

Biological Analysis Report

SO-DIST-2024-04-25-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Overflow Analyses Performed By:
Benchmark EnviroAnalytical, Inc. - North Port
1001 Corporate Avenue, Suite 102
North Port, FL 34289
DOH Accreditation E85086

Event Description: **2024 SMP : P Riv**
Request ID: **RQ-2024-03-25-16**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
Cheryl Swanson - Administrator
Sarah Menz, Ph.D. - Bench Biology & Aquatic
Toxicity
Puja Jasrotia, Ph.D. - Molecular Biology & Taxonomy
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Sarah Menz, Environmental Administrator

Date Certified: 06-JUN-2024 15:00



NON-CONFORMANCE REPORT INCLUDED

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: PEACE RIVER ESTUARY AT HARBOUR HEIGHTS

Collection Date/Time: 04/24/2024 11:55

Field ID: G3SD0148

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484792	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P444452	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P444452	
	SOP-PCR-1.5	DG3-qPCR**	No result	0	TSC/100 mL	P444452	
2484807	Enterolert/QT	Enterococci-Quanti-Tray	10		MPN/100 mL		

Ref. Method and Comment:
SOP-PCR-1.5: See non-conformance report # 10478

Sample Location: PEACE RIVER NEAR HUNTER CRK

Collection Date/Time: 04/24/2024 12:35

Field ID: G3SD0241

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484791	SM 10150 B	Chlorophyll-a, Corrected	8.9		ug/L	P444935	
		Phaeophytin-a	2.7	I	ug/L	P444935	
		Chlorophyll-a, Uncorrected	11		ug/L	P444935	
2484793	Enterolert/QT	Enterococci-Quanti-Tray	31		MPN/100 mL		

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.

Sample Location: PEACE RIVER ABOVE HORSE CREEK 2

Collection Date/Time: 04/24/2024 13:10

Field ID: G3SD0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484794	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	10	U	MPN/100 mL		

Sample Location: PEACE RIVER AT PEACE RIVER DR

Collection Date/Time: 04/24/2024 12:10

Field ID: G3SD0239

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484808	Enterolert/QT	Enterococci-Quanti-Tray	10	U	MPN/100 mL		

Non-Conformance Report

NCR ID: 10478

Event(s)

SO-DIST-2024-04-25-01

Job(s)

TLH-2024-04-25-12

Sample(s)

2484792

Test(s)

NCR Type: PREPARATION

NCR Category: Sample Preservation

Observation: Samples exceeded the required temperature during storage due to power outage.

Resolution: Per customer request, remaining tests of affected samples will not be analyzed. The data will be reported as "No Result" with an "O" qualifier.

Authorized by/Date: Cheryl A. Swanson 5/28/2024

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry Colin Wright (850) 245-8085
Biology Cheryl Swanson (850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: SM 10150 B
Batch ID: P444935

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.93	U	ug/L
Chlorophyll-a, Uncorrected	0.68	U	ug/L
Phaeophytin-a	1.0	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P444452

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

Reference Method: SOP-PCR-1.4
Batch ID: P444452

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 10150 B
Batch ID: P444935

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

Reference Method: SOP-PCR-1.0
Batch ID: P444452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	77.9	84.0	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P444452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	108	96.9	P/P	50 - 175

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483537	HF183-qPCR	77.5	88.0	P/P	50 - 175
2483538	HF183-qPCR	89.0		P	50 - 175
2483539	HF183-qPCR	91.6		P	50 - 175
2484559	HF183-qPCR	92.0		P	50 - 175
2484792	HF183-qPCR	80.9		P	50 - 175
2484915	HF183-qPCR	87.1		P	50 - 175
2484916	HF183-qPCR	87.1		P	50 - 175

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2485242	HF183-qPCR	89.3		P	50 - 175
2485243	HF183-qPCR	83.6		P	50 - 175
2485244	HF183-qPCR	77.8		P	50 - 175
2485245	HF183-qPCR	98.0		P	50 - 175
2485246	HF183-qPCR	81.6		P	50 - 175
2485411	HF183-qPCR	83.9		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P444452

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483537	BacR-qPCR	73.3	73.1	P/P	50 - 175
2483538	BacR-qPCR	73.4		P	50 - 175
2483539	BacR-qPCR	61.3		P	50 - 175
2484559	BacR-qPCR	78.1		P	50 - 175
2484792	BacR-qPCR	56.5		P	50 - 175
2484915	BacR-qPCR	92.9		P	50 - 175
2484916	BacR-qPCR	87.2		P	50 - 175
2485242	BacR-qPCR	78.1		P	50 - 175
2485243	BacR-qPCR	77.4		P	50 - 175
2485244	BacR-qPCR	38.0		F	50 - 175
2485245	BacR-qPCR	71.6		P	50 - 175
2485246	BacR-qPCR	35.6		F	50 - 175
2485411	BacR-qPCR	75.4		P	50 - 175

Quality Assurance Report

Precision

Reference Method: SM 10150 B

Batch ID: P444935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484910	Chlorophyll-a, Corrected	5.67	Sample	P	0 - 25
2484910	Chlorophyll-a, Uncorrected	0.500	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0

Batch ID: P444452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483537	HF183-qPCR	12.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4

Batch ID: P444452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483537	BacR-qPCR	0.302	Spike	P	0 - 25

Quality Assurance Report

Precision

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

Quality Assurance Report

Surrogates

Lab Sample ID: 2484792

Field Sample ID: G3SD0148

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	80.8	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	79.3	P	50 - 300

Quality Assurance Report

Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10150 B	Chlorophyll-a, Corrected	104						5.67	
	Chlorophyll-a, Uncorrected							0.500	
SOP-PCR-1.0	HF183-qPCR	84.0	77.9	77.5	88.0	89.0			12.7
SOP-PCR-1.4	BacR-qPCR	96.9	108	91.6					
				73.3	73.1	73.4			0.302
				61.3					

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert/QT by BEA South in North Port	2484793, 2484807, 2484808
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2484791
SM 9223 Quanti-Tray	E. coli by Colilert/QT by BEA South in North Port	2484794
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2484792
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2484792
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2484792

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	04/24/2024	04/24/2024 16:28		04/25/2024 16:47	Benchmark EnviroAnalytical in North Port	2484793, 2484807, 2484808
SM 10150 B	04/25/2024	04/25/2024 13:05	Julianna Belitz	04/29/2024 09:40	Tynan A Branch	2484791
SM 9223 Quanti-Tray	04/24/2024	04/24/2024 15:52		04/25/2024 16:10	Benchmark EnviroAnalytical in North Port	2484794
SOP-PCR-1.0	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/07/2024 14:06	Roberta Tatti	2484792
SOP-PCR-1.4	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/08/2024 09:42	Roberta Tatti	2484792
SOP-PCR-1.5	04/25/2024	04/25/2024 14:10	Madeline Gruver	05/29/2024 11:31	Roberta Tatti	2484792