

Biological Analysis Report

NE-DIST-2019-05-15-02

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

Event Description: **Bmap 2**
Request ID: **RQ-2019-05-13-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Jacqueline Savage, Environmental Administrator

Date Certified: 19-JUN-2019 13:39

A handwritten signature in black ink that reads "Jackie Savage". The signature is written in a cursive, flowing style.

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: BIG FISHWEIR CR SF @ HAMILTON ST

Collection Date/Time: 05/14/2019 11:00

Field ID: 20030801

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086425	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.1		ug/L	P364788	
		Phaeophytin-a	1.8	I	ug/L	P364788	
		Chlorophyll-a, Uncorrected	6.4		ug/L	P364788	
2086428	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	76.7	Q	MPN/100 mL	P364118	
2086433	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

Sample Location: LITTLE FISHWEIR AT OAK ST

Collection Date/Time: 05/14/2019 11:35

Field ID: 20030953

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086431	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	659.0	AQ	MPN/100 mL	P364118	
2086435	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

Sample Location: MONCRIEF CR AT MONCRIEF ROAD

Collection Date/Time: 05/14/2019 12:05

Field ID: 20030726

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086426	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.3	I	ug/L	P364788	
		Phaeophytin-a	1.2	I	ug/L	P364788	
		Chlorophyll-a, Uncorrected	3.1		ug/L	P364788	
2086429	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	101.9	Q	MPN/100 mL	P364118	

Sample Location: MONCRIEF CR @ 21 ST ST

Collection Date/Time: 05/14/2019 12:30

Field ID: 20030897

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086432	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	2419.6	Q	MPN/100 mL	P364118	

**Sample Location: TROUT R @ DINSMORE BOAT RAMP DOCK
NR US 1**

Collection Date/Time: 05/14/2019 12:55

Field ID: 20030123

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2086427	SM 10200 H (mod.)	Chlorophyll-a, Corrected	19		ug/L	P364788	
		Phaeophytin-a	4.5	U	ug/L	P364788	
		Chlorophyll-a, Uncorrected	21		ug/L	P364788	
2086430	Enterolert/QT	Enterococci-Quanti-Tray	36.0	AQ	MPN/100 mL	P364118	
2086434	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P363934	LCS

Quality Assurance Report Method Blank Results

Reference Method: Enterolert/QT
Batch ID: P364118

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

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P364788

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SM 9223 Quanti-Tray
Batch ID: P364118

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

Reference Method: SOP-PCR-1.0
Batch ID: P363934

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P364788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P363934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	186	115	F/P	50 - 175
HF183-qPCR	164	153	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P363934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2083344	HF183-qPCR	128		P	50 - 175
2083597	HF183-qPCR	105		P	50 - 175
2085191	HF183-qPCR	106		P	50 - 175
2085852	HF183-qPCR	129		P	50 - 175
2085853	HF183-qPCR	111		P	50 - 175
2085951	HF183-qPCR	106		P	50 - 175
2085952	HF183-qPCR	155		P	50 - 175
2085953	HF183-qPCR	106		P	50 - 175
2085954	HF183-qPCR	133	119	P/P	50 - 175
2086433	HF183-qPCR	122		P	50 - 175
2086434	HF183-qPCR	120		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P363934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2086435	HF183-qPCR	110		P	50 - 175
2090303	HF183-qPCR	66.4		P	50 - 175

Quality Assurance Report Precision

Reference Method: Enterolert/QT
 Batch ID: P364118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086430	Enterococci-Quanti-Tray	27.8	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
 Batch ID: P364788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086594	Chlorophyll-a, Corrected	5.66	Sample	P	0 - 25
2086594	Chlorophyll-a, Uncorrected	3.36	Sample	P	0 - 25
2086594	Phaeophytin-a	2.70	Sample	P	0 - 25

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P364118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2086205	Escherichia Coli-Quanti-Tray	7.43	Sample	P	0 - 80
2086431	Escherichia Coli-Quanti-Tray	39.5	Sample	P	0 - 80

Reference Method: SOP-PCR-1.0
 Batch ID: P363934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2085954	HF183-qPCR	11.2	Spike	P	0 - 25
2091365	HF183-qPCR	9.32	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: 2086433
 Field Sample ID: 20030801

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

Quality Assurance Report Surrogates

Lab Sample ID: 2086434
Field Sample ID: 20030123

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	95.3	P	50 - 300

Lab Sample ID: 2086435
Field Sample ID: 20030953

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	90.4	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision			
									SMP	MS		
Enterolert/QT	Enterococci-Quanti-Tray								27.8			
SM 10200 H (mod.)	Chlorophyll-a, Corrected	100							5.66			
	Chlorophyll-a, Uncorrected								3.36			
	Phaeophytin-a								2.70			
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray								7.43	39.5		
SOP-PCR-1.0	HF183-qPCR	186	153	164	106	155	106				11.2	9.32
		115			133							

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2086430
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2086425, 2086426, 2086427
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2086428, 2086429, 2086431, 2086432
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2086433, 2086434, 2086435

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	05/15/2019	05/15/2019 14:26	Edwin Gonzalez-Soto	05/16/2019 16:42	Edwin Gonzalez-Soto	2086430
SM 10200 H (mod.)	05/15/2019	05/15/2019 15:20	Christiana McCrimmon	05/30/2019 14:24	Carina A. Tull	2086425, 2086426, 2086427
SM 9223 Quanti-Tray	05/15/2019	05/15/2019 15:19	Edwin Gonzalez-Soto	05/16/2019 11:00	Edwin Gonzalez-Soto	2086428, 2086429, 2086431, 2086432
SOP-PCR-1.0	05/15/2019	05/15/2019 16:00	Angela Smith	06/06/2019 12:17	Mailin Lopez	2086433, 2086434, 2086435