

Biological Analysis Report

SW-DIST-2019-06-27-01

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

Overflow Analyses Performed By:
Benchmark Environmental, Inc.
1711 12th Street East
Palmetto, FL 34221
DOH Accreditation E84167

Event Description: **SMP - Gap Cr, Nonsense, Braden, Rattlesnake, Cedar**
Request ID: **RQ-2019-06-24-03**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Date Certified: 29-JUL-2019 12:11



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: GAP CREEK @ 45TH ST

Collection Date/Time: 06/26/2019 12:05

Field ID: G2SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098806	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.9		ug/L	P366904	
		Phaeophytin-a	2.2	I	ug/L	P366904	
		Chlorophyll-a, Uncorrected	5.4		ug/L	P366904	
2098810	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P366693	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P366693	
	SOP-PCR-1.3	GFD-purified-qPCR**	290	I	TSC/100 mL	P367347	MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P366693	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P366402	
2098817	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	528		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): 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-1.4: Precision data unavailable for Analysis Batch A92844

Sample Location: GAP CREEK @ 37th ST. EAST

Collection Date/Time: 06/26/2019 11:35

Field ID: G2SW0110

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098807	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.2		ug/L	P366909	
		Phaeophytin-a	2.3		ug/L	P366909	
		Chlorophyll-a, Uncorrected	3.6		ug/L	P366909	
2098811	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P366693	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P366693	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	UJ	TSC/100 mL	P367347	MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P366693	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P366402	
2098818	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	487		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A92844

Sample Location: GAP CREEK @ 37th ST. EAST

Collection Date/Time: 06/26/2019 11:40

Field ID: G2SW0110_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098808	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.6		ug/L	P366909	
		Phaeophytin-a	2.1	I	ug/L	P366909	
		Chlorophyll-a, Uncorrected	3.9		ug/L	P366909	
2098812	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P366693	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P366693	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	UJ	TSC/100 mL	P367347	MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P366693	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold			P366402	
2098819	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	537		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A92844

Sample Location: FIELD_BLANK

Collection Date/Time: 06/26/2019 11:50

Field ID: FB 06262019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098809	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.76	U	ug/L	P366909	
		Phaeophytin-a	0.82	U	ug/L	P366909	
		Chlorophyll-a, Uncorrected	0.55	U	ug/L	P366909	
2098813	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold			P366402	
2098820	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	10	U	MPN/100 mL		

Sample Location: BRADEN RIVER @ CYPRESS BEND PARK

Collection Date/Time: 06/26/2019 10:25

Field ID: G2SW0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098814	SOP-PCR-1.0	HF183-purified-qPCR**	16	UJ	GEU/100 mL	P366837	LCS, SUR
	SOP-PCR-1.4	BacR-purified-qPCR**	170	UJ	TSC/100 mL	P366837	LCS, SUR
2098821	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	10		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.0: Precision data unavailable for Analysis Batch A92850. Quality control failure(s) observed. See QA report for details.

SOP-PCR-1.4: Quality control failure(s) observed. See QA report for details. Precision data unavailable for Analysis Batch A92859

Sample Location: NONSENSE @ TARA PRESERVE

Collection Date/Time: 06/26/2019 10:40

Field ID: G2SW0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098815	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P366320	LCS
	SOP-PCR-1.4	BacR-qPCR**	1.0E+03	U	TSC/100 mL	P366320	
2098822	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	97		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A92577

Sample Location: CEDAR CREEK @ SADDLEHORN

Collection Date/Time: 06/26/2019 11:05

Field ID: G2SW0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2098816	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P366320	LCS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P366320	
2098823	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	512		MPN/100 mL		

Ref. Method and Comment:

SOP-PCR-1.4: Precision data unavailable for Analysis Batch A92577

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P366904

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.69	U	ug/L
Chlorophyll-a, Uncorrected	0.50	U	ug/L
Phaeophytin-a	0.75	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P366909

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.69	U	ug/L
Chlorophyll-a, Uncorrected	0.50	U	ug/L
Phaeophytin-a	0.75	U	ug/L

Reference Method: SOP-PCR-1.0
Batch ID: P366320

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.0
Batch ID: P366693

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.0
Batch ID: P366837

Component	Result	Code	Units
HF183-purified-qPCR	47	U	GEU/100 mL

Reference Method: SOP-PCR-1.2
Batch ID: P366693

Component	Result	Code	Units
GULL2-qPCR	1.7E+04	U	TSC/100 mL

Reference Method: SOP-PCR-1.3
Batch ID: P367347

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P366320

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

Reference Method: SOP-PCR-1.4
Batch ID: P366693

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

Reference Method: SOP-PCR-1.4
Batch ID: P366837

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P366904

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	90.4		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P366909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	94.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P366320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	111	205	P/F	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P366693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	131	174	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P366837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-purified-qPCR	131	21.1	P/F	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P366693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	220	197	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P367347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	106	54.0	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P366320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	86.3	86.4	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P366693

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	96.9	71.0	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.4
Batch ID: P366837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-purified-qPCR	91.1	22.4	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P366320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095801	HF183-qPCR	80.3		P	50 - 175
2098564	HF183-qPCR	85.8		P	50 - 175
2098709	HF183-qPCR	104	101	P/P	50 - 175
2098783	HF183-qPCR	90.4		P	50 - 175
2098815	HF183-qPCR	93.6		P	50 - 175
2098816	HF183-qPCR	93.5		P	50 - 175
2099128	HF183-qPCR	92.0		P	50 - 175
2099129	HF183-qPCR	87.8		P	50 - 175
2099217	HF183-qPCR	90.5		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P366693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098288	HF183-qPCR	105		P	50 - 175
2098810	HF183-qPCR	119		P	50 - 175
2098811	HF183-qPCR	115		P	50 - 175
2098812	HF183-qPCR	116		P	50 - 175
2098958	HF183-qPCR	102	97.5	P/P	50 - 175
2100818	HF183-qPCR	88.3		P	50 - 175
2100819	HF183-qPCR	117		P	50 - 175
2101175	HF183-qPCR	118		P	50 - 175
2101341	HF183-qPCR	107		P	50 - 175
2101342	HF183-qPCR	95.8		P	50 - 175
2101343	HF183-qPCR	101		P	50 - 175
2101411	HF183-qPCR	99.2		P	50 - 175
2101593	HF183-qPCR	79.5		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P366837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098814	HF183-purified-qPCR	136		P	50 - 175
2099218	HF183-purified-qPCR	127		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P366693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098288	GULL2-qPCR	175		P	50 - 300
2098810	GULL2-qPCR	121		P	50 - 300
2098811	GULL2-qPCR	177		P	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2

Batch ID: P366693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098812	GULL2-qPCR	178		P	50 - 300
2100818	GULL2-qPCR	124		P	50 - 300
2101175	GULL2-qPCR	146		P	50 - 300
2101593	GULL2-qPCR	164		P	50 - 300

Reference Method: SOP-PCR-1.3

Batch ID: P367347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098288	GFD-purified-qPCR	204		F	50 - 175
2098810	GFD-purified-qPCR	170		P	50 - 175
2098811	GFD-purified-qPCR	217		F	50 - 175
2098812	GFD-purified-qPCR	204		F	50 - 175
2099579	GFD-purified-qPCR	195		F	50 - 175
2100818	GFD-purified-qPCR	221		F	50 - 175
2103315	GFD-purified-qPCR	247	230	F/F	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P366320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2095801	BacR-qPCR	59.9		P	50 - 175
2098815	BacR-qPCR	78.6		P	50 - 175
2098816	BacR-qPCR	83.1		P	50 - 175
2099128	BacR-qPCR	62.2		P	50 - 175
2099129	BacR-qPCR	81.8		P	50 - 175
2099217	BacR-qPCR	61.9		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P366693

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098288	BacR-qPCR	80.2		P	50 - 175
2098810	BacR-qPCR	80.4		P	50 - 175
2098811	BacR-qPCR	91.9		P	50 - 175
2098812	BacR-qPCR	89.9		P	50 - 175
2100818	BacR-qPCR	65.3		P	50 - 175
2101175	BacR-qPCR	85.9		P	50 - 175
2101341	BacR-qPCR	86.2		P	50 - 175
2101342	BacR-qPCR	70.6		P	50 - 175
2101343	BacR-qPCR	75.1		P	50 - 175
2101593	BacR-qPCR	68.9		P	50 - 175

Reference Method: SOP-PCR-1.4

Batch ID: P366837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2098814	BacR-purified-qPCR	97.4		P	50 - 175
2099218	BacR-purified-qPCR	79.1		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P366904

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098730	Chlorophyll-a, Corrected	2.64	Sample	P	0 - 25
2098730	Chlorophyll-a, Uncorrected	3.31	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P366909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098863	Chlorophyll-a, Corrected	12.1	Sample	P	0 - 25
2098863	Chlorophyll-a, Uncorrected	11.0	Sample	P	0 - 25
2098863	Phaeophytin-a	4.02	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P366320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098709	HF183-qPCR	2.67	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P366693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2098958	HF183-qPCR	4.53	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P366693

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2101595	GULL2-qPCR	17.5	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P367347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103315	GFD-purified-qPCR	7.21	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2098810
Field Sample ID: G2SW0030

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

Lab Sample ID: 2098810
Field Sample ID: G2SW0030

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	92.7	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	97.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	99.2	P	50 - 300

Lab Sample ID: 2098811
Field Sample ID: G2SW0110

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	99.9	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	108	P	50 - 300

Lab Sample ID: 2098812
Field Sample ID: G2SW0110_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	104	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	111	P	50 - 300

Lab Sample ID: 2098814
Field Sample ID: G2SW0044

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	19.5	F	30 - 300
SOP-PCR-1.4	SKETA-qPCR	16.0	F	30 - 300

Lab Sample ID: 2098815
Field Sample ID: G2SW0015

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	103	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	110	P	50 - 300

Lab Sample ID: 2098816
Field Sample ID: G2SW0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	107	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	113	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	90.4			2.64	
	Chlorophyll-a, Corrected	94.2			12.1	
	Chlorophyll-a, Uncorrected				3.31	
	Chlorophyll-a, Uncorrected				11.0	
	Phaeophytin-a				4.02	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-purified-qPCR	21.1	131	136	127				
	HF183-qPCR	205	111	85.8	104	101			2.67
				90.4					
SOP-PCR-1.2	HF183-qPCR	174	131	119	115	116			4.53
				102					
	GULL2-qPCR	197	220	121	177	178			17.5
SOP-PCR-1.3				175					
	GFD-purified-qPCR	54.0	106	247	230	204			7.21
				170					
SOP-PCR-1.4	BacR-purified-qPCR	22.4	91.1	97.4	79.1				
	BacR-qPCR	86.4	86.3	78.6	83.1	62.2			
				81.8					
	BacR-qPCR	96.9	71.0	80.4	91.9	89.9			
				65.3					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2098806, 2098807, 2098808, 2098809
SM 9223 B Quanti-Tray / E84167	E. coli by Colilert/QT by BEA in Palmetto	2098817, 2098818, 2098819, 2098820, 2098821, 2098822, 2098823
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2098810, 2098811, 2098812, 2098815, 2098816
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2098814
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2098810, 2098811, 2098812
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2098810, 2098811, 2098812
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2098810, 2098811, 2098812, 2098815, 2098816
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2098814
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2098810, 2098811, 2098812, 2098813

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	06/27/2019	06/27/2019 14:24	Yuliya Danyuk	07/09/2019 08:20	Peterson Janvier	2098806
	06/27/2019	06/27/2019 14:24	Yuliya Danyuk	07/09/2019 09:55	Peterson Janvier	2098807, 2098808, 2098809
SM 9223 B Quanti-Tray	06/26/2019	06/26/2019 13:20		06/27/2019 14:01	Benchmark EnviroAnalytical - Palmetto	2098817, 2098818, 2098819, 2098820, 2098821, 2098822, 2098823
SOP-PCR-1.0	06/27/2019	06/27/2019 14:35	Angela Smith	07/02/2019 11:37	Mailin Lopez	2098815, 2098816
	06/27/2019	06/27/2019 14:35	Mailin Lopez	07/17/2019 11:26	Mailin Lopez	2098814
	06/27/2019	06/27/2019 14:35	Sarah Menz	07/17/2019 08:29	Mailin Lopez	2098810, 2098811, 2098812
SOP-PCR-1.2	06/27/2019	06/27/2019 14:35	Sarah Menz	07/18/2019 13:00	Mailin Lopez	2098810, 2098811, 2098812
SOP-PCR-1.3	06/27/2019	06/27/2019 14:35	Angela Smith	07/25/2019 11:09	Mailin Lopez	2098810, 2098811, 2098812
SOP-PCR-1.4	06/27/2019	06/27/2019 14:35	Angela Smith	07/05/2019 14:43	Mailin Lopez	2098815, 2098816
	06/27/2019	06/27/2019 14:35	Mailin Lopez	07/18/2019 09:47	Mailin Lopez	2098814
	06/27/2019	06/27/2019 14:35	Sarah Menz	07/17/2019 14:49	Mailin Lopez	2098810, 2098811, 2098812
SOP-PCR-4.0	06/27/2019	06/27/2019 14:35	Angela Smith	07/05/2019 08:40	Sarah Menz	2098810, 2098811, 2098812, 2098813