

Biological Analysis Report

SE-DIST-2023-05-12-02

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

Event Description: **SMP - Highlands**
Request ID: **RQ-2023-05-01-53**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 27-JUN-2023 13:51



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: JACKSON CREEK NORTH OF SR 66

Collection Date/Time: 05/11/2023 10:00

Field ID: G4SE0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409330	SM 10150 B	Chlorophyll-a, Corrected	19		ug/L	P429825	
		Phaeophytin-a	8.6		ug/L	P429825	
		Chlorophyll-a, Uncorrected	25		ug/L	P429825	
2409336	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	3.1	Q	MPN/100 mL	P429872	

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: ARBUCKLE CREEK AT US HWY 98

Collection Date/Time: 05/11/2023 10:45

Field ID: G4SE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409331	SM 10150 B	Chlorophyll-a, Corrected	41		ug/L	P429825	
		Phaeophytin-a	5.4	I	ug/L	P429825	
		Chlorophyll-a, Uncorrected	46		ug/L	P429825	
2409337	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	37.9	Q	MPN/100 mL	P429872	

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: ARBUCKLE BRANCH AT ARBUCKLE CREEK RD

Collection Date/Time: 05/11/2023 11:15

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409332	SM 10150 B	Chlorophyll-a, Corrected	10		ug/L	P429825	
		Phaeophytin-a	5.7		ug/L	P429825	
		Chlorophyll-a, Uncorrected	14		ug/L	P429825	
2409338	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	1413.6	Q	MPN/100 mL	P429872	
2409345	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P429413	
	SOP-PCR-1.2	GULL2-qPCR**	3.6E+03	U	TSC/100 mL	P429413	
	SOP-PCR-1.3	GFD-qPCR**	720	U	TSC/100 mL	P431159	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P429413	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P429413	

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: Precision data unavailable for GFD-qPCR component.

Sample Location: KISSIMMEE TRIBUTARY AT US 98 WEST OF CORNWELL

Collection Date/Time: 05/11/2023 12:50

Field ID: G4SE0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409340	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	248.9	Q	MPN/100 mL	P429872	

Sample Location: KISSIMMEE TRIBUTARY AT US 98 EAST OF BUCKHORN

Collection Date/Time: 05/11/2023 12:30

Field ID: G4SE0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409341	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	66.3	Q	MPN/100 mL	P429872	
2409346	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P429819	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P429819	
	SOP-PCR-1.3	GFD-qPCR**	900	I	TSC/100 mL	P429819	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P429819	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P429819	

Ref. Method and Comment:
SOP-PCR-1.3: Duplicate was analyzed and result is 850 I.

Sample Location: INDIAN PRAIRIE CANAL UPSTREAM OF SR 70 Collection Date/Time: 05/11/2023 09:00

Field ID: G4SE0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409339	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	193.5	Q	MPN/100 mL	P429872	

Quality Assurance Report
Method Blank Results

Reference Method: SM 10150 B
Batch ID: P429825

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: SM 9223 B Quanti-Tray
Batch ID: P429872

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

Reference Method: SOP-PCR-1.0
Batch ID: P429413

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

Reference Method: SOP-PCR-1.0
Batch ID: P429819

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

Reference Method: SOP-PCR-1.2
Batch ID: P429413

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: P429819

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

Reference Method: SOP-PCR-1.3
Batch ID: P429819

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

Reference Method: SOP-PCR-1.3
Batch ID: P431159

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

Reference Method: SOP-PCR-1.4
Batch ID: P429413

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

Reference Method: SOP-PCR-1.4
Batch ID: P429819

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

Reference Method: SOP-PCR-1.5
Batch ID: P429413

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

Reference Method: SOP-PCR-1.5
Batch ID: P429819

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: P429825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	95.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P429413

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: P429413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	90.1	104	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P429819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	97.5	91.2	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P429413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	109	106	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P429819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	107	98.1	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P429819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	85.3	104	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P431159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	87.5	101	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P429413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	101	95.5	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P429819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	125	95.1	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P429413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	103	86.9	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P429819

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	107	83.8	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405725	HF183-qPCR	81.8	77.6	P/P	50 - 175
2406192	HF183-qPCR	66.4		P	50 - 175
2407441	HF183-qPCR	74.6		P	50 - 175
2407442	HF183-qPCR	84.1		P	50 - 175
2407443	HF183-qPCR	80.3		P	50 - 175
2408326	HF183-qPCR	73.6		P	50 - 175
2408541	HF183-qPCR	77.2		P	50 - 175
2408542	HF183-qPCR	92.0		P	50 - 175
2408863	HF183-qPCR	76.9		P	50 - 175
2409065	HF183-qPCR	80.4		P	50 - 175
2409323	HF183-qPCR	85.2		P	50 - 175
2409345	HF183-qPCR	74.7		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409346	HF183-qPCR	75.7	79.9	P/P	50 - 175
2409749	HF183-qPCR	96.9		P	50 - 175
2409831	HF183-qPCR	86.4		P	50 - 175
2410171	HF183-qPCR	92.7		P	50 - 175
2410500	HF183-qPCR	104		P	50 - 175
2410501	HF183-qPCR	84.2		P	50 - 175
2410831	HF183-qPCR	72.8		P	50 - 175
2411303	HF183-qPCR	83.9		P	50 - 175
2411335	HF183-qPCR	85.3		P	50 - 175
2411336	HF183-qPCR	84.2		P	50 - 175
2411817	HF183-qPCR	105		P	50 - 175
2412131	HF183-qPCR	95.5		P	50 - 175
2412132	HF183-qPCR	78.2		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405725	GULL2-qPCR	104	89.1	P/P	50 - 300
2406192	GULL2-qPCR	90.4		P	50 - 300
2407441	GULL2-qPCR	93.3		P	50 - 300
2407442	GULL2-qPCR	115		P	50 - 300
2407443	GULL2-qPCR	88.4		P	50 - 300
2408326	GULL2-qPCR	87.4		P	50 - 300
2408541	GULL2-qPCR	123		P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408863	GULL2-qPCR	80.5		P	50 - 300
2409345	GULL2-qPCR	85.7		P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409346	GULL2-qPCR	85.8	84.3	P/P	50 - 300
2409749	GULL2-qPCR	69.8		P	50 - 300
2409831	GULL2-qPCR	64.9		P	50 - 300
2410500	GULL2-qPCR	77.6		P	50 - 300
2410501	GULL2-qPCR	84.7		P	50 - 300
2410831	GULL2-qPCR	89.4		P	50 - 300
2411303	GULL2-qPCR	69.4		P	50 - 300
2411335	GULL2-qPCR	80.5		P	50 - 300
2411336	GULL2-qPCR	81.4		P	50 - 300
2411817	GULL2-qPCR	94.7		P	50 - 300
2412131	GULL2-qPCR	89.7		P	50 - 300
2412132	GULL2-qPCR	77.5		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409346	GFD-qPCR	86.3	93.2	P/P	50 - 175
2409749	GFD-qPCR	95.2		P	50 - 175
2409831	GFD-qPCR	95.9		P	50 - 175
2410500	GFD-qPCR	90.4		P	50 - 175
2410501	GFD-qPCR	93.6		P	50 - 175
2410831	GFD-qPCR	94.7		P	50 - 175
2411303	GFD-qPCR	102		P	50 - 175
2411335	GFD-qPCR	83.9		P	50 - 175
2411336	GFD-qPCR	82.9		P	50 - 175
2411817	GFD-qPCR	93.4		P	50 - 175
2412131	GFD-qPCR	84.8		P	50 - 175
2412132	GFD-qPCR	82.9		P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P431159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408863	GFD-qPCR	89.1		P	50 - 175
2409345	GFD-qPCR	82.8		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405725	BacR-qPCR	78.1	82.0	P/P	50 - 175
2406192	BacR-qPCR	68.1		P	50 - 175
2407441	BacR-qPCR	74.3		P	50 - 175
2407442	BacR-qPCR	69.4		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2407443	BacR-qPCR	75.6		P	50 - 175
2408326	BacR-qPCR	72.1		P	50 - 175
2408541	BacR-qPCR	95.2		P	50 - 175
2408542	BacR-qPCR	76.0		P	50 - 175
2408863	BacR-qPCR	73.3		P	50 - 175
2409065	BacR-qPCR	76.8		P	50 - 175
2409323	BacR-qPCR	67.9		P	50 - 175
2409345	BacR-qPCR	58.0		P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409346	BacR-qPCR	95.8	96.8	P/P	50 - 175
2409749	BacR-qPCR	88.8		P	50 - 175
2409831	BacR-qPCR	68.9		P	50 - 175
2410171	BacR-qPCR	103		P	50 - 175
2410500	BacR-qPCR	84.7		P	50 - 175
2410501	BacR-qPCR	83.6		P	50 - 175
2410831	BacR-qPCR	90.2		P	50 - 175
2411303	BacR-qPCR	77.3		P	50 - 175
2411335	BacR-qPCR	86.5		P	50 - 175
2411336	BacR-qPCR	80.1		P	50 - 175
2411817	BacR-qPCR	97.2		P	50 - 175
2412131	BacR-qPCR	78.4		P	50 - 175
2412132	BacR-qPCR	78.2		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P429413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405725	DG3-qPCR	96.1	99.1	P/P	50 - 175
2406192	DG3-qPCR	90.9		P	50 - 175
2407441	DG3-qPCR	103		P	50 - 175
2407442	DG3-qPCR	100		P	50 - 175
2407443	DG3-qPCR	93.3		P	50 - 175
2408326	DG3-qPCR	84.0		P	50 - 175
2408541	DG3-qPCR	98.8		P	50 - 175
2408542	DG3-qPCR	101		P	50 - 175
2408863	DG3-qPCR	90.6		P	50 - 175
2409065	DG3-qPCR	104		P	50 - 175
2409323	DG3-qPCR	101		P	50 - 175
2409345	DG3-qPCR	105		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409346	DG3-qPCR	81.7	88.9	P/P	50 - 175
2409749	DG3-qPCR	90.7		P	50 - 175
2409831	DG3-qPCR	81.6		P	50 - 175
2410171	DG3-qPCR	89.1		P	50 - 175

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P429819

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2410500	DG3-qPCR	91.4		P	50 - 175
2410501	DG3-qPCR	101		P	50 - 175
2410831	DG3-qPCR	90.6		P	50 - 175
2411303	DG3-qPCR	86.9		P	50 - 175
2411335	DG3-qPCR	90.6		P	50 - 175
2411336	DG3-qPCR	102		P	50 - 175
2411817	DG3-qPCR	111		P	50 - 175
2412131	DG3-qPCR	107		P	50 - 175
2412132	DG3-qPCR	92.2		P	50 - 175

Quality Assurance Report
Precision

Reference Method: SM 10150 B
Batch ID: P429825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409601	Chlorophyll-a, Corrected	0.918	Sample	P	0 - 25
2409601	Chlorophyll-a, Uncorrected	1.57	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P429413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405725	HF183-qPCR	5.25	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P429819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409346	HF183-qPCR	5.35	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P429413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405725	GULL2-qPCR	15.5	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P429819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409346	GULL2-qPCR	1.73	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.3
Batch ID: P429819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409346	GFD-qPCR	7.68	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P429413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405725	BacR-qPCR	4.86	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P429819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409346	BacR-qPCR	1.06	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P429413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405725	DG3-qPCR	3.09	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P429819

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409346	DG3-qPCR	8.36	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2409345
Field Sample ID: G4SE0149

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	97.1	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	109	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	80.4	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	97.2	P	50 - 300

Lab Sample ID: 2409346
Field Sample ID: G4SE0155

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
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Quality Assurance Report Surrogates

Lab Sample ID: 2409346
Field Sample ID: G4SE0155

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300
SOP-PCR-1.0	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	110	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	118	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	115	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	125	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	115	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	115	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	95.2						0.918	
	Chlorophyll-a, Uncorrected							1.57	
SOP-PCR-1.0	HF183-qPCR	104	90.1	81.8	77.6	66.4			5.25
				74.6					
	HF183-qPCR	91.2	97.5	75.7	79.9	96.9			5.35
				86.4					
SOP-PCR-1.2	GULL2-qPCR	106	109	104	89.1	90.4			15.5
				93.3					
	GULL2-qPCR	98.1	107	85.8	84.3	69.8			1.73
				64.9					
SOP-PCR-1.3	GFD-qPCR	104	85.3	86.3	93.2	95.2			7.68
				95.9					
	GFD-qPCR	101	87.5	89.1	82.8				
SOP-PCR-1.4	BacR-qPCR	95.5	101	78.1	82.0	68.1			4.86
				74.3					
	BacR-qPCR	95.1	125	95.8	96.8	88.8			1.06
				68.9					
SOP-PCR-1.5	DG3-qPCR	86.9	103	96.1	99.1	90.9			3.09
				103					
	DG3-qPCR	83.8	107	81.7	88.9	90.7			8.36
				81.6					

Reference Method Descriptions

Method	Description	Associated Samples
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2409330, 2409331, 2409332
SM 9223 B Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2409336, 2409337, 2409338, 2409339, 2409340, 2409341
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2409345, 2409346
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2409345, 2409346
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2409345, 2409346
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2409345, 2409346

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2409345, 2409346

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10150 B	05/12/2023	05/12/2023 14:34	Tynan A Branch	05/24/2023 10:41	Callie Williams	2409330, 2409331, 2409332
SM 9223 B Quanti-Tray	05/12/2023	05/12/2023 14:42	Aidan Cronin	05/13/2023 11:14	Tynan A Branch	2409336, 2409337, 2409338, 2409339, 2409340, 2409341
SOP-PCR-1.0	05/12/2023	05/12/2023 13:35	Claudia Castro	05/25/2023 14:24	Roberta Tatti	2409345
	05/12/2023	05/12/2023 14:44	Madeline Gruver	06/06/2023 12:25	Jennifer Mihalic	2409346
SOP-PCR-1.2	05/12/2023	05/12/2023 13:35	Claudia Castro	06/06/2023 16:39	Madeline Gruver	2409345
	05/12/2023	05/12/2023 14:44	Madeline Gruver	06/14/2023 12:10	Jennifer Mihalic	2409346
SOP-PCR-1.3	05/12/2023	05/12/2023 13:35	Claudia Castro	06/09/2023 18:55	Madeline Gruver	2409345
	05/12/2023	05/12/2023 14:44	Madeline Gruver	06/13/2023 15:38	Madeline Gruver	2409346
SOP-PCR-1.4	05/12/2023	05/12/2023 13:35	Claudia Castro	05/26/2023 09:23	Roberta Tatti	2409345
	05/12/2023	05/12/2023 14:44	Madeline Gruver	06/07/2023 12:37	Jennifer Mihalic	2409346
SOP-PCR-1.5	05/12/2023	05/12/2023 13:35	Claudia Castro	06/01/2023 14:40	Jennifer Mihalic	2409345
	05/12/2023	05/12/2023 14:44	Madeline Gruver	06/07/2023 15:13	Jennifer Mihalic	2409346