-2018 16:12



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 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: Strawberry Creek @ Lone Star Rd.

Collection Date/Time: 09/26/2017 10:40

Field ID: G2NE0762 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931762	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.6		ug/L	P332641	
		Phaeophytin-a	0.77	I	ug/L	P332641	
		Chlorophyll-a, Uncorrected	4.2		ug/L	P332641	
1931767	SM 9223 B	Escherichia Coli-Quanti-Tray**	617		MPN/100 mL		
1931768	SOP-PCR-1.0	HF183-qPCR**	21	T	GEU/100 mL	P333912	
	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: Terrapin at Faye Rd.

Collection Date/Time: 09/26/2017 11:45

Field ID: G2NE0660 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931757	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.5		ug/L	P332641	
		Phaeophytin-a	0.80	U	ug/L	P332641	
		Chlorophyll-a, Uncorrected	5.7		ug/L	P332641	

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: Terrapin at Faye Rd.

Collection Date/Time: 09/26/2017 11:45

Field ID: G2NE0660 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931763	SM 9223 B	Escherichia Coli-Quanti-Tray**	262		MPN/100 mL		

Sample Location: Puncheon Br. @ Gate PKWY N

Collection Date/Time: 09/26/2017 08:45

Field ID: G2NE0875 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931758	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P332641	
		Phaeophytin-a	0.58	I	ug/L	P332641	
		Chlorophyll-a, Uncorrected	1.8		ug/L	P332641	

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 Cr. @ Hodges Blvd

Collection Date/Time: 09/26/2017 09:55

Field ID: G2NE0856 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931759	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.6		ug/L	P332641	
		Phaeophytin-a	2.3		ug/L	P332641	
		Chlorophyll-a, Uncorrected	6.2		ug/L	P332641	

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 Cr. @ Hodges Blvd

Collection Date/Time: 09/26/2017 09:55

Field ID: G2NE0856 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931764	SM 9223 B	Escherichia Coli-Quanti-Tray**	85		MPN/100 mL		

Sample Location: Greenfield Creek @ Atlantic Blvd.

Collection Date/Time: 09/26/2017 10:10

Field ID: G2NE0664 9262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931760	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.3		ug/L	P332641	
		Phaeophytin-a	1.3		ug/L	P332641	
		Chlorophyll-a, Uncorrected	4.2		ug/L	P332641	

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: Greenfield Creek @ Atlantic Blvd.

Collection Date/Time: 09/26/2017 10:10

Field ID: G2NE0664 9262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931765	SM 9223 B	Escherichia Coli-Quanti-Tray**	41		MPN/100 mL		

Sample Location: Newcastle Creek @ Ft. Caroline Rd.

Collection Date/Time: 09/26/2017 11:15

Field ID: G2NE0880 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931761	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.92	I	ug/L	P332641	
		Phaeophytin-a	0.40	U	ug/L	P332641	
		Chlorophyll-a, Uncorrected	0.94	I	ug/L	P332641	

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: Newcastle Creek @ Ft. Caroline Rd.

Collection Date/Time: 09/26/2017 11:15

Field ID: G2NE0880 09262017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1931766	SM 9223 B	Escherichia Coli-Quanti-Tray**	1620		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P332641

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: P333912

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P333912

Component	Result	Code	Units
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: P332641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	104		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P333912

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	95.3	109	P/P	50 - 175
HF183-qPCR	88.1	126	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P333912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1931526	HF183-qPCR	105		P	50 - 175
1931768	HF183-qPCR	79.9		P	50 - 175
1935004	HF183-qPCR	96.1		P	50 - 175
1935006	HF183-qPCR	90.3		P	50 - 175
1935007	HF183-qPCR	90.1		P	50 - 175
1939413	HF183-qPCR	113		P	50 - 175
1939414	HF183-qPCR	89.5		P	50 - 175
1939415	HF183-qPCR	88.0	108	P/P	50 - 175
1939416	HF183-qPCR	88.7		P	50 - 175
1939685	HF183-qPCR	95.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P332641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1931834	Chlorophyll-a, Corrected	3.28	Sample	P	0 - 25
1931834	Chlorophyll-a, Uncorrected	1.93	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
 Batch ID: P333912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939415	HF183-qPCR	20.5	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: 1931768
 Field Sample ID: G2NE0762 09262017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	77.5	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	104							3.28	
	Chlorophyll-a, Uncorrected								1.93	
SOP-PCR-1.0	HF183-qPCR	95.3	126	88.1	96.1	90.3	105			20.5
		109			79.9					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1931757, 1931758, 1931759, 1931760, 1931761, 1931762
SM 9223 B / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Overflow Laboratory for Northeast District	1931763, 1931764, 1931765, 1931766, 1931767
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1931768
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1931768

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	09/27/2017	09/27/2017 12:40	Elizabeth Lovern	10/02/2017 13:50	Kim M. Spencer	1931757, 1931758, 1931759, 1931760, 1931761, 1931762
SM 9223 B	09/26/2017	09/26/2017 15:15		09/27/2017 16:32	ALS Environmental, Jax	1931763, 1931764, 1931765, 1931766, 1931767
SOP-PCR-1.0	09/27/2017	09/27/2017 13:30	Puja Jasrotia	10/27/2017 09:24	Sarah Menz	1931768
SOP-PCR-4.0	09/27/2017	09/27/2017 13:30	Avril Wood	10/24/2017 11:25	Puja Jasrotia	1931768