

Biological Analysis Report

WQAP-2018-08-24-06

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
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: **2018 Continuous Monitoring**
Request ID: **RQ-2018-07-23-26**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3525
Tallahassee, FL 32399-2400
Attn: Curtis Musson

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Amelia G. Rankin,

Date Certified: 25-SEP-2018 14:20



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: GOODBYS CREEK AT BAYMEADOWS RD

Collection Date/Time: 08/23/2018 09:40

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020080	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.9		ug/L	P351474	
		Phaeophytin-a	1.6		ug/L	P351474	
		Chlorophyll-a, Uncorrected	9.1		ug/L	P351474	

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 CREEK AT BAYMEADOWS RD

Collection Date/Time: 08/23/2018 09:40

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020083	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P350953	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P350953	
	SOP-PCR-1.3	GFD-purified-qPCR**	1.31E+03		TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P350953	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A86375

Sample Location: GOODBYS CREEK AT BAYMEADOWS RD

Collection Date/Time: 08/23/2018 09:40

Field ID: 20030593

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020082	ASTM D650399	ENTEROCOCCI-ENTEROLERT	5800		MPN/100 mL		

Sample Location: MCCOYS CR AT LELAND ST

Collection Date/Time: 08/23/2018 10:55

Field ID: 20030725

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020079	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.6		ug/L	P351474	
		Phaeophytin-a	1.3		ug/L	P351474	
		Chlorophyll-a, Uncorrected	5.5		ug/L	P351474	

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: MCCOYS CR AT LELAND ST

Collection Date/Time: 08/23/2018 10:55

Field ID: 20030725

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020084	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P350953	
	SOP-PCR-1.2	GULL2-qPCR**	8.4E+03	U	TSC/100 mL	P350953	
	SOP-PCR-1.3	GFD-purified-qPCR**	260	I	TSC/100 mL	P351335	LCS, MS
	SOP-PCR-1.4	BacR-qPCR**	1.5E+03	U	TSC/100 mL	P350953	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: Precision data unavailable for Analysis Batch A86375

Sample Location: MCCOYS CR AT LELAND ST

Collection Date/Time: 08/23/2018 10:55

Field ID: 20030725

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2020081	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	813		MPN/100 mL		

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P351474

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: SOP-PCR-1.0
Batch ID: P350953

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

Reference Method: SOP-PCR-1.2
Batch ID: P350953

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

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

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

Reference Method: SOP-PCR-1.4
Batch ID: P350953

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: P351474

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.2		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P350953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	115	129	P/P	50 - 175

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.2
 Batch ID: P350953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	103	99.2	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: P350953

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	91.4	162	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P350953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016142	HF183-qPCR	93.8		P	50 - 175
2016293	HF183-qPCR	102		P	50 - 175
2017670	HF183-qPCR	95.6		P	50 - 175
2017671	HF183-qPCR	85.5		P	50 - 175
2017672	HF183-qPCR	96.8		P	50 - 175
2019427	HF183-qPCR	94.7		P	50 - 175
2019428	HF183-qPCR	98.1		P	50 - 175
2019430	HF183-qPCR	86.6		P	50 - 175
2020083	HF183-qPCR	87.2		P	50 - 175
2020084	HF183-qPCR	92.8		P	50 - 175
2020736	HF183-qPCR	94.8		P	50 - 175
2022097	HF183-qPCR	76.5	85.6	P/P	50 - 175
2022098	HF183-qPCR	84.9		P	50 - 175

Reference Method: SOP-PCR-1.2
 Batch ID: P350953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016293	GULL2-qPCR	82.2		P	50 - 300
2017670	GULL2-qPCR	90.7		P	50 - 300
2017671	GULL2-qPCR	79.8		P	50 - 300
2019428	GULL2-qPCR	96.0		P	50 - 300
2020083	GULL2-qPCR	76.4		P	50 - 300
2020084	GULL2-qPCR	80.8		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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.3

Batch ID: P351335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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: P350953

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2016293	BacR-qPCR	68.7		P	50 - 175
2017670	BacR-qPCR	68.7		P	50 - 175
2017671	BacR-qPCR	62.0		P	50 - 175
2019428	BacR-qPCR	72.0		P	50 - 175
2020083	BacR-qPCR	61.9		P	50 - 175
2020084	BacR-qPCR	54.3		P	50 - 175
2020736	BacR-qPCR	62.5		P	50 - 175
2022097	BacR-qPCR	62.1	64.0	P/P	50 - 175
2022098	BacR-qPCR	61.7		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)

Batch ID: P351474

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020023	Chlorophyll-a, Corrected	1.00	Sample	P	0 - 25
2020023	Chlorophyll-a, Uncorrected	0.789	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0

Batch ID: P350953

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022097	HF183-qPCR	11.3	Spike	P	0 - 25

Quality Assurance Report Precision

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: P350953

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022097	BacR-qPCR	2.98	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: 2020083
 Field Sample ID: 20030593

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	98.2	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	96.6	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	91.6	P	50 - 300

Lab Sample ID: 2020084
 Field Sample ID: 20030725

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	105	P	50 - 300
SOP-PCR-1.2	SKETA-qPCR	102	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	90.9	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	87.2						1.00	
	Chlorophyll-a, Uncorrected							0.789	
SOP-PCR-1.0	HF183-qPCR	129	115	98.1	86.6	87.2			11.3
				92.8					
SOP-PCR-1.2	GULL2-qPCR	99.2	103	90.7	79.8	82.2			
				96.0					
SOP-PCR-1.3	GFD-purified-qPCR	41.0	131	142	148	97.2			12.7
				158					
SOP-PCR-1.4	BacR-qPCR	162	91.4	68.7	62.0	68.7			2.98
				62.1					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
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Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
ASTM D650399 / E82502	Enterococci by Enterolert Quanti-Tray Method by ALS Environmental Laboratory in Jacksonville	2020082
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2020079, 2020080
SM 9223 B Quanti-Tray / E82502	Escherichia coli by Colilert Quanti-Tray method by ALS Environmental Laboratory in Jacksonville	2020081
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2020083, 2020084
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium Gull2 genetic marker with quantitative polymerase chain reaction	2020083, 2020084
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	2020083, 2020084
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	2020083, 2020084
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	2020083, 2020084

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
ASTM D650399	08/23/2018	08/23/2018 15:45		08/24/2018 18:49	ALS Environmental, Jax	2020082
SM 10200 H (mod.)	08/24/2018	08/24/2018 14:40	Mariam Hanna	09/06/2018 08:45	Carina A. Tull	2020079, 2020080
SM 9223 B Quanti-Tray	08/23/2018	08/23/2018 15:35		08/24/2018 18:49	ALS Environmental, Jax	2020081
SOP-PCR-1.0	08/24/2018	08/24/2018 14:05	Sarah Menz	09/07/2018 11:00	Mailin Lopez	2020083, 2020084
SOP-PCR-1.2	08/24/2018	08/24/2018 14:05	Sarah Menz	09/10/2018 13:07	Mailin Lopez	2020083, 2020084
SOP-PCR-1.3	08/24/2018	08/24/2018 14:05	Sarah Menz	09/21/2018 12:01	Sarah Menz	2020083, 2020084
SOP-PCR-1.4	08/24/2018	08/24/2018 14:05	Sarah Menz	09/07/2018 15:36	Mailin Lopez	2020083, 2020084
SOP-PCR-4.0	08/24/2018	08/24/2018 14:05	Angela Smith	09/06/2018 08:42	Sarah Menz	2020083, 2020084