

Biological Analysis Report

SE-DIST-2017-05-12-01

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 South Run**
Request ID: **RQ-2017-05-01-31**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Matthew Sewell

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Daisys Matthews - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Daisys Matthews,

Date Certified: 08-JUN-2017 21:57

A handwritten signature in black ink, appearing to read "D Matthews", with a stylized flourish at the end.

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: L-8 @ G-541

Collection Date/Time: 05/11/2017 10:40

Field ID: G3SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898887	SM 10200 H (mod.)	Chlorophyll-a, Corrected	22		ug/L	P325633	
		Phaeophytin-a	3.6	V	ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.6			P325633	
		Chlorophyll-a, Uncorrected	25		ug/L	P325633	

Ref. Method and Comment:
 SM 10200 H (mod.): Result is V-qualified due to laboratory blank failure for Phaeophytin only. Uncorr chl-a component result is >10 times blank.

Sample Location: M-Canal West of L-8

Collection Date/Time: 05/11/2017 10:55

Field ID: G5SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898888	SM 10200 H (mod.)	Chlorophyll-a, Corrected	160		ug/L	P325633	
		Phaeophytin-a	15		ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.6			P325633	
		Chlorophyll-a, Uncorrected	170		ug/L	P325633	

Ref. Method and Comment:
 SM 10200 H (mod.): Laboratory blank failure. Uncorr chl-a and phaeophytin component results are >10 times blank.

Sample Location: Ocean Canal @ SR-700

Collection Date/Time: 05/11/2017 11:05

Field ID: G5SE0049

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898889	SM 10200 H (mod.)	Chlorophyll-a, Corrected	74		ug/L	P325633	
		Phaeophytin-a	9.4		ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.6			P325633	
		Chlorophyll-a, Uncorrected	82		ug/L	P325633	

Ref. Method and Comment:
 SM 10200 H (mod.): Laboratory blank failure. Uncorr chl-a and phaeophytin component results are >10 times blank.

Sample Location: WPB Canal @ 20mi Bend

Collection Date/Time: 05/11/2017 11:25

Field ID: G5SE0058

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898893	SM 10200 H (mod.)	Chlorophyll-a, Corrected	120		ug/L	P325635	
		Phaeophytin-a	10		ug/L	P325635	
		Chlorophyll/Phaeophytin Ratio	1.6			P325635	
		Chlorophyll-a, Uncorrected	130		ug/L	P325635	
1898899	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1898902	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	4.10		MPN/100 mL		

Sample Location: C-6 Miami Canal @ SR-80

Collection Date/Time: 05/11/2017 12:45

Field ID: 28010980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898890	SM 10200 H (mod.)	Chlorophyll-a, Corrected	25		ug/L	P325633	
		Phaeophytin-a	9.4		ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.5			P325633	

Field ID: 28010980

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898890	SM 10200 H (mod.)	Chlorophyll-a, Uncorrected	31		ug/L	P325633	

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory blank failure. Uncorr chl-a and phaeophytin component results are >10 times blank.

Sample Location: 715 Farms - Morgan Rd @ CR-715

Collection Date/Time: 05/11/2017 13:30

Field ID: 28010984

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898891	SM 10200 H (mod.)	Chlorophyll-a, Corrected	92	A	ug/L	P325633	
		Phaeophytin-a	9.9	A	ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.6	A		P325633	
		Chlorophyll-a, Uncorrected	100	A	ug/L	P325633	
1898897	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1898900	Enterolert/QT	Enterococci-Quanti-Tray	10.0		MPN/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	261		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory blank failure. Uncorr chl-a and phaeophytin component results are >10 times blank.

Sample Location: East Beach - Canal near Pahokee WWTP

Collection Date/Time: 05/11/2017 13:45

Field ID: G5SE0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1898892	SM 10200 H (mod.)	Chlorophyll-a, Corrected	75		ug/L	P325633	
		Phaeophytin-a	12		ug/L	P325633	
		Chlorophyll/Phaeophytin Ratio	1.6			P325633	
		Chlorophyll-a, Uncorrected	85		ug/L	P325633	
1898898	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1898901	Enterolert/QT	Enterococci-Quanti-Tray	10.0	U	MPN/100 mL		
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	122		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory blank failure. Uncorr chl-a and phaeophytin component results are >10 times blank.

Quality Assurance Report

Method Blank Results

Reference Method: SM 10200 H (mod.)

Batch ID: P325633

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.41	I	ug/L
Phaeophytin-a	0.40	I	ug/L

Reference Method: SM 10200 H (mod.)

Batch ID: P325635

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: P325633

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	86.2		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P325635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	87.6		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P325633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898891	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1898891	Chlorophyll-a, Corrected	1.64	Sample	P	0 - 25
1898891	Chlorophyll-a, Uncorrected	1.84	Sample	P	0 - 25
1898891	Phaeophytin-a	5.21	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P325635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899325	Chlorophyll/Phaeophytin Ratio	0.0	Sample	P	0 - 25
1899325	Chlorophyll-a, Corrected	4.98	Sample	P	0 - 25
1899325	Chlorophyll-a, Uncorrected	4.41	Sample	P	0 - 25
1899325	Phaeophytin-a	5.88	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	86.2			1.64	
	Chlorophyll-a, Corrected	87.6			4.98	
	Chlorophyll-a, Uncorrected				1.84	
	Chlorophyll-a, Uncorrected				4.41	
	Phaeophytin-a				5.21	
	Phaeophytin-a				5.88	

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	1898900, 1898901
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1898887, 1898888, 1898889, 1898890, 1898891, 1898892, 1898893
SM 9223 Quanti-Tray / E86562	Escherichia coli by Colilert 18 Quanti-Tray method by FlowersOverflow Laboratory for Southeast District	1898900, 1898901, 1898902
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1898897, 1898898, 1898899

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	05/11/2017			05/11/2017 15:50	Flowers-PSL	1898900, 1898901
SM 10200 H (mod.)	05/12/2017	05/12/2017 13:50	Morgan Lane	05/22/2017	Brian Cumbie	1898887, 1898888, 1898889, 1898890, 1898891, 1898892, 1898893
SM 9223 Quanti-Tray	05/11/2017			05/11/2017 16:05	Flowers-PSL	1898900, 1898901, 1898902
SOP-PCR-4.0	05/12/2017	05/12/2017 12:43	Avril Wood	05/24/2017	Puja Jasrotia	1898897, 1898898, 1898899