

Biological Analysis Report

CEN-DIST-2019-09-20-01

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

Overflow Analyses Performed By:
Advanced Environmental Laboratories, Inc.
380 North Lake Blvd, Ste 1048
Altamonte Springs, FL 32701
DOH Accreditation E53076

Event Description: **Dot / Up Cypress x2 / Jane (OC)**

Request ID: **RQ-2019-08-26-53**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Michael Linger

For additional information please contact

Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 18-OCT-2019 15:38



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 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: Cypress Creek @ SR 535

Collection Date/Time: 09/19/2019 10:40

Field ID: G4CE0008

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121303	EPA 1603	Escherichia coli Membrane Filter	20	B	cfu/100 mL		
2121307	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.77	I	ug/L	P371481	
		Phaeophytin-a	0.82	U	ug/L	P371481	
		Chlorophyll-a, Uncorrected	0.83	I	ug/L	P371481	

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: Upper Cypress Creek @ Jacaranda

Collection Date/Time: 09/19/2019 11:00

Field ID: G4CE0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121304	EPA 1603	Escherichia coli Membrane Filter	30	B	cfu/100 mL		
2121308	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.76	U	ug/L	P371481	
		Phaeophytin-a	0.82	U	ug/L	P371481	
		Chlorophyll-a, Uncorrected	0.55	U	ug/L	P371481	

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: Lake Jane @ Center

Collection Date/Time: 09/19/2019 11:42

Field ID: G4CE0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121305	EPA 1603	Escherichia coli Membrane Filter	80	B	cfu/100 mL		
2121309	SM 10200 H (mod.)	Chlorophyll-a, Corrected	73		ug/L	P371703	
		Phaeophytin-a	15		ug/L	P371703	
		Chlorophyll-a, Uncorrected	84		ug/L	P371703	

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: Lake Dot @ Center

Collection Date/Time: 09/19/2019 12:15

Field ID: G2CE0067

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121302	EPA 1603	Escherichia coli Membrane Filter	240		cfu/100 mL		
2121306	SM 10200 H (mod.)	Chlorophyll-a, Corrected	26		ug/L	P371481	
		Phaeophytin-a	3.4		ug/L	P371481	
		Chlorophyll-a, Uncorrected	28		ug/L	P371481	
2121310	SOP-PCR-1.0	HF183-qPCR**	94	U	GEU/100 mL	P370882	

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.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P371481

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.76	U	ug/L
Chlorophyll-a, Uncorrected	0.55	U	ug/L
Phaeophytin-a	0.82	U	ug/L

Reference Method: SM 10200 H (mod.)
Batch ID: P371703

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: SOP-PCR-1.0
Batch ID: P370882

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: P371481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	101		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P371703

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	104		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P370882

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	115	90.1	P/P	50 - 175
HF183-qPCR	114	117	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P370882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2120245	HF183-qPCR	117	117	P/P	50 - 175
2120849	HF183-qPCR	113		P	50 - 175
2121101	HF183-qPCR	121		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
 Batch ID: P370882

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121102	HF183-qPCR	121		P	50 - 175
2121310	HF183-qPCR	116		P	50 - 175
2121621	HF183-qPCR	88.1		P	50 - 175
2121622	HF183-qPCR	87.8		P	50 - 175
2121671	HF183-qPCR	106		P	50 - 175
2121672	HF183-qPCR	115		P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P371481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121114	Chlorophyll-a, Corrected	8.35	Sample	P	0 - 25
2121114	Chlorophyll-a, Uncorrected	8.24	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
 Batch ID: P371703

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121430	Chlorophyll-a, Corrected	4.29	Sample	P	0 - 25
2121430	Chlorophyll-a, Uncorrected	3.82	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
 Batch ID: P370882

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2120245	HF183-qPCR	0.178	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2121310
 Field Sample ID: G2CE0067

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300

Quality Assurance Report Summary

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision	
									SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	101							8.35	
	Chlorophyll-a, Corrected	104							4.29	
	Chlorophyll-a, Uncorrected								8.24	
	Chlorophyll-a, Uncorrected								3.82	
SOP-PCR-1.0	HF183-qPCR	115	117	114	117	117	113			0.178
		90.1			121					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E53076	E. coli by MF by AEL in Altamonte Springs	2121302, 2121303, 2121304, 2121305
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2121306, 2121307, 2121308, 2121309
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	2121310

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	09/19/2019	09/19/2019 16:07		09/20/2019 14:30	Advanced Environmental Laboratory	2121302, 2121303, 2121304, 2121305
SM 10200 H (mod.)	09/20/2019	09/20/2019 14:37	Anthony Mirabito	09/27/2019 07:31	Peterson Janvier	2121306, 2121307, 2121308
	09/20/2019	09/20/2019 14:37	Anthony Mirabito	09/30/2019 12:20	Carina A. Tull	2121309
SOP-PCR-1.0	09/20/2019	09/20/2019 11:30	Angela Smith	10/10/2019 15:12	Lauren Campbell	2121310