

Biological Analysis Report

SE-DIST-2017-03-21-01

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

Overflow Analyses Performed By:
Flowers Chemical Laboratories Inc.
571 NW Mercantile Pl. Ste. 111
Port St. Lucie, FL 34986
DOH Accreditation E86562

Event Description: **SMP-G5 North Run**
Request ID: **RQ-2017-03-20-35**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
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2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Cheryl A. Swanson, Environmental Manager

Date Certified: 25-APR-2017 14:57



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: Micco Ditch @ Micco Road

Collection Date/Time: 03/20/2017 12:20

Field ID: G5SE0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881450	SM 10200 H (mod.)	Chlorophyll-a, Corrected	4.8		ug/L	P322140	
		Phaeophytin-a	1.6		ug/L	P322140	
		Chlorophyll/Phaeophytin Ratio	1.5			P322140	
		Chlorophyll-a, Uncorrected	5.9		ug/L	P322140	

Sample Location: C-54 W of I-95

Collection Date/Time: 03/20/2017 13:40

Field ID: G5SE0057

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881451	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.9		ug/L	P322231	
		Phaeophytin-a	2.0		ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	1.6			P322231	
		Chlorophyll-a, Uncorrected	11		ug/L	P322231	

Sample Location: C-54 1700m West of I-95

Collection Date/Time: 03/20/2017 14:00

Field ID: G5SE0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881452	SM 10200 H (mod.)	Chlorophyll-a, Corrected	13		ug/L	P322231	
		Phaeophytin-a	2.6		ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	1.6			P322231	
		Chlorophyll-a, Uncorrected	16		ug/L	P322231	

Sample Location: Kid Creek @ Old Dixie

Collection Date/Time: 03/20/2017 12:00

Field ID: G5SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881453	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.57	I	ug/L	P322231	
		Phaeophytin-a	0.40	U	ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	2.1			P322231	
		Chlorophyll-a, Uncorrected	0.46	I	ug/L	P322231	
1881468	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	2420	J	MPN/100 mL		

Sample Location: South Relief Canal @ US 1

Collection Date/Time: 03/20/2017 10:20

Field ID: G5SE0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881454	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.7		ug/L	P322231	
		Phaeophytin-a	1.3		ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	1.5			P322231	
		Chlorophyll-a, Uncorrected	3.6		ug/L	P322231	
1881461	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1881469	Enterolert/QT	Enterococci-Quanti-Tray	10.0	U	MPN/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	130		MPN/100 mL		

Sample Location: Main Canal @ US 1

Collection Date/Time: 03/20/2017 10:40

Field ID: G5SE0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881455	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.4	I	ug/L	P322231	
		Phaeophytin-a	0.94	I	ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	1.4			P322231	
		Chlorophyll-a, Uncorrected	2.0		ug/L	P322231	
1881462	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1881470	Enterolert/QT	Enterococci-Quanti-Tray	10.0	U	MPN/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	135		MPN/100 mL		

Sample Location: North Canal Below Weir

Collection Date/Time: 03/20/2017 11:20

Field ID: G5SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1881456	SM 10200 H (mod.)	Chlorophyll-a, Corrected	3.4	A	ug/L	P322231	
		Phaeophytin-a	2.1	A	ug/L	P322231	
		Chlorophyll/Phaeophytin Ratio	1.4	A		P322231	
		Chlorophyll-a, Uncorrected	4.8	A	ug/L	P322231	
1881463	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1881471	Enterolert/QT	Enterococci-Quanti-Tray	10.0	U	MPN/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	137		MPN/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P322140

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: SM 10200 H (mod.)

Batch ID: P322231

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)

Batch ID: P322140

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	85.3		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P322231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.4		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P322140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1880998	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1880998	Chlorophyll-a, Corrected	0.884	Sample	P	0 - 25
1880998	Chlorophyll-a, Uncorrected	0.675	Sample	P	0 - 25
1880998	Phaeophytin-a	1.26	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P322231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1881456	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1881456	Chlorophyll-a, Corrected	3.55	Sample	P	0 - 25
1881456	Chlorophyll-a, Uncorrected	6.70	Sample	P	0 - 25
1881456	Phaeophytin-a	15.2	Sample	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 Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll/Phaeophytin Ratio				0.0	
	Chlorophyll-a, Corrected	85.3			0.884	
	Chlorophyll-a, Corrected	87.4			3.55	
	Chlorophyll-a, Uncorrected				0.675	
	Chlorophyll-a, Uncorrected				6.70	
	Phaeophytin-a				1.26	
	Phaeophytin-a				15.2	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E86562	Enterococci by Enterolert Quanti-Tray method by Flowers Overflow Laboratory for Southeast District	1881469, 1881470, 1881471
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1881450, 1881451, 1881452, 1881453, 1881454, 1881455, 1881456

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 9223 Quanti-Tray / E86562	Escherichia coli by Colilert 18 Quanti-Tray method by FlowersOverflow Laboratory for Southeast District	1881468, 1881469, 1881470, 1881471
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1881461, 1881462, 1881463

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	03/20/2017			03/20/2017 15:35	Flowers-PSL	1881469, 1881470, 1881471
SM 10200 H (mod.)	03/21/2017	03/21/2017 13:35	Carina A. Tull	03/23/2017	Kim M. Spencer	1881450
	03/21/2017	03/21/2017 13:35	Carina A. Tull	03/24/2017	Jennifer Mihalic	1881451, 1881452, 1881453, 1881454, 1881455, 1881456
SM 9223 Quanti-Tray	03/20/2017			03/20/2017 15:45	Flowers-PSL	1881468, 1881469, 1881470, 1881471
SOP-PCR-4.0	03/21/2017	03/21/2017 14:00	Sarah Menz	04/12/2017	Daisys Matthews	1881461, 1881462, 1881463