

Biological Analysis Report

NE-DIST-2023-08-25-01

Florida DEP Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
Diversified Environmental Laboratories, Inc.
3653 Regent Boulevard
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Jacksonville, FL 32224
DOH Accreditation E821059

Event Description: **Suwannee East 2023**
Request ID: **RQ-2023-08-21-44**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 10-OCT-2023 11:23



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: OLUSTEE CREEK AT SR 18

Collection Date/Time: 08/24/2023 10:00

Field ID: 21030071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2433656	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	629.4		MPN/100 mL		

Sample Location: MONTEOCHA CR AT CR 340(NE 156TH AVE)

Collection Date/Time: 08/24/2023 12:05

Field ID: 21030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2433657	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	686.7		MPN/100 mL		
2433658	SOP-PCR-1.0	HF183-purified-qPCR**	550	UJ	TSC/100 mL	P435576	LCS, SUR
	SOP-PCR-1.4	BacR-purified-qPCR**	1.06E+05	J	TSC/100 mL	P435576	LCS, SUR
	SOP-PCR-1.5	DG3-purified-qPCR**	430	UJ	TSC/100 mL	P435576	LCS, SUR

Ref. Method and Comment:

SOP-PCR-1.0: Precision data unavailable for HF183-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.4: Precision data unavailable for BacR-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.5: Precision data unavailable for DG3-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: ROCKY CREEK AT 156TH AV

Collection Date/Time: 08/24/2023 11:50

Field ID: G1NE0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2433654	SM 10150 B	Chlorophyll-a, Corrected	2.1	U	ug/L	P434530	
		Phaeophytin-a	2.2	U	ug/L	P434530	
		Chlorophyll-a, Uncorrected	1.5	U	ug/L	P434530	
2433655	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	770.1		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: Mill Creek at old Bellamy Alligator Road

Collection Date/Time: 08/24/2023 10:30

Field ID: 21030126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2434114	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	J	MPN/100 mL		

Ref. Method and Comment:

SM 9223 B Quanti-Tray: All Quanti-Tray wells were positive. Result may be higher than reported.

Sample Location: Santa Fe River at CR325

Collection Date/Time: 08/24/2023 12:40

Field ID: 21030114

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2434115	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	21.8		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10150 B

Batch ID: P434530

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 10150 B
Batch ID: P434530

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

Reference Method: SOP-PCR-1.0
Batch ID: P435576

Component	Result	Code	Units
HF183-purified-qPCR	550	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P435576

Component	Result	Code	Units
BacR-purified-qPCR	510	U	TSC/100 mL

Reference Method: SOP-PCR-1.5
Batch ID: P435576

Component	Result	Code	Units
DG3-purified-qPCR	430	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10150 B
Batch ID: P434530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.7		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P435576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	66.6	1.97	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P435576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-purified-qPCR	80.1	0.786	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P435576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-purified-qPCR	69.7	0.803	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P435576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433658	HF183-purified-qPCR	93.1		P	50 - 175
2433686	HF183-purified-qPCR	88.6		P	50 - 175
2435449	HF183-purified-qPCR	89.0		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P435576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433658	BacR-purified-qPCR	82.1		P	50 - 175
2433686	BacR-purified-qPCR	78.3		P	50 - 175
2435449	BacR-purified-qPCR	82.1		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P435576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2433658	DG3-purified-qPCR	90.1		P	50 - 175
2433686	DG3-purified-qPCR	89.0		P	50 - 175
2435449	DG3-purified-qPCR	90.6		P	50 - 175

Quality Assurance Report

Surrogates

Lab Sample ID: 2433658

Field Sample ID: 21030112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	45.7	F	50 - 300
SOP-PCR-1.4	SKETA-qPCR	46.6	F	50 - 300
SOP-PCR-1.5	SKETA-qPCR	44.2	F	50 - 300

Quality Assurance Report

Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	95.7							
SOP-PCR-1.0	HF183-purified-qPCR	1.97	66.6	93.1	88.6	89.0			
SOP-PCR-1.4	BacR-purified-qPCR	0.786	80.1	82.1	78.3	82.1			
SOP-PCR-1.5	DG3-purified-qPCR	0.803	69.7	90.1	89.0	90.6			

Reference Method Descriptions

Method	Description	Associated Samples
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2433654
SM 9223 B Quanti-Tray	E. coli by Colilert/QT by Diversified Environmental Laboratories in Jacksonville	2433655, 2433656, 2433657, 2434114, 2434115
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2433658

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2433658
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2433658

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10150 B	08/25/2023	08/25/2023 14:37	Tynan A Branch	09/01/2023 09:13	Keanu Thijm	2433654
SM 9223 B Quanti-Tray	08/24/2023	08/24/2023 15:39		08/25/2023 09:44	Diversified-Jacksonville	2433655, 2433656, 2433657, 2434114, 2434115
SOP-PCR-1.0	08/25/2023	08/25/2023 11:45	Roberta Tatti	09/28/2023 16:11	Madeline Gruver	2433658
SOP-PCR-1.4	08/25/2023	08/25/2023 11:45	Roberta Tatti	09/28/2023 17:21	Madeline Gruver	2433658
SOP-PCR-1.5	08/25/2023	08/25/2023 11:45	Roberta Tatti	09/28/2023 16:11	Madeline Gruver	2433658