

Biological Analysis Report

NW-DIST-2017-11-16-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
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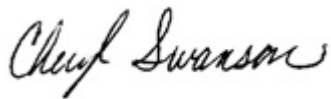
Event Description: **Escambia River WBID 10A,B,C,E,F**
Request ID: **RQ-2017-10-09-20**
Customer: **NW-DIST**
Project ID: **SMP**

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Date Certified: 12-APR-2018 15:40



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: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:00**

Field ID: G4NW0264

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947166	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.58	I	ug/L	P336302	
		Phaeophytin-a	0.40	U	ug/L	P336302	
		Chlorophyll-a, Uncorrected	0.61	I	ug/L	P336302	

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:05**

Field ID: G4NW0264DUPLICATE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947167	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P336302	
		Phaeophytin-a	0.40	U	ug/L	P336302	
		Chlorophyll-a, Uncorrected	0.43	I	ug/L	P336302	

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:10**

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947168	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P336302	
		Phaeophytin-a	0.40	U	ug/L	P336302	
		Chlorophyll-a, Uncorrected	0.40	U	ug/L	P336302	

Sample Location: ESCAMBIA RIVER UPSTREAM GULF POWER DISCHARGE **Collection Date/Time: 11/15/2017 14:10**

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947171	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1	U	MPN/100 mL		

Sample Location: ESCAMBIA RIVER DOWNSTREAM OF COTTON LAKE **Collection Date/Time: 11/15/2017 11:00**

Field ID: G4NW0403

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947169	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.94	I	ug/L	P336302	
		Phaeophytin-a	0.40	U	ug/L	P336302	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P336302	

Sample Location: ESCAMBIA RIVER UPSTREAM OF MITCHELL CREEK **Collection Date/Time: 11/15/2017 11:45**

Field ID: G4NW0404

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947170	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.64	I	ug/L	P336302	
		Phaeophytin-a	0.49	I	ug/L	P336302	
		Chlorophyll-a, Uncorrected	0.97	I	ug/L	P336302	

Sample Location: ESCAMBIA RIVER

Collection Date/Time: 11/15/2017 12:10

Field ID: G4NW0405

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947172	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	98		MPN/100 mL		

Sample Location: ESCAMBIA RIVER BELOW MACKEY BAY INLET (NORTH BANK)

Collection Date/Time: 11/15/2017 13:45

Field ID: G4NW0255

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947174	SOP-PCR-1.0	HF183-qPCR**	280	U	GEU/100 mL	P335385	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:
 SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: ESCAMBIA RIVER BELOW MACKEY BAY INLET (NORTH BANK)

Collection Date/Time: 11/15/2017 13:45

Field ID: G4NW0255

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1947173	Enterolert/QT	Enterococci-Quanti-Tray	10		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P336302

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: P335385

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P336302

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.3		P	84 - 116

Reference Method: SOP-PCR-1.0
 Batch ID: P335385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	89.0	92.6	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P335385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946706	HF183-qPCR	64.9		P	50 - 175
1946707	HF183-qPCR	76.3	87.3	P/P	50 - 175
1946906	HF183-qPCR	68.6		P	50 - 175
1946944	HF183-qPCR	79.8		P	50 - 175
1946945	HF183-qPCR	62.1		P	50 - 175
1946946	HF183-qPCR	82.0		P	50 - 175
1946947	HF183-qPCR	77.8		P	50 - 175
1946948	HF183-qPCR	63.8		P	50 - 175
1947000	HF183-qPCR	57.2		P	50 - 175
1947028	HF183-qPCR	72.0		P	50 - 175
1947029	HF183-qPCR	82.0		P	50 - 175
1947174	HF183-qPCR	85.2		P	50 - 175
1948227	HF183-qPCR	66.9		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P336302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1947273	Chlorophyll-a, Corrected	4.18	Sample	P	0 - 25
1947273	Chlorophyll-a, Uncorrected	3.15	Sample	P	0 - 25
1947273	Phaeophytin-a	0.296	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P335385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946707	HF183-qPCR	13.4	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: 1947174
Field Sample ID: G4NW0255

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	133	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	Precision	MS
				LCS SMP	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
SM 10200 H (mod.)	Chlorophyll-a, Corrected	98.3						4.18	
	Chlorophyll-a, Uncorrected							3.15	
	Phaeophytin-a							0.296	
SOP-PCR-1.0	HF183-qPCR	92.6	89.0	64.9	76.3	87.3			13.4
				79.8					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E71969	Enterococci by Enterolert Quanti-Tray method by UWF Overflow Laboratory for NWD	1947173
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1947166, 1947167, 1947168, 1947169, 1947170
SM 9223 Quanti-Tray / E71969	Escherichia coli by Colilert 18 Quanti-Tray method by UWF Overflow Laboratory for NWD	1947171, 1947172
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1947174
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1947174

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/15/2017	11/15/2017 15:50		11/16/2017 16:17	UWF Lab	1947173
SM 10200 H (mod.)	11/16/2017	11/16/2017 15:25	Cathy Sherrer	12/04/2017 08:20	Kim M. Spencer	1947166, 1947167, 1947168, 1947169, 1947170
SM 9223 Quanti-Tray	11/15/2017	11/15/2017 16:10		11/16/2017 12:16	UWF Lab	1947171, 1947172
SOP-PCR-1.0	11/16/2017	11/16/2017 14:30	Sarah Menz	12/01/2017 10:37	Sarah Menz	1947174
SOP-PCR-4.0	11/16/2017	11/16/2017 14:30	Sarah Menz	12/12/2017 11:51	Puja Jasrotia	1947174