

Biological Analysis Report

NE-DIST-2018-01-24-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

Overflow Analyses Performed By:
Advanced Environmental Laboratories - Gainesville
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DOH Accreditation E82001

Event Description: **Gville_2018**
Request ID: **RQ-2018-01-22-10**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 25-SEP-2018 15:27



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: Montechoa Creek @ CR 340 (NE 156th Ave)

Collection Date/Time: 01/23/2018 09:40

Field ID: 20030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961496	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.80	I	ug/L	P339130	
		Phaeophytin-a	0.52	I	ug/L	P339130	
		Chlorophyll-a, Uncorrected	1.2	I	ug/L	P339130	

Sample Location: Montechoa Creek @ CR 340 (NE 156th Ave)

Collection Date/Time: 01/23/2018 09:40

Field ID: 20030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961507	SOP-PCR-1.0	HF183-qPCR**	47	T	GEU/100 mL	P340022	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Montechoa Creek @ CR 340 (NE 156th Ave)

Collection Date/Time: 01/23/2018 09:40

Field ID: 20030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961501	EPA 1603	Escherichia coli-Membrane Filter	3900	J	cfu/100 mL		

Ref. Method and Comment:

EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour

Sample Location: Little Hatchet Creek @ SR 24

Collection Date/Time: 01/23/2018 11:35

Field ID: 20020109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961502	EPA 1603	Escherichia coli-Membrane Filter	960	AJ	cfu/100 mL		

Ref. Method and Comment:

EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour

Sample Location: Little Hatchet Creek @ SR 24

Collection Date/Time: 01/23/2018 11:35

Field ID: 20020109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961509	SOP-PCR-1.0	HF183-qPCR**	3.5E+03		GEU/100 mL	P338707	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Calf Pond-Center

Collection Date/Time: 01/23/2018 12:05

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961497	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.1		ug/L	P339130	
		Phaeophytin-a	0.40	U	ug/L	P339130	
		Chlorophyll-a, Uncorrected	7.6		ug/L	P339130	

Sample Location: Calf Pond-Center

Collection Date/Time: 01/23/2018 12:05

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961503	EPA 1603	Escherichia coli-Membrane Filter	620	J	cfu/100 mL		

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment: EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour							

Sample Location: Sunshine Lake-Center

Collection Date/Time: 01/23/2018 10:25

Field ID: G1NE0857

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961498	SM 10200 H (mod.)	Chlorophyll-a, Corrected	12		ug/L	P339130	
		Phaeophytin-a	1.7		ug/L	P339130	
		Chlorophyll-a, Uncorrected	13		ug/L	P339130	

Sample Location: Sunshine Lake-Center

Collection Date/Time: 01/23/2018 10:25

Field ID: G1NE0857

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961504	EPA 1603	Escherichia coli-Membrane Filter	10	BJ	cfu/100 mL		

Ref. Method and Comment:
EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour

Sample Location: Lake Alice Center-from bridge

Collection Date/Time: 01/23/2018 13:10

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961499	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.7		ug/L	P339130	
		Phaeophytin-a	0.40	U	ug/L	P339130	
		Chlorophyll-a, Uncorrected	4.0		ug/L	P339130	

Sample Location: Lake Alice Center-from bridge

Collection Date/Time: 01/23/2018 13:10

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961505	EPA 1603	Escherichia coli-Membrane Filter	400	J	cfu/100 mL		

Ref. Method and Comment:
EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour

Sample Location: Lake Alice outlet @ Gale Lemerand Dr

Collection Date/Time: 01/23/2018 13:40

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961500	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1		ug/L	P339130	
		Phaeophytin-a	0.50	I	ug/L	P339130	
		Chlorophyll-a, Uncorrected	2.4		ug/L	P339130	

Sample Location: Lake Alice outlet @ Gale Lemerand Dr

Collection Date/Time: 01/23/2018 13:40

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961508	SOP-PCR-1.0	HF183-qPCR**	37	T	GEU/100 mL	P340022	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Lake Alice outlet @ Gale Lemerand Dr

Collection Date/Time: 01/23/2018 13:40

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961506	EPA 1603	Escherichia coli-Membrane Filter	4100	J	cfu/100 mL		

Ref. Method and Comment:

EPA 1603: Second incubation period exceeded method limit by less than one hour Incubation period exceeded method limit by less than one hour

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P339130

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: P338707

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

Reference Method: SOP-PCR-1.0

Batch ID: P340022

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: P339130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	112		P	84 - 116

Reference Method: SOP-PCR-1.0

Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	122	114	P/P	50 - 175

Reference Method: SOP-PCR-1.0

Batch ID: P340022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	124	P/P	50 - 175
HF183-qPCR	110	111	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958064	HF183-qPCR	108		P	50 - 175
1958092	HF183-qPCR	94.3		P	50 - 175
1958093	HF183-qPCR	86.7		P	50 - 175
1958094	HF183-qPCR	96.8		P	50 - 175
1958503	HF183-qPCR	83.7		P	50 - 175
1958586	HF183-qPCR	60.1		P	50 - 175
1960208	HF183-qPCR	92.9		P	50 - 175
1960209	HF183-qPCR	83.9		P	50 - 175
1960210	HF183-qPCR	84.2		P	50 - 175
1961509	HF183-qPCR	93.7		P	50 - 175
1962140	HF183-qPCR	89.4	92.6	P/P	50 - 175
1963376	HF183-qPCR	97.2		P	50 - 175
1963584	HF183-qPCR	86.0		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1959971	HF183-qPCR	111		P	50 - 175
1961507	HF183-qPCR	103		P	50 - 175
1961508	HF183-qPCR	109		P	50 - 175
1961601	HF183-qPCR	121		P	50 - 175
1961840	HF183-qPCR	104		P	50 - 175
1961841	HF183-qPCR	99.5		P	50 - 175
1962102	HF183-qPCR	72.9		P	50 - 175
1962103	HF183-qPCR	92.8		P	50 - 175
1962106	HF183-qPCR	87.9		P	50 - 175
1963115	HF183-qPCR	94.8		P	50 - 175
1963116	HF183-qPCR	101		P	50 - 175
1968122	HF183-qPCR	98.0		P	50 - 175
1968560	HF183-qPCR	98.7	118	P/P	50 - 175

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P339130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961449	Chlorophyll-a, Corrected	1.59	Sample	P	0 - 25
1961449	Chlorophyll-a, Uncorrected	1.43	Sample	P	0 - 25
1961449	Phaeophytin-a	0.577	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	HF183-qPCR	3.51	Spike	P	0 - 25

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P340022

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1968560	HF183-qPCR	17.8	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: 1961507
Field Sample ID: 20030112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	125	P	50 - 300

Lab Sample ID: 1961508
Field Sample ID: G3NE0010

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	113	P	50 - 300

Lab Sample ID: 1961509
Field Sample ID: 20020109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	125	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	112							1.59	
	Chlorophyll-a, Uncorrected								1.43	
	Phaeophytin-a								0.577	
SOP-PCR-1.0	HF183-qPCR	114	122		93.7	89.4	92.6			3.51
					108					
	HF183-qPCR	117	111	124	98.0	111	103			17.8
		110			109					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E82001	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Gainesville Overflow Laboratories for NED	1961501, 1961502, 1961503, 1961504, 1961505, 1961506
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1961496, 1961497, 1961498, 1961499, 1961500
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1961507, 1961508, 1961509
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1961507, 1961508, 1961509

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	01/23/2018	01/23/2018 16:04		01/24/2018 18:50	AEL - Gainesville	1961501, 1961502, 1961503, 1961504, 1961505, 1961506
SM 10200 H (mod.)	01/24/2018	01/24/2018 13:06	Cathy Sherrer	01/29/2018 15:30	Jennifer Mihalic	1961496, 1961497, 1961498, 1961499, 1961500
SOP-PCR-1.0	01/24/2018	01/24/2018 14:30	Angela Smith	02/21/2018 12:21	Sarah Menz	1961507, 1961508
	01/24/2018	01/24/2018 14:30	Avril Wood	02/07/2018 10:07	Sarah Menz	1961509
SOP-PCR-4.0	01/24/2018	01/24/2018 14:30	Avril Wood	02/15/2018 14:46	Puja Jasrotia	1961507, 1961508, 1961509