

Biological Analysis Report

NW-DIST-2017-06-20-02

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

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Pens/Cant Run WBID489A 542 586 531**
Request ID: **RQ-2017-06-19-24**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 01-SEP-2017 08:48



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, InvertZool, 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: Rest Area Run below Beaver Dam Ck

Collection Date/Time: 06/19/2017 10:20

Field ID: G5NW0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907509	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	51		MPN/100 mL		

Sample Location: Rest Area Run below Beaver Dam Ck

Collection Date/Time: 06/19/2017 10:20

Field ID: G5NW0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907518	SOP-PCR-1.2	GULL2-qPCR**	1.4E+03	UJ	TSC/100 mL	P327926	LCS, SUR
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: No amplification of GULL2 marker. Quality control failure(s) observed. Sample processed with an additional purification step to reduce inhibition, which can reduce overall DNA recovery. See QA report.

Sample Location: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907494	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.90	I	ug/L	P327396	
		Phaeophytin-a	0.57	U	ug/L	P327396	
		Chlorophyll/Phaeophytin Ratio	1.6			P327396	
		Chlorophyll-a, Uncorrected	0.97	I	ug/L	P327396	

Sample Location: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907510	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	341		MPN/100 mL		

Sample Location: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907519	SOP-PCR-1.2	GULL2-qPCR**	1.4E+03	UJ	TSC/100 mL	P327926	LCS, SUR
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.2: No amplification of GULL2 marker. Quality control failure(s) observed. Sample processed with an additional purification step to reduce inhibition, which can reduce overall DNA recovery. See QA report.

Sample Location: Ten mile Ck @ Pine Forest Rd

Collection Date/Time: 06/19/2017 11:20

Field ID: G5NW0051

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1907499	SOP-IZ06	Stream Condition Index (SCI)**	38	A	Points		
		Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2**	35		# Taxa		

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P327396

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-1.2
 Batch ID: P327926

Component	Result	Code	Units
GULL2-qPCR	2.8E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P327396

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	102		P	84 - 116

Reference Method: SOP-PCR-1.2
 Batch ID: P327926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GULL2-qPCR	76.5	17.0	P/F	50 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.2
 Batch ID: P327926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906939	GULL2-qPCR	67.5		P	50 - 300
1907518	GULL2-qPCR	95.3		P	50 - 300
1907519	GULL2-qPCR	82.9	75.6	P/P	50 - 300

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P327396

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907414	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1907414	Chlorophyll-a, Corrected	1.86	Sample	P	0 - 25
1907414	Chlorophyll-a, Uncorrected	1.71	Sample	P	0 - 25
1907414	Phaeophytin-a	1.82	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.2
Batch ID: P327926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1907519	GULL2-qPCR	9.20	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: 1907518
Field Sample ID: G5NW0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	5.16	F	30 - 300

Lab Sample ID: 1907519
Field Sample ID: G5NW0051

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.2	SKETA-qPCR	6.49	F	30 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio							0.0	
	Chlorophyll-a, Corrected	102						1.86	
	Chlorophyll-a, Uncorrected							1.71	
	Phaeophytin-a							1.82	
SOP-PCR-1.2	GULL2-qPCR	17.0	76.5	67.5	95.3	82.9			9.20
				75.6					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1907494
SM 9223 Quanti-Tray / E71969	Escherichia coli by Colilert 18 Quanti-Tray method by UWF Overflow Laboratory for NWD	1907509, 1907510
SOP-IZ06 / E31780	No. Taxa of FW macroinverts, qual samp, 20 dipnets.	1907499
SOP-PCR-1.2 / E31780	Detection and quantification of coastal bird specific Catellicoccus marimammalium genetic marker with quantitative polymerase chain reaction	1907518, 1907519
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1907518, 1907519

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	06/20/2017	06/20/2017 12:40	Cathy Sherrer	06/22/2017	Kim M. Spencer	1907494
SM 9223 Quanti-Tray	06/19/2017			06/19/2017 13:50	UWF Lab	1907510
	06/19/2017			06/19/2017 13:52	UWF Lab	1907509
SOP-IZ06	06/20/2017	07/06/2017	Cathy Sherrer	07/17/2017	Michael Heyn	1907499
	06/20/2017	07/06/2017	Cathy Sherrer	07/20/2017	Michael Heyn	1907499
SOP-PCR-1.2	06/20/2017	06/20/2017 12:29	Sarah Menz	07/11/2017	Sarah Menz	1907518, 1907519
SOP-PCR-4.0	06/20/2017	06/20/2017 12:29	Sarah Menz	07/14/2017	Puja Jasrotia	1907518, 1907519