

Biological Analysis Report

NE-DIST-2018-08-31-01

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

Overflow Analyses Performed By:
ALS Environmental - Jacksonville
9143 Philips Highway, Suite 200
Jacksonville, FL 32256
DOH Accreditation E82502

Event Description: **bmap tribs 2**
Request ID: **RQ-2018-08-27-19**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 28-SEP-2018 17:04



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 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: Terrapin Creek at Faye Road

Collection Date/Time: 08/30/2018 08:45

Field ID: 20030653

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021259	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.4	A	ug/L	P351525	
		Phaeophytin-a	1.3	I	ug/L	P351525	
		Chlorophyll-a, Uncorrected	5.2	A	ug/L	P351525	
2021264	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	404		MPN/100 mL		
2021269	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 0.93 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: Trout River at Old Kings Rd

Collection Date/Time: 08/30/2018 10:20

Field ID: 20030753

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021260	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P351525	
		Phaeophytin-a	0.40	U	ug/L	P351525	
		Chlorophyll-a, Uncorrected	0.63	I	ug/L	P351525	
2021265	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	318		MPN/100 mL		
2021270	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

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: Moncrief CR @ 21st St.

Collection Date/Time: 08/30/2018 10:50

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021256	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.65	I	ug/L	P351525	
		Phaeophytin-a	0.40	U	ug/L	P351525	
		Chlorophyll-a, Uncorrected	0.79	I	ug/L	P351525	
2021261	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	384		MPN/100 mL		
2021266	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

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: Goodbys CR Above West Branch at San Clerc.

Collection Date/Time: 08/30/2018 11:45

Field ID: 20030891

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2021257	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1		ug/L	P351525	
		Phaeophytin-a	0.60	I	ug/L	P351525	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P351525	
2021262	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	727		MPN/100 mL		
2021267	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P351148	MS, RPD
	SOP-PCR-1.2	GULL2-qPCR**	1.7E+04	U	TSC/100 mL	P351422	
	SOP-PCR-1.3	GFD-purified-qPCR**	170	U	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	3.0E+03	U	TSC/100 mL	P351422	LCS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Collection Date/Time: 08/30/2018 11:25

Field ID: 20030537

Matrix: W-SURF-FRH

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.

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P351525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	86.8		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P351148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	94.9	137	P/P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P351422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	135	160	P/P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P351335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	131	41.0	P/F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P351422

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	101	244	P/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P351148

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017120	HF183-qPCR	62.4		P	50 - 175
2020738	HF183-qPCR	87.3		P	50 - 175
2020739	HF183-qPCR	103		P	50 - 175
2020740	HF183-qPCR	81.3		P	50 - 175
2021267	HF183-qPCR	93.2		P	50 - 175
2023260	HF183-qPCR	87.7		P	50 - 175
2023261	HF183-qPCR	90.0	0.0	P/F	50 - 175
2023262	HF183-qPCR	83.2		P	50 - 175
2023263	HF183-qPCR	81.0		P	50 - 175
2023264	HF183-qPCR	77.8		P	50 - 175
2023265	HF183-qPCR	91.5		P	50 - 175
2023266	HF183-qPCR	85.5		P	50 - 175
2023267	HF183-qPCR	87.6		P	50 - 175

Reference Method: SOP-PCR-1.2
Batch ID: P351422

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-1.2
Batch ID: P351422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021267	GULL2-qPCR	122		P	50 - 300

Reference Method: SOP-PCR-1.3
Batch ID: P351335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2017120	GFD-purified-qPCR	97.2		P	50 - 175
2020083	GFD-purified-qPCR	142		P	50 - 175
2020084	GFD-purified-qPCR	148		P	50 - 175
2020738	GFD-purified-qPCR	158		P	50 - 175
2020739	GFD-purified-qPCR	142		P	50 - 175
2021267	GFD-purified-qPCR	120		P	50 - 175
2026784	GFD-purified-qPCR	144		P	50 - 175
2026785	GFD-purified-qPCR	107		P	50 - 175
2026786	GFD-purified-qPCR	116		P	50 - 175
2026787	GFD-purified-qPCR	115		P	50 - 175
2026788	GFD-purified-qPCR	75.3		P	50 - 175
2026789	GFD-purified-qPCR	83.9		P	50 - 175
2026790	GFD-purified-qPCR	131		P	50 - 175
2026791	GFD-purified-qPCR	168		P	50 - 175
2026792	GFD-purified-qPCR	140	159	P/P	50 - 175
2026793	GFD-purified-qPCR	139		P	50 - 175
2026794	GFD-purified-qPCR	193		F	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P351422

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021267	BacR-qPCR	90.3		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P351525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021259	Chlorophyll-a, Corrected	4.18	Sample	P	0 - 25
2021259	Chlorophyll-a, Uncorrected	7.76	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P351148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023261	HF183-qPCR	200	Spike	F	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.2
 Batch ID: P351422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023261	GULL2-qPCR	0.131	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
 Batch ID: P351335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2026792	GFD-purified-qPCR	12.7	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
 Batch ID: P351422

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023261	BacR-qPCR	12.0	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: 2021267
 Field Sample ID: 20030891

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	133	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	109	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	203	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	86.8						4.18	
	Chlorophyll-a, Uncorrected							7.76	
SOP-PCR-1.0	HF183-qPCR	137	94.9	87.3	103	81.3			200
				93.2					
SOP-PCR-1.2	GULL2-qPCR	160	135	122					0.131
SOP-PCR-1.3	GFD-purified-qPCR	41.0	131	142	148	97.2			12.7
				158					
SOP-PCR-1.4	BacR-qPCR	244	101	90.3					12.0

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2021256, 2021257, 2021258, 2021259, 2021260

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 9223 B Quanti-Tray / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Laboratory in Jacksonville	2021261, 2021262, 2021263, 2021264, 2021265
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2021267
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2021267
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2021267
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2021267
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2021266, 2021267, 2021268, 2021269, 2021270

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	08/31/2018	08/31/2018 14:20	Mariam Hanna	09/11/2018 09:00	Carina A. Tull	2021256, 2021257, 2021258, 2021259, 2021260
SM 9223 B Quanti-Tray	08/30/2018	08/30/2018 16:24		08/31/2018 16:55	ALS Environmental, Jax	2021261, 2021262, 2021263, 2021264, 2021265
SOP-PCR-1.0	08/31/2018	08/31/2018 12:10	Sarah Menz	09/10/2018 14:20	Mailin Lopez	2021267
SOP-PCR-1.2	08/31/2018	08/31/2018 12:10	Mailin Lopez	09/14/2018 09:08	Mailin Lopez	2021267
SOP-PCR-1.3	08/31/2018	08/31/2018 12:10	Sarah Menz	09/21/2018 12:01	Sarah Menz	2021267
SOP-PCR-1.4	08/31/2018	08/31/2018 12:10	Mailin Lopez	09/11/2018 13:01	Mailin Lopez	2021267
SOP-PCR-4.0	08/31/2018	08/31/2018 12:10	Angela Smith	09/06/2018 08:42	Sarah Menz	2021266, 2021267, 2021268, 2021269, 2021270