

Biological Analysis Report

WAS-SECT-2018-01-10-01

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

Event Description: **Sand, Black, 8, AJ, Harbinwood, Swamp, Salem**

Request ID: **RQ-2018-01-08-11**

Customer: **WAS-SECT**

Project ID: **SMP**

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This Report replaces the previous Report Serial Number: 0102440

Report Comment: Removed I-qualifier on microbiology results reported at the MDL = PQL to assist with WIN database cleanup.

Revision certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 05-NOV-2020 16:52



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: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958487	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.9		ug/L	P338435	
		Phaeophytin-a	0.93	I	ug/L	P338435	
		Chlorophyll-a, Uncorrected	3.6		ug/L	P338435	

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.

Sample Location: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958493	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1.0		MPN/100 mL	P338182	

Sample Location: HARBINWOOD ESTATES DRAIN

Collection Date/Time: 01/10/2018 12:10

Field ID: G1WA0034

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958502	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: SALEM BRANCH DOWNSTREAM OF SR 159

Collection Date/Time: 01/10/2018 10:55

Field ID: G1WA0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958494	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	461.1		MPN/100 mL	P338182	

Sample Location: SALEM BRANCH DOWNSTREAM OF SR 159

Collection Date/Time: 01/10/2018 10:55

Field ID: G1WA0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958503	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P338707	
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	U	TSC/100 mL	P338707	
	SOP-PCR-1.3	GFD-purified-qPCR**	450	I J	TSC/100 mL	P338789	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P338707	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

SOP-PCR-1.2: No amplification of GULL2 marker.

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

SOP-PCR-1.4: No amplification of BACR marker. Precision data unavailable for Analysis Batch A82021.

Sample Location: SWAMP CREEK UPSTREAM OF RAILROAD

Collection Date/Time: 01/10/2018 11:20

Field ID: G1WA0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958488	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.0	I	ug/L	P338435	
		Phaeophytin-a	0.40	U	ug/L	P338435	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P338435	

Field ID: G1WA0052

Matrix: W-SURF-FRH

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

Sample Location: SWAMP CREEK UPSTREAM OF RAILROAD

Collection Date/Time: 01/10/2018 11:20

Field ID: G1WA0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1958495	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	172.3		MPN/100 mL	P338182	
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Sample Location: SWAMP CREEK UPSTREAM OF RAILROAD

Collection Date/Time: 01/10/2018 11:20

Field ID: G1WA0052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1958500	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P338048	
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	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
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Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: SAND POND MIDDLE

Collection Date/Time: 01/10/2018 09:20

Field ID: G1WA0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1958489	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.2		ug/L	P338435	
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		Phaeophytin-a	0.40	U	ug/L	P338435	
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		Chlorophyll-a, Uncorrected	2.4		ug/L	P338435	
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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.

Sample Location: SAND POND MIDDLE

Collection Date/Time: 01/10/2018 09:20

Field ID: G1WA0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1958496	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	7.4		MPN/100 mL	P338182	
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Sample Location: FREEMAN CREEK UPSTREAM OF SR 267
(BLOXHAM CUTOFF)

Collection Date/Time: 01/10/2018 09:59

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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1958490	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P338435	
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		Phaeophytin-a	0.44	I	ug/L	P338435	
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		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P338435	
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Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 0.55 U for Chl-a Corrected, 0.40 U for Chl-a Uncorrected, and 0.40 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: FREEMAN CREEK UPSTREAM OF SR 267
(BLOXHAM CUTOFF)

Collection Date/Time: 01/10/2018 09:59

Field ID: G1WA0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958497	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	34.1		MPN/100 mL	P338182	

Sample Location: BLACK CREEK UPSTREAM OF BLOXHAM CUTOFF

Collection Date/Time: 01/10/2018 08:50

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958491	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P338435	
		Phaeophytin-a	0.40	U	ug/L	P338435	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P338435	

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.

Sample Location: BLACK CREEK UPSTREAM OF BLOXHAM CUTOFF

Collection Date/Time: 01/10/2018 08:50

Field ID: G1WA0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958498	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	139.6		MPN/100 mL	P338182	

Sample Location: EIGHT MILE POND MIDDLE

Collection Date/Time: 01/10/2018 08:10

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958492	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14		ug/L	P338435	
		Phaeophytin-a	3.6		ug/L	P338435	
		Chlorophyll-a, Uncorrected	17		ug/L	P338435	

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.

Sample Location: EIGHT MILE POND MIDDLE

Collection Date/Time: 01/10/2018 08:10

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958499	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	15.8		MPN/100 mL	P338182	

Sample Location: EIGHT MILE POND MIDDLE

Collection Date/Time: 01/10/2018 08:10

Field ID: G1WA0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1958501	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P338048	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

Quality Assurance Report Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P338435

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SM 9223 Quanti-Tray
Batch ID: P338182

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

Reference Method: SOP-PCR-1.0
Batch ID: P338048

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

Reference Method: SOP-PCR-1.0
Batch ID: P338707

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

Reference Method: SOP-PCR-1.2
Batch ID: P338707

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

Reference Method: SOP-PCR-1.3
Batch ID: P338789

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

Reference Method: SOP-PCR-1.4
Batch ID: P338707

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P338435

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	105		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	127	105	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	122	114	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	120	82.3	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P338789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	12.4	123	F/P	50 - 175
GFD-purified-qPCR	8.57	181	F/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	111	141	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1951105	HF183-qPCR	84.2		P	50 - 175
1951106	HF183-qPCR	86.2		P	50 - 175
1951205	HF183-qPCR	89.1		P	50 - 175
1954686	HF183-qPCR	92.1		P	50 - 175
1954688	HF183-qPCR	89.1		P	50 - 175
1954689	HF183-qPCR	85.8		P	50 - 175
1955135	HF183-qPCR	86.4		P	50 - 175
1958500	HF183-qPCR	93.2		P	50 - 175
1958501	HF183-qPCR	72.2	75.0	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958064	HF183-qPCR	108		P	50 - 175
1958092	HF183-qPCR	94.3		P	50 - 175
1958093	HF183-qPCR	86.7		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958094	HF183-qPCR	96.8		P	50 - 175
1958503	HF183-qPCR	83.7		P	50 - 175
1958586	HF183-qPCR	60.1		P	50 - 175
1960208	HF183-qPCR	92.9		P	50 - 175
1960209	HF183-qPCR	83.9		P	50 - 175
1960210	HF183-qPCR	84.2		P	50 - 175
1961509	HF183-qPCR	93.7		P	50 - 175
1962140	HF183-qPCR	89.4	92.6	P/P	50 - 175
1963376	HF183-qPCR	97.2		P	50 - 175
1963584	HF183-qPCR	86.0		P	50 - 175

Reference Method: SOP-PCR-1.2
 Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958503	GULL2-qPCR	63.7		P	50 - 300

Reference Method: SOP-PCR-1.3
 Batch ID: P338789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958503	GFD-purified-qPCR	262		F	50 - 175
1960445	GFD-purified-qPCR	206		F	50 - 175
1962140	GFD-purified-qPCR	166	189	P/F	50 - 175
1963189	GFD-purified-qPCR	149		P	50 - 175
1963190	GFD-purified-qPCR	152		P	50 - 175
1964711	GFD-purified-qPCR	269		F	50 - 175
1965800	GFD-purified-qPCR	254		F	50 - 175
1965801	GFD-purified-qPCR	215		F	50 - 175
1967510	GFD-purified-qPCR	159		P	50 - 175
1967511	GFD-purified-qPCR	108		P	50 - 175
1967512	GFD-purified-qPCR	67.2		P	50 - 175
1967513	GFD-purified-qPCR	0.0		F	50 - 175
1967514	GFD-purified-qPCR	193		F	50 - 175
1967891	GFD-purified-qPCR	58.8		P	50 - 175
1967892	GFD-purified-qPCR	129		P	50 - 175
1967893	GFD-purified-qPCR	120		P	50 - 175
1967894	GFD-purified-qPCR	120		P	50 - 175
1967895	GFD-purified-qPCR	259		F	50 - 175

Reference Method: SOP-PCR-1.4
 Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958094	BacR-qPCR	76.7		P	50 - 175
1958503	BacR-qPCR	85.5		P	50 - 175
1958586	BacR-qPCR	82.5		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 9223 Quanti-Tray
Batch ID: P338182

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958111	Escherichia Coli-Quanti-Tray	0.0	Sample	P	0 - 80
1958565	Escherichia Coli-Quanti-Tray	11.4	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
Batch ID: P338048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1958501	HF183-qPCR	3.82	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	HF183-qPCR	3.51	Spike	P	0 - 25

Reference Method: SOP-PCR-1.2
Batch ID: P338707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967510	GULL2-qPCR	10.3	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P338789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	GFD-purified-qPCR	13.5	Spike	P	0 - 25

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

Quality Assurance Report Surrogates

Lab Sample ID: 1958500
Field Sample ID: G1WA0052

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	102	P	50 - 300

Lab Sample ID: 1958501
Field Sample ID: G1WA0024

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	94.0	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1958503
Field Sample ID: G1WA0053

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	94.7	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP		MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	105								
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray							0.0	11.4	
SOP-PCR-1.0	HF183-qPCR	105	127	89.1	93.2	72.2				3.82
	HF183-qPCR	114	122	75.0	93.7	92.6				3.51
SOP-PCR-1.2	GULL2-qPCR	82.3	120	63.7						10.3
SOP-PCR-1.3	GFD-purified-qPCR	12.4	181	8.57	166	189	149			13.5
		123		152						
SOP-PCR-1.4	BacR-qPCR	141	111	76.7	85.5	82.5				

Reference Method Descriptions

Method	Description	Associated Samples
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1958487, 1958488, 1958489, 1958490, 1958491, 1958492
SM 9223 Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	1958493, 1958494, 1958495, 1958496, 1958497, 1958498, 1958499
SOP-PCR-1.0	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1958500, 1958501, 1958503
SOP-PCR-1.2	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	1958503
SOP-PCR-1.3	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1958503
SOP-PCR-1.4	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1958503
SOP-PCR-4.0	Preparation of Samples by Filtration and held for qPCR Analysis	1958500, 1958501, 1958502, 1958503

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/10/2018	01/10/2018 14:47	Cathy Sherrer	01/17/2018 14:40	Jennifer Mihalic	1958487, 1958488, 1958489, 1958490, 1958491, 1958492
SM 9223 Quanti-Tray	01/10/2018	01/10/2018 15:20	Peterson Janvier	01/11/2018 11:00	Amelia G. Rankin	1958493, 1958494, 1958495, 1958496, 1958497, 1958498, 1958499
SOP-PCR-1.0	01/10/2018	01/11/2018 09:00	Avril Wood-McGrath	02/07/2018 10:07	Sarah Menz	1958503
	01/10/2018	01/11/2018 09:00	Puja Jasrotia	01/17/2018 10:29	Sarah Menz	1958500, 1958501
SOP-PCR-1.2	01/10/2018	01/11/2018 09:00	Avril Wood-McGrath	02/20/2018 14:50	Sarah Menz	1958503
SOP-PCR-1.3	01/10/2018	01/11/2018 09:00	Mailin Lopez	02/21/2018 09:10	Sarah Menz	1958503
SOP-PCR-1.4	01/10/2018	01/11/2018 09:00	Avril Wood-McGrath	02/13/2018 12:05	Sarah Menz	1958503
SOP-PCR-4.0	01/10/2018	01/11/2018 09:00	Avril Wood-McGrath	01/29/2018 09:48	Puja Jasrotia	1958500, 1958501, 1958502, 1958503