

Biological Analysis Report

SE-DIST-2024-06-12-01

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

Event Description: **SMP - Goat Creek/Micco**
Request ID: **RQ-2024-05-13-19**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Fort Pierce, FL 34945
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Certified by: Puja Jasrotia, Environmental Administrator

Date Certified: 25-JUL-2024 09:53

A handwritten signature in black ink, appearing to be 'Puja Jasrotia', written over a horizontal line.

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, Microbiology and Molecular.

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: GOAT CREEK AT GRADICK

Collection Date/Time: 06/11/2024 09:00

Field ID: G5SE0080

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493102	SM 10150 B	Chlorophyll-a, Corrected	5.8		ug/L	P447295	
		Phaeophytin-a	2.0	U	ug/L	P447295	
		Chlorophyll-a, Uncorrected	6.5		ug/L	P447295	
2493108	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	657.0	Q	MPN/100 mL	P446721	
2493115	SOP-PCR-1.0	HF183-qPCR**	2.2E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.2	GULL2-qPCR**	2.4E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.3	GFD-qPCR**	2.0E+03	I	TSC/100 mL	P445986	
	SOP-PCR-1.4	BacR-qPCR**	2.0E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.5	DG3-qPCR**	1.7E+03	U	TSC/100 mL	P445986	

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: GOAT CREEK NEAR TADLOCK AVE

Collection Date/Time: 06/11/2024 09:25

Field ID: G5SE0130

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493103	SM 10150 B	Chlorophyll-a, Corrected	20		ug/L	P447295	
		Phaeophytin-a	4.6	I	ug/L	P447295	
		Chlorophyll-a, Uncorrected	23		ug/L	P447295	
2493109	Enterolert/QT	Enterococci-Quanti-Tray	51.5	AQ	MPN/100 mL	P446721	
2493110	SM 9222 D	Fecal Coliforms-Membrane Filter	130	BQ	cfu/100 mL	P446724	
2493116	SOP-PCR-1.0	HF183-qPCR**	1.1E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.2	GULL2-qPCR**	1.2E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.3	GFD-qPCR**	4.0E+03		TSC/100 mL	P445986	
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.5	DG3-qPCR**	860	U	TSC/100 mL	P445986	

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 9222 D: Laboratory duplicate result is 120 Z. Precision data for this duplicate is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: KID CREEK AT OLD DIXIE HIGHWAY

Collection Date/Time: 06/11/2024 09:45

Field ID: G5SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493104	SM 10150 B	Chlorophyll-a, Corrected	3.2	I	ug/L	P447295	
		Phaeophytin-a	1.7	U	ug/L	P447295	
		Chlorophyll-a, Uncorrected	3.0	I	ug/L	P447295	
2493111	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	727.0	Q	MPN/100 mL	P446721	
2493117	SOP-PCR-1.0	HF183-qPCR**	2.2E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.2	GULL2-qPCR**	2.4E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.3	GFD-qPCR**	4.2E+03		TSC/100 mL	P445986	
	SOP-PCR-1.4	BacR-qPCR**	2.0E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.5	DG3-qPCR**	1.7E+03	U	TSC/100 mL	P445986	

Field ID: G5SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: UNNAMED CANAL NORTH OF SENNE HIGHLANDS

Collection Date/Time: 06/11/2024 10:35

Field ID: G5SE0139

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493106	SM 10150 B	Chlorophyll-a, Corrected	1.0	I	ug/L	P447295	
		Phaeophytin-a	1.0	U	ug/L	P447295	
		Chlorophyll-a, Uncorrected	0.68	U	ug/L	P447295	
2493113	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	56.5	Q	MPN/100 mL	P446721	
2493119	SOP-PCR-1.0	HF183-qPCR**	830	U	TSC/100 mL	P445986	
	SOP-PCR-1.2	GULL2-qPCR**	900	U	TSC/100 mL	P445986	
	SOP-PCR-1.3	GFD-qPCR**	3.92E+03		TSC/100 mL	P445986	
	SOP-PCR-1.4	BacR-qPCR**	760	U	TSC/100 mL	P445986	
	SOP-PCR-1.5	DG3-qPCR**	640	U	TSC/100 mL	P445986	

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: MICCO DITCH AT BLUEBIRD DRIVE

Collection Date/Time: 06/11/2024 12:00

Field ID: G5SE0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493105	SM 10150 B	Chlorophyll-a, Corrected	31		ug/L	P447295	
		Phaeophytin-a	3.9	I	ug/L	P447295	
		Chlorophyll-a, Uncorrected	35		ug/L	P447295	
2493112	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	980.4	Q	MPN/100 mL	P446721	
2493118	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P445986	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P445986	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P445986	

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: UNNAMED CANAL WEST OF MICCO

Collection Date/Time: 06/11/2024 11:15

Field ID: G5SE0140

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493107	SM 10150 B	Chlorophyll-a, Corrected	20		ug/L	P447295	
		Phaeophytin-a	3.8	I	ug/L	P447295	
		Chlorophyll-a, Uncorrected	23		ug/L	P447295	
2493114	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	41.4	Q	MPN/100 mL	P446721	
2493120	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P446401	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P446401	

Field ID: G5SE0140

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2493120	SOP-PCR-1.3	GFD-qPCR**	820	I	TSC/100 mL	P446401	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P446401	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P446401	

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.
SOP-PCR-1.3: Duplicate was analyzed and result is 820 I.

Quality Assurance Report

Method Blank Results

Reference Method: Enterolert/QT
Batch ID: P446721

Component	Result	Code	Units
Enterococci-Quanti-Tray	1.0	U	MPN/100 mL

Reference Method: SM 10150 B
Batch ID: P447295

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: SM 9222 D
Batch ID: P446724

Component	Result	Code	Units
Fecal Coliforms-Membrane Filter	2	U	cfu/100 mL

Reference Method: SM 9223 B Quanti-Tray
Batch ID: P446721

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Reference Method: SOP-PCR-1.0
Batch ID: P445986

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

Reference Method: SOP-PCR-1.0
Batch ID: P446401

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

Reference Method: SOP-PCR-1.2
Batch ID: P445986

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

Quality Assurance Report
Method Blank Results

Reference Method: SOP-PCR-1.2
Batch ID: P446401

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

Reference Method: SOP-PCR-1.3
Batch ID: P445986

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

Reference Method: SOP-PCR-1.3
Batch ID: P446401

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

Reference Method: SOP-PCR-1.4
Batch ID: P445986

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

Reference Method: SOP-PCR-1.4
Batch ID: P446401

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

Reference Method: SOP-PCR-1.5
Batch ID: P445986

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

Reference Method: SOP-PCR-1.5
Batch ID: P446401

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: P447295

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	111		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	92.0	83.4	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P446401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	104	87.0	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	90.0	82.4	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P446401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	81.7	84.0	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	83.4	84.6	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P446401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	87.4	83.3	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	63.4	86.1	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P446401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	93.9	89.5	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P445986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	94.4	79.5	P/P	50 - 175

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.5

Batch ID: P446401

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	102	82.1	P/P	50 - 175

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2490911	HF183-qPCR	93.3	90.3	P/P	50 - 175
2490912	HF183-qPCR	100		P	50 - 175
2491120	HF183-qPCR	86.6		P	50 - 175
2492296	HF183-qPCR	84.5		P	50 - 175
2492297	HF183-qPCR	90.1		P	50 - 175
2492466	HF183-qPCR	86.9		P	50 - 175
2492467	HF183-qPCR	85.8		P	50 - 175
2492468	HF183-qPCR	97.4		P	50 - 175
2493115	HF183-qPCR	91.0		P	50 - 175
2493116	HF183-qPCR	80.5		P	50 - 175
2493117	HF183-qPCR	89.2		P	50 - 175
2493118	HF183-qPCR	80.7		P	50 - 175
2493119	HF183-qPCR	90.8		P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493120	HF183-qPCR	102	101	P/P	50 - 175
2493550	HF183-qPCR	100		P	50 - 175
2494548	HF183-qPCR	106		P	50 - 175
2494945	HF183-qPCR	106		P	50 - 175
2494946	HF183-qPCR	108		P	50 - 175
2495107	HF183-qPCR	104		P	50 - 175
2495108	HF183-qPCR	106		P	50 - 175
2495109	HF183-qPCR	97.8		P	50 - 175
2495110	HF183-qPCR	90.8		P	50 - 175
2495911	HF183-qPCR	101		P	50 - 175
2496040	HF183-qPCR	107		P	50 - 175
2496802	HF183-qPCR	102		P	50 - 175
2496803	HF183-qPCR	94.6		P	50 - 175

Reference Method: SOP-PCR-1.2

Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2490911	GULL2-qPCR	80.2	82.9	P/P	50 - 175
2490912	GULL2-qPCR	81.8		P	50 - 175
2492296	GULL2-qPCR	55.7		P	50 - 175
2492297	GULL2-qPCR	91.9		P	50 - 175
2492466	GULL2-qPCR	75.9		P	50 - 175
2492467	GULL2-qPCR	74.2		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2
Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2492468	GULL2-qPCR	78.0		P	50 - 175
2493115	GULL2-qPCR	76.5		P	50 - 175
2493116	GULL2-qPCR	67.0		P	50 - 175
2493117	GULL2-qPCR	73.1		P	50 - 175
2493118	GULL2-qPCR	57.1		P	50 - 175
2493119	GULL2-qPCR	87.6		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493120	GULL2-qPCR	56.8	61.7	P/P	50 - 175
2493550	GULL2-qPCR	70.4		P	50 - 175
2494945	GULL2-qPCR	83.1		P	50 - 175
2494946	GULL2-qPCR	86.1		P	50 - 175
2495107	GULL2-qPCR	58.5		P	50 - 175
2495108	GULL2-qPCR	38.5		F	50 - 175
2495109	GULL2-qPCR	50.6		P	50 - 175
2495110	GULL2-qPCR	39.1		F	50 - 175
2495911	GULL2-qPCR	65.7		P	50 - 175
2496802	GULL2-qPCR	76.7		P	50 - 175
2496803	GULL2-qPCR	81.4		P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2490911	GFD-qPCR	89.5	89.2	P/P	50 - 175
2490912	GFD-qPCR	91.6		P	50 - 175
2492296	GFD-qPCR	76.6		P	50 - 175
2492297	GFD-qPCR	90.0		P	50 - 175
2492466	GFD-qPCR	81.7		P	50 - 175
2492467	GFD-qPCR	76.1		P	50 - 175
2492468	GFD-qPCR	83.6		P	50 - 175
2493115	GFD-qPCR	95.1		P	50 - 175
2493116	GFD-qPCR	73.4		P	50 - 175
2493117	GFD-qPCR	92.3		P	50 - 175
2493118	GFD-qPCR	76.1		P	50 - 175
2493119	GFD-qPCR	79.3		P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493120	GFD-qPCR	90.7	86.8	P/P	50 - 175
2493550	GFD-qPCR	94.6		P	50 - 175
2494945	GFD-qPCR	100		P	50 - 175
2494946	GFD-qPCR	93.4		P	50 - 175
2495107	GFD-qPCR	81.4		P	50 - 175
2495108	GFD-qPCR	87.1		P	50 - 175
2495109	GFD-qPCR	72.2		P	50 - 175
2495110	GFD-qPCR	61.3		P	50 - 175

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3

Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2495911	GFD-qPCR	86.2		P	50 - 175
2496802	GFD-qPCR	74.2		P	50 - 175
2496803	GFD-qPCR	79.2		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2490911	BacR-qPCR	77.8	80.8	P/P	50 - 175
2490912	BacR-qPCR	90.9		P	50 - 175
2491120	BacR-qPCR	68.8		P	50 - 175
2492296	BacR-qPCR	68.3		P	50 - 175
2492297	BacR-qPCR	75.9		P	50 - 175
2492466	BacR-qPCR	86.1		P	50 - 175
2492467	BacR-qPCR	87.6		P	50 - 175
2492468	BacR-qPCR	83.9		P	50 - 175
2493115	BacR-qPCR	72.3		P	50 - 175
2493116	BacR-qPCR	80.3		P	50 - 175
2493117	BacR-qPCR	81.1		P	50 - 175
2493118	BacR-qPCR	69.6		P	50 - 175
2493119	BacR-qPCR	90.7		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493120	BacR-qPCR	69.9	72.9	P/P	50 - 175
2493550	BacR-qPCR	84.4		P	50 - 175
2494548	BacR-qPCR	88.8		P	50 - 175
2494945	BacR-qPCR	89.8		P	50 - 175
2494946	BacR-qPCR	90.5		P	50 - 175
2495107	BacR-qPCR	84.6		P	50 - 175
2495108	BacR-qPCR	65.7		P	50 - 175
2495109	BacR-qPCR	63.6		P	50 - 175
2495110	BacR-qPCR	63.5		P	50 - 175
2495911	BacR-qPCR	94.7		P	50 - 175
2496040	BacR-qPCR	86.8		P	50 - 175
2496802	BacR-qPCR	102		P	50 - 175
2496803	BacR-qPCR	99.8		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2490911	DG3-qPCR	90.5	95.0	P/P	50 - 175
2490912	DG3-qPCR	105		P	50 - 175
2491120	DG3-qPCR	96.2		P	50 - 175
2492296	DG3-qPCR	88.0		P	50 - 175
2492297	DG3-qPCR	89.7		P	50 - 175
2492466	DG3-qPCR	85.8		P	50 - 175
2492467	DG3-qPCR	94.4		P	50 - 175
2492468	DG3-qPCR	96.9		P	50 - 175

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5

Batch ID: P445986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493115	DG3-qPCR	95.6		P	50 - 175
2493116	DG3-qPCR	91.7		P	50 - 175
2493117	DG3-qPCR	98.1		P	50 - 175
2493118	DG3-qPCR	76.9		P	50 - 175
2493119	DG3-qPCR	86.5		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P446401

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2493120	DG3-qPCR	91.9	93.4	P/P	50 - 175
2493550	DG3-qPCR	92.0		P	50 - 175
2494548	DG3-qPCR	84.7		P	50 - 175
2494945	DG3-qPCR	76.8		P	50 - 175
2494946	DG3-qPCR	75.9		P	50 - 175
2495107	DG3-qPCR	93.3		P	50 - 175
2495108	DG3-qPCR	85.1		P	50 - 175
2495109	DG3-qPCR	83.1		P	50 - 175
2495110	DG3-qPCR	83.2		P	50 - 175
2495911	DG3-qPCR	89.6		P	50 - 175
2496040	DG3-qPCR	92.2		P	50 - 175
2496802	DG3-qPCR	79.2		P	50 - 175
2496803	DG3-qPCR	74.6		P	50 - 175

Quality Assurance Report

Precision

Reference Method: SM 10150 B

Batch ID: P447295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493252	Chlorophyll-a, Corrected	0.454	Sample	P	0 - 25
2493252	Chlorophyll-a, Uncorrected	1.16	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0

Batch ID: P445986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2490911	HF183-qPCR	3.20	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0

Batch ID: P446401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493120	HF183-qPCR	0.234	Spike	P	0 - 25

Quality Assurance Report
Precision

Reference Method: SOP-PCR-1.2
Batch ID: P445986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2490911	GULL2-qPCR	3.30	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P446401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493120	GULL2-qPCR	8.23	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P445986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2490911	GFD-qPCR	0.339	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P446401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493120	GFD-qPCR	4.42	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P445986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2490911	BacR-qPCR	3.77	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P446401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493120	BacR-qPCR	4.11	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P445986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2490911	DG3-qPCR	4.89	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P446401

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2493120	DG3-qPCR	1.59	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: 2493115

Field Sample ID: G5SE0080

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	128	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	166	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	171	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	124	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	108	P	50 - 300

Lab Sample ID: 2493116

Field Sample ID: G5SE0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	125	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	135	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	135	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	119	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	108	P	50 - 300

Lab Sample ID: 2493117

Field Sample ID: G5SE0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	114	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	162	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	177	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	102	P	50 - 300

Lab Sample ID: 2493118

Field Sample ID: G5SE0153

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	111	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	132	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	132	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	110	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	102	P	50 - 300

Lab Sample ID: 2493119

Field Sample ID: G5SE0139

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	123	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	149	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	148	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	122	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	108	P	50 - 300

Quality Assurance Report
Surrogates

Lab Sample ID: 2493120
Field Sample ID: G5SE0140

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	119	P	50 - 300
SOP-PCR-1.0	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	97.0	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	98.9	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	148	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	158	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	109	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	105	P	50 - 300

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	111						0.454	
	Chlorophyll-a, Uncorrected							1.16	
SOP-PCR-1.0	HF183-qPCR	83.4	92.0	86.6	84.5	93.3			3.20
	HF183-qPCR	87.0	104	102	101	100			0.234
SOP-PCR-1.2	GULL2-qPCR	82.4	90.0	80.2	82.9	81.8			3.30
	GULL2-qPCR	84.0	81.7	56.8	61.7	70.4			8.23
SOP-PCR-1.3	GFD-qPCR	84.6	83.4	89.5	89.2	91.6			0.339
	GFD-qPCR	83.3	87.4	90.7	86.8	94.6			4.42
SOP-PCR-1.4	BacR-qPCR	86.1	63.4	77.8	80.8	90.9			3.77
	BacR-qPCR	93.9	89.5	72.9	69.9	84.4			4.11
SOP-PCR-1.5	DG3-qPCR	79.5	94.4	90.5	95.0	105			4.89
	DG3-qPCR	82.1	102	91.9	93.4	92.0			1.59

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2493109
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2493102, 2493103, 2493104, 2493105, 2493106, 2493107
SM 9222 D	Fecal coliforms by membrane filter method - non-chlorinated water systems	2493110
SM 9223 B Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2493108, 2493111, 2493112, 2493113, 2493114
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2493115, 2493116, 2493117, 2493118, 2493119, 2493120
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2493115, 2493116, 2493117, 2493118, 2493119, 2493120
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2493115, 2493116, 2493117, 2493118, 2493119, 2493120

Reference Method Descriptions

Method	Description	Associated Samples
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2493115, 2493116, 2493117, 2493118, 2493119, 2493120
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2493115, 2493116, 2493117, 2493118, 2493119, 2493120

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT SM 10150 B	06/12/2024	06/12/2024 11:49	Megan Higbee	06/13/2024 11:50	Megan Higbee	2493109
	06/12/2024	06/12/2024 14:03	Tynan A Branch	06/25/2024 16:03	Callie Williams	2493102, 2493103, 2493104, 2493105, 2493106, 2493107
SM 9222 D	06/12/2024	06/12/2024 15:59	Callie Williams	06/13/2024 14:24	Callie Williams	2493110
SM 9223 B Quanti-Tray	06/12/2024	06/12/2024 15:39	Megan Higbee	06/13/2024 10:54	Megan Higbee	2493108, 2493111, 2493112, 2493113, 2493114
SOP-PCR-1.0	06/12/2024	06/12/2024 11:17	Madeline Gruver	06/18/2024 08:30	Roberta Tatti	2493115, 2493116
	06/12/2024	06/12/2024 12:09	Madeline Gruver	06/18/2024 08:30	Roberta Tatti	2493117
	06/12/2024	06/12/2024 12:53	Madeline Gruver	06/18/2024 08:30	Roberta Tatti	2493118, 2493119
	06/12/2024	06/12/2024 14:44	Arlene Taylor	07/03/2024 09:06	Roberta Tatti	2493120
SOP-PCR-1.2	06/12/2024	06/12/2024 11:17	Madeline Gruver	06/25/2024 17:13	Madeline Gruver	2493115, 2493116
	06/12/2024	06/12/2024 12:09	Madeline Gruver	06/25/2024 17:13	Madeline Gruver	2493117
	06/12/2024	06/12/2024 12:53	Madeline Gruver	06/25/2024 17:13	Madeline Gruver	2493118, 2493119
	06/12/2024	06/12/2024 14:44	Arlene Taylor	07/11/2024 15:39	Madeline Gruver	2493120
SOP-PCR-1.3	06/12/2024	06/12/2024 11:17	Madeline Gruver	06/25/2024 14:31	Madeline Gruver	2493115, 2493116
	06/12/2024	06/12/2024 12:09	Madeline Gruver	06/25/2024 14:31	Madeline Gruver	2493117
	06/12/2024	06/12/2024 12:53	Madeline Gruver	06/25/2024 14:31	Madeline Gruver	2493118, 2493119
	06/12/2024	06/12/2024 14:44	Arlene Taylor	07/11/2024 11:25	Madeline Gruver	2493120
SOP-PCR-1.4	06/12/2024	06/12/2024 11:17	Madeline Gruver	06/19/2024 09:06	Roberta Tatti	2493115, 2493116
	06/12/2024	06/12/2024 12:09	Madeline Gruver	06/19/2024 09:06	Roberta Tatti	2493117
	06/12/2024	06/12/2024 12:53	Madeline Gruver	06/19/2024 09:06	Roberta Tatti	2493118, 2493119
	06/12/2024	06/12/2024 14:44	Arlene Taylor	07/08/2024 08:56	Roberta Tatti	2493120
SOP-PCR-1.5	06/12/2024	06/12/2024 11:17	Madeline Gruver	06/21/2024 09:26	Roberta Tatti	2493115, 2493116
	06/12/2024	06/12/2024 12:09	Madeline Gruver	06/21/2024 09:26	Roberta Tatti	2493117
	06/12/2024	06/12/2024 12:53	Madeline Gruver	06/21/2024 09:26	Roberta Tatti	2493118, 2493119
	06/12/2024	06/12/2024 14:44	Arlene Taylor	07/08/2024 13:57	Roberta Tatti	2493120