

Biological Analysis Report

NE-DIST-2023-04-26-01

Florida DEP Laboratory
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Overflow Analyses Performed By:
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DOH Accreditation E821059

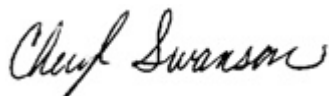
Event Description: **SCI Long Branch**
Request ID: **RQ-2023-04-17-40**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 09-JUN-2023 13:38



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: Long Beach @ SR 135

Collection Date/Time: 04/25/2023 10:30

Field ID: 21010023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403154	SM 10150 B	Chlorophyll-a, Corrected	5.5		ug/L	P429550	
		Phaeophytin-a	0.90	U	ug/L	P429550	
		Chlorophyll-a, Uncorrected	6.0		ug/L	P429550	
2403155	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	J	MPN/100 mL		
2403156	SOP-PCR-1.0	HF183-qPCR**	6.6E+03	U	TSC/100 mL	P428991	
	SOP-PCR-1.2	GULL2-qPCR**	7.2E+03	UJ	TSC/100 mL	P428991	MS
	SOP-PCR-1.3	GFD-qPCR**	1.4E+03	U	TSC/100 mL	P428991	
	SOP-PCR-1.4	BacR-qPCR**	6.1E+03	U	TSC/100 mL	P428991	
	SOP-PCR-1.5	DG3-qPCR**	5.1E+03	U	TSC/100 mL	P428991	

Ref. Method and Comment:

SM 10150 B: 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.

SM 9223 B Quanti-Tray: All Quanti-Tray wells were positive. Result may be higher than reported. All Quanti-Tray wells were positive in the Laboratory Duplicate. Laboratory Duplicate result is also greater than 2419.6 MPN/100mL.

SOP-PCR-1.2: Precision data unavailable due to inhibition in QC sample. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: SM 10150 B

Batch ID: P429550

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SOP-PCR-1.0

Batch ID: P428991

Component	Result	Code	Units
HF183-qPCR	3.3E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.2

Batch ID: P428991

Component	Result	Code	Units
GULL2-qPCR	3.6E+03	U	TSC/100 mL

Reference Method: SOP-PCR-1.3

Batch ID: P428991

Component	Result	Code	Units
GFD-qPCR	720	U	TSC/100 mL

Reference Method: SOP-PCR-1.4

Batch ID: P428991

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

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.5
Batch ID: P428991

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10150 B
Batch ID: P429550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	90.6		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P428991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	101	85.5	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P428991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	104	92.5	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P428991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	99.3	88.8	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P428991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	100	94.3	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P428991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	102	92.2	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403156	HF183-qPCR	80.6	85.7	P/P	50 - 175
2403487	HF183-qPCR	73.4		P	50 - 175
2403488	HF183-qPCR	83.3		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403489	HF183-qPCR	91.0		P	50 - 175
2403490	HF183-qPCR	84.8		P	50 - 175
2403670	HF183-qPCR	87.6		P	50 - 175
2403879	HF183-qPCR	85.4		P	50 - 175
2403880	HF183-qPCR	86.9		P	50 - 175
2404895	HF183-qPCR	89.0		P	50 - 175
2404896	HF183-qPCR	82.9		P	50 - 175
2405242	HF183-qPCR	99.8		P	50 - 175
2405243	HF183-qPCR	108		P	50 - 175
2405724	HF183-qPCR	90.5		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403156	GULL2-qPCR	6.34	9.07	F/F	50 - 300
2403489	GULL2-qPCR	71.6		P	50 - 300
2403490	GULL2-qPCR	82.0		P	50 - 300
2403670	GULL2-qPCR	74.6		P	50 - 300
2403879	GULL2-qPCR	91.3		P	50 - 300
2403880	GULL2-qPCR	88.4		P	50 - 300
2404895	GULL2-qPCR	84.4		P	50 - 300
2404896	GULL2-qPCR	82.5		P	50 - 300
2405724	GULL2-qPCR	72.5		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403156	GFD-qPCR	82.9	86.4	P/P	50 - 175
2403489	GFD-qPCR	87.1		P	50 - 175
2403490	GFD-qPCR	87.5		P	50 - 175
2403670	GFD-qPCR	91.2		P	50 - 175
2403879	GFD-qPCR	92.7		P	50 - 175
2403880	GFD-qPCR	96.1		P	50 - 175
2404895	GFD-qPCR	94.4		P	50 - 175
2404896	GFD-qPCR	94.1		P	50 - 175
2405724	GFD-qPCR	89.2		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403156	BacR-qPCR	52.5	53.7	P/P	50 - 175
2403487	BacR-qPCR	83.2		P	50 - 175
2403488	BacR-qPCR	76.3		P	50 - 175
2403489	BacR-qPCR	59.8		P	50 - 175
2403490	BacR-qPCR	72.0		P	50 - 175
2403670	BacR-qPCR	77.8		P	50 - 175
2403879	BacR-qPCR	86.2		P	50 - 175
2403880	BacR-qPCR	83.5		P	50 - 175
2404895	BacR-qPCR	82.4		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2404896	BacR-qPCR	75.4		P	50 - 175
2405242	BacR-qPCR	76.3		P	50 - 175
2405243	BacR-qPCR	64.1		P	50 - 175
2405724	BacR-qPCR	66.3		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P428991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403156	DG3-qPCR	63.2	67.0	P/P	50 - 175
2403487	DG3-qPCR	79.1		P	50 - 175
2403488	DG3-qPCR	75.1		P	50 - 175
2403489	DG3-qPCR	83.1		P	50 - 175
2403490	DG3-qPCR	82.2		P	50 - 175
2403670	DG3-qPCR	83.7		P	50 - 175
2403879	DG3-qPCR	70.0		P	50 - 175
2403880	DG3-qPCR	80.4		P	50 - 175
2404895	DG3-qPCR	91.1		P	50 - 175
2404896	DG3-qPCR	85.1		P	50 - 175
2405242	DG3-qPCR	85.1		P	50 - 175
2405243	DG3-qPCR	82.9		P	50 - 175
2405724	DG3-qPCR	86.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P428991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403156	HF183-qPCR	6.12	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P428991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403156	GFD-qPCR	4.19	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P428991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403156	BacR-qPCR	2.21	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.5
Batch ID: P428991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403156	DG3-qPCR	5.87	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2403156
Field Sample ID: 21010023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	56.3	P	50 - 300
SOP-PCR-1.0	SKETA-qPCR	55.5	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	83.2	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	83.2	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	88.3	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	92.4	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	91.3	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	96.0	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	66.2	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	63.2	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	90.6							
SOP-PCR-1.0	HF183-qPCR	85.5	101	80.6	85.7	73.4			6.12
				83.3					
SOP-PCR-1.2	GULL2-qPCR	92.5	104	6.34	9.07	71.6			
				82.0					
SOP-PCR-1.3	GFD-qPCR	88.8	99.3	82.9	86.4	87.1			4.19
				87.5					
SOP-PCR-1.4	BacR-qPCR	94.3	100	52.5	53.7	83.2			2.21
				76.3					
SOP-PCR-1.5	DG3-qPCR	92.2	102	63.2	67.0	79.1			5.87
				75.1					

Reference Method Descriptions

Method	Description	Associated Samples
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2403154
SM 9223 B Quanti-Tray	E. coli by Colilert/QT by Diversified Environmental Laboratories in Jacksonville	2403155
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2403156
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2403156

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2403156
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2403156
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2403156

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10150 B	04/26/2023	04/26/2023 14:16	Tynan A Branch	05/04/2023 15:36	Callie Williams	2403154
SM 9223 B Quanti-Tray	04/25/2023	04/25/2023 14:59		04/26/2023 09:59	Diversified-Jacksonville	2403155
SOP-PCR-1.0	04/26/2023	04/26/2023 11:25	Claudia Castro	05/18/2023 10:11	Roberta Tatti	2403156
SOP-PCR-1.2	04/26/2023	04/26/2023 11:25	Claudia Castro	05/23/2023 17:20	Jennifer Mihalic	2403156
SOP-PCR-1.3	04/26/2023	04/26/2023 11:25	Claudia Castro	05/22/2023 14:42	Jennifer Mihalic	2403156
SOP-PCR-1.4	04/26/2023	04/26/2023 11:25	Claudia Castro	05/19/2023 12:16	Roberta Tatti	2403156
SOP-PCR-1.5	04/26/2023	04/26/2023 11:25	Claudia Castro	05/19/2023 13:51	Roberta Tatti	2403156