

Biological Analysis Report

NE-DIST-2022-05-13-02

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **GTMNERR - Guana River Markers & Tracers**

Request ID: **RQ-2022-05-02-79**

Customer: **NE-DIST**

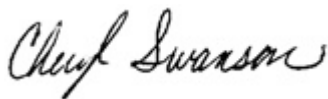
Project ID: **SMP**

Send Reports to:
GTM NERR
505 Guana River Rd
Ponte Vedra Beach, FL 32082
Attn: Niki Dix

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

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 27-JUN-2022 15:19



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 group are included in this report: 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: DEPGR3

Collection Date/Time: 05/12/2022 07:25

Field ID: GTMGR3NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326885	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P413726	

Sample Location: DEPGR2

Collection Date/Time: 05/12/2022 07:50

Field ID: GTMGRNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326886	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P413726	

Sample Location: DEPGR1

Collection Date/Time: 05/12/2022 08:14

Field ID: GTMGR1NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326887	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P413726	

Sample Location: DEPGL4

Collection Date/Time: 05/12/2022 10:03

Field ID: GTMGL4NUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326888	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	3.6E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	720	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P413726	

Sample Location: DEPGL3

Collection Date/Time: 05/12/2022 10:38

Field ID: GTMLMNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326889	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	3.6E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	720	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P413726	

Sample Location: DEPGL2

Collection Date/Time: 05/12/2022 11:23

Field ID: GTMGL2NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326890	SOP-PCR-1.0	HF183-purified-qPCR**	550	UJ	TSC/100 mL	P414978	LCS, SUR
	SOP-PCR-1.2	GULL2-purified-qPCR**	600	UJ	TSC/100 mL	P414978	LCS, SUR
	SOP-PCR-1.3	GFD-purified-qPCR**	1.07E+04	J	TSC/100 mL	P414978	LCS, SUR
	SOP-PCR-1.4	BacR-purified-qPCR**	510	UJ	TSC/100 mL	P414978	LCS, SUR
	SOP-PCR-1.5	DG3-purified-qPCR**	430	UJ	TSC/100 mL	P414978	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-1.2: Precision data unavailable for GULL2-purified-qPCR component. Refer to the Lab Analysis Report for an explanation of QC Codes.

SOP-PCR-1.3: Precision data unavailable for GFD-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: DEPGL1

Collection Date/Time: 05/12/2022 11:55

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326891	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	UJ	TSC/100 mL	P413726	SUR

Ref. Method and Comment:

SOP-PCR-1.5: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: GTMRNNUT

Collection Date/Time: 05/12/2022 08:33

Field ID: GTMRNNUT

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326892	SOP-PCR-1.0	HF183-qPCR**	3.3E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	3.6E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	1.3E+03	I	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	2.6E+03	U	TSC/100 mL	P413726	

Sample Location: GTMLSNU

Collection Date/Time: 05/12/2022 09:40

Field ID: GTMLSNU

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326893	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P413726	

Sample Location: GTMMKNUT

Collection Date/Time: 05/12/2022 13:58

Field ID: GTMMKNUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Field ID: GTMMKNUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2326894	SOP-PCR-1.0	HF183-qPCR**	1.7E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.2	GULL2-qPCR**	1.8E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.3	GFD-qPCR**	360	U	TSC/100 mL	P413726	
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P413726	
	SOP-PCR-1.5	DG3-qPCR**	1.3E+03	U	TSC/100 mL	P413726	

Non-Conformance Report

NCR ID: 9377

Event(s)	Job(s)	Sample(s)	Test(s)
NE-DIST-2022-05-13-02	TLH-2022-05-13-27	2326886	
NE-DIST-2022-05-13-02	TLH-2022-05-13-27	2326888	

NCR Type: SHIPPING/RECEIVING NCR Category: Receiving

Observation: No sample label on PCR containers, PCR and E8321-DI sample containers came in same ziplock bag. PCR samples labeled accordingly based on site information from corresponding E8321-DI samples.

Resolution: Supervisor was notified and an NCR was created.

Authorized by/Date: Kyle Klug 5/18/2022

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: SOP-PCR-1.0
Batch ID: P413726

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

Reference Method: SOP-PCR-1.0
Batch ID: P414978

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

Reference Method: SOP-PCR-1.2
Batch ID: P413726

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

Reference Method: SOP-PCR-1.2
Batch ID: P414978

Component	Result	Code	Units
GULL2-purified-qPCR	600	U	TSC/100 mL

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.3
Batch ID: P413726

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

Reference Method: SOP-PCR-1.3
Batch ID: P414978

Component	Result	Code	Units
GFD-purified-qPCR	120	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P413726

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

Reference Method: SOP-PCR-1.4
Batch ID: P414978

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

Reference Method: SOP-PCR-1.5
Batch ID: P413726

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

Reference Method: SOP-PCR-1.5
Batch ID: P414978

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P413726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	97.1	118	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P414978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	85.3	15.0	P/F	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P413726

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

Reference Method: SOP-PCR-1.2
Batch ID: P413726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	105	121	P/P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P414978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-purified-qPCR	75.9	10.4	P/F	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P413726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-qPCR	103	119	P/P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P414978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	68.0	12.5	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P413726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	83.8	54.6	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P414978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-purified-qPCR	86.8	5.12	P/F	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P413726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-qPCR	57.1	53.9	P/P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P414978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
DG3-purified-qPCR	83.2	5.65	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P413726

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

Reference Method: SOP-PCR-1.0
Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326070	HF183-qPCR	88.7	94.7	P/P	50 - 175
2326885	HF183-qPCR	103		P	50 - 175
2326886	HF183-qPCR	102		P	50 - 175
2326887	HF183-qPCR	93.9		P	50 - 175
2326888	HF183-qPCR	89.6		P	50 - 175
2326889	HF183-qPCR	80.2		P	50 - 175
2326891	HF183-qPCR	82.5		P	50 - 175
2326892	HF183-qPCR	82.1		P	50 - 175
2326893	HF183-qPCR	85.2		P	50 - 175
2326894	HF183-qPCR	84.9		P	50 - 175
2327336	HF183-qPCR	86.7		P	50 - 175
2327337	HF183-qPCR	101		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P414978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326890	HF183-purified-qPCR	82.6		P	50 - 175
2330313	HF183-purified-qPCR	92.5		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326070	GULL2-qPCR	88.9	92.1	P/P	50 - 300
2326885	GULL2-qPCR	94.5		P	50 - 300
2326886	GULL2-qPCR	91.6		P	50 - 300
2326887	GULL2-qPCR	81.0		P	50 - 300
2326888	GULL2-qPCR	84.6		P	50 - 300
2326889	GULL2-qPCR	73.9		P	50 - 300
2326891	GULL2-qPCR	93.4		P	50 - 300
2326892	GULL2-qPCR	78.2		P	50 - 300
2326893	GULL2-qPCR	68.3		P	50 - 300
2326894	GULL2-qPCR	84.1		P	50 - 300
2327336	GULL2-qPCR	72.1		P	50 - 300
2327337	GULL2-qPCR	81.1		P	50 - 300

Reference Method: SOP-PCR-1.2
Batch ID: P414978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326890	GULL2-purified-qPCR	92.9		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326070	GFD-qPCR	99.4	94.6	P/P	50 - 175
2326885	GFD-qPCR	102		P	50 - 175
2326886	GFD-qPCR	103		P	50 - 175
2326887	GFD-qPCR	95.4		P	50 - 175
2326888	GFD-qPCR	93.4		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3

Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326889	GFD-qPCR	92.5		P	50 - 175
2326891	GFD-qPCR	95.0		P	50 - 175
2326892	GFD-qPCR	92.7		P	50 - 175
2326893	GFD-qPCR	88.9		P	50 - 175
2326894	GFD-qPCR	92.6		P	50 - 175
2327336	GFD-qPCR	93.4		P	50 - 175
2327337	GFD-qPCR	107		P	50 - 175

Reference Method: SOP-PCR-1.3

Batch ID: P414978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326890	GFD-purified-qPCR	73.1		P	50 - 175
2330313	GFD-purified-qPCR	82.6		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326070	BacR-qPCR	74.0	75.1	P/P	50 - 175
2326885	BacR-qPCR	91.1		P	50 - 175
2326886	BacR-qPCR	75.4		P	50 - 175
2326887	BacR-qPCR	68.3		P	50 - 175
2326888	BacR-qPCR	71.4		P	50 - 175
2326889	BacR-qPCR	61.9		P	50 - 175
2326891	BacR-qPCR	77.2		P	50 - 175
2326892	BacR-qPCR	72.8		P	50 - 175
2326893	BacR-qPCR	60.1		P	50 - 175
2326894	BacR-qPCR	70.5		P	50 - 175
2327336	BacR-qPCR	66.7		P	50 - 175
2327337	BacR-qPCR	82.6		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P414978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326890	BacR-purified-qPCR	79.1		P	50 - 175
2330313	BacR-purified-qPCR	90.2		P	50 - 175

Reference Method: SOP-PCR-1.5

Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326070	DG3-qPCR	56.2	56.0	P/P	50 - 175
2326885	DG3-qPCR	59.4		P	50 - 175
2326886	DG3-qPCR	65.4		P	50 - 175
2326887	DG3-qPCR	56.1		P	50 - 175
2326888	DG3-qPCR	57.5		P	50 - 175
2326889	DG3-qPCR	53.3		P	50 - 175
2326891	DG3-qPCR	54.1		P	50 - 175
2326892	DG3-qPCR	55.8		P	50 - 175
2326893	DG3-qPCR	51.7		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.5
Batch ID: P413726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326894	DG3-qPCR	56.1		P	50 - 175
2327336	DG3-qPCR	54.5		P	50 - 175
2327337	DG3-qPCR	64.4		P	50 - 175

Reference Method: SOP-PCR-1.5
Batch ID: P414978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326890	DG3-purified-qPCR	82.2		P	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P413726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326070	HF183-qPCR	6.57	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P413726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326070	GULL2-qPCR	3.53	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P413726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326070	GFD-qPCR	4.97	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P413726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326070	BacR-qPCR	1.57	Spike	P	0 - 25

Reference Method: SOP-PCR-1.5
Batch ID: P413726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326070	DG3-qPCR	0.294	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 2326885

Field Sample ID: GTMGR3NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	124	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	124	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	119	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	144	P	50 - 300

Lab Sample ID: 2326886

Field Sample ID: GTMGRNUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	118	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	125	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	127	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	124	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	104	P	50 - 300

Lab Sample ID: 2326887

Field Sample ID: GTMGR1NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	123	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	123	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	115	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	126	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	127	P	50 - 300

Lab Sample ID: 2326888

Field Sample ID: GTMGL4NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	116	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	122	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	126	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	117	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	129	P	50 - 300

Lab Sample ID: 2326889

Field Sample ID: GTMLMNUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	93.1	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	121	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	106	P	50 - 300

Lab Sample ID: 2326890

Field Sample ID: GTMGL2NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	7.58	F	50 - 300
SOP-PCR-1.2	SKETA-qPCR	8.96	F	30 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 2326890
Field Sample ID: GTMGL2NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.3	SKETA-qPCR	7.46	F	30 - 300
SOP-PCR-1.4	SKETA-qPCR	9.32	F	30 - 300
SOP-PCR-1.5	SKETA-qPCR	7.36	F	50 - 300

Lab Sample ID: 2326891
Field Sample ID: GTMGL1NUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	133	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	113	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	139	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	118	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	15.7	F	50 - 300

Lab Sample ID: 2326892
Field Sample ID: GTMRNNUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	115	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	119	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	123	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	126	P	50 - 300

Lab Sample ID: 2326893
Field Sample ID: GTMLSNUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	112	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	110	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	123	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	143	P	50 - 300

Lab Sample ID: 2326894
Field Sample ID: GTMMKNUT

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	130	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	116	P	50 - 300
SOP-PCR-1.3	SKETA-qPCR	127	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	106	P	50 - 300
SOP-PCR-1.5	SKETA-qPCR	128	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
SOP-PCR-1.0	HF183-purified-qPCR	15.0	85.3	92.5	82.6	SMP	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	118	97.1	88.7	94.7	103			6.57
SOP-PCR-1.2	GULL2-purified-qPCR	10.4	75.9	92.9					
	GULL2-qPCR	121	105	88.9	92.1	94.5			3.53
SOP-PCR-1.3	GFD-purified-qPCR	12.5	68.0	73.1	82.6				
	GFD-qPCR	119	103	99.4	94.6	102			4.97
SOP-PCR-1.4	BacR-purified-qPCR	5.12	86.8	90.2	79.1				
	BacR-qPCR	54.6	83.8	74.0	75.1	91.1			1.57
SOP-PCR-1.5	DG3-purified-qPCR	5.65	83.2	82.2					
	DG3-qPCR	53.9	57.1	56.2	56.0	59.4			0.294
				65.4					

Reference Method Descriptions

Method	Description	Associated Samples
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2326890
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2326890
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2326890
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2326890
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.5	Detection and quantification of canine-specific DG3 Bacteroides genetic marker with quantitative polymerase chain reaction	2326890

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SOP-PCR-1.0	05/13/2022	05/13/2022 14:00	Claudia Castro	06/09/2022 16:54	Jennifer Mihalic	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.2	05/13/2022	05/13/2022 14:00	DeAsia Armster	06/13/2022 08:48	DeAsia Armster	2326890
	05/13/2022	05/13/2022 14:00	Claudia Castro	06/14/2022 13:20	Roberta Tatti	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.3	05/13/2022	05/13/2022 14:00	DeAsia Armster	06/13/2022 13:09	Roberta Tatti	2326890
	05/13/2022	05/13/2022 14:00	Claudia Castro	06/13/2022 17:55	Jennifer Mihalic	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.4	05/13/2022	05/13/2022 14:00	DeAsia Armster	06/13/2022 13:09	Roberta Tatti	2326890
	05/13/2022	05/13/2022 14:00	Claudia Castro	06/10/2022 09:52	Roberta Tatti	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
SOP-PCR-1.5	05/13/2022	05/13/2022 14:00	DeAsia Armster	06/13/2022 10:13	DeAsia Armster	2326890
	05/13/2022	05/13/2022 14:00	Claudia Castro	06/10/2022 12:20	Roberta Tatti	2326885, 2326886, 2326887, 2326888, 2326889, 2326891, 2326892, 2326893, 2326894
	05/13/2022	05/13/2022 14:00	DeAsia Armster	06/13/2022 08:48	DeAsia Armster	2326890