

Biological Analysis Report

SE-DIST-2017-06-22-01

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-G2 Martin**
Request ID: **RQ-2017-06-12-21**
Customer: **SE-DIST**
Project ID: **SMP**

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Certified by: Jennifer Walters, Environmental Manager

Date Certified: 30-AUG-2017 13:32



Report Comments:
Correction made to field ID for St. Lucie N. Fork @ Veteran's

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: St.Lucie N.Fork @ Veteran's

Collection Date/Time: 06/21/2017 09:30

Field ID: G2SE0007

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908395	SM 10200 H (mod.)	Chlorophyll-a, Corrected	11		ug/L	P327737	
		Phaeophytin-a	4.2		ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.5			P327737	
		Chlorophyll-a, Uncorrected	13		ug/L	P327737	
1908399	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1908403	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	47.3		MPN/100 mL		

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: Bessey Creek @ Murphy Rd

Collection Date/Time: 06/21/2017 10:15

Field ID: G2SE0017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908397	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.0		ug/L	P327737	
		Phaeophytin-a	0.86	I	ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.5			P327737	
		Chlorophyll-a, Uncorrected	2.6		ug/L	P327737	
1908405	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	124		MPN/100 mL		

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: S.Fork St.Lucie near Leighton

Collection Date/Time: 06/21/2017 10:50

Field ID: G2SE0013

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908398	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14		ug/L	P327737	
		Phaeophytin-a	8.5		ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.4			P327737	
		Chlorophyll-a, Uncorrected	20		ug/L	P327737	
1908406	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	41.4		MPN/100 mL		

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: Danforth Creek @ Martin Hwy

Collection Date/Time: 06/21/2017 11:10

Field ID: G2SE0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908393	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.7	I	ug/L	P327737	
		Phaeophytin-a	0.60	I	ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.5			P327737	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P327737	
1908401	Enterolert/QT	Enterococci-Quanti-Tray	85.0		MPN/100 mL		

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: Manatee Pocket, Port Salerno

Collection Date/Time: 06/21/2017 11:35

Field ID: G2SE0012

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908392	SM 10200 H (mod.)	Chlorophyll-a, Corrected	17		ug/L	P327737	
		Phaeophytin-a	1.9		ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.6			P327737	
		Chlorophyll-a, Uncorrected	19		ug/L	P327737	

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: S.Fork St.Lucie @ Hosford Park

Collection Date/Time: 06/21/2017 12:00

Field ID: 28010478

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908396	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.8		ug/L	P327737	
		Phaeophytin-a	1.5		ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.6			P327737	
		Chlorophyll-a, Uncorrected	6.9		ug/L	P327737	
1908400	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				
1908404	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	28.8		MPN/100 mL		

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: S.Fork St.Lucie @ Halpatiokee

Collection Date/Time: 06/21/2017 12:30

Field ID: G2SE0015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908391	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4	I	ug/L	P327550	
		Phaeophytin-a	0.80	U	ug/L	P327550	
		Chlorophyll/Phaeophytin Ratio	1.5			P327550	
		Chlorophyll-a, Uncorrected	2.9		ug/L	P327550	

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: Roebuck Creek @ Locks Rd

Collection Date/Time: 06/21/2017 13:00

Field ID: G2SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908394	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P327737	
		Phaeophytin-a	0.40	U	ug/L	P327737	
		Chlorophyll/Phaeophytin Ratio	1.6			P327737	
		Chlorophyll-a, Uncorrected	0.52	I	ug/L	P327737	
1908402	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	308		MPN/100 mL		

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: P327550

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: P327737

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: P327550

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

Reference Method: SM 10200 H (mod.)
Batch ID: P327737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	105		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P327737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908471	Chlorophyll-a, Uncorrected	4.08	Sample	P	0 - 25
1908471	Phaeophytin-a	4.59	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-a, Corrected	104				
	Chlorophyll-a, Corrected	105				
	Chlorophyll-a, Uncorrected				4.08	
	Phaeophytin-a				4.59	

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
Enterolert/QT / E86562	Enterococci by Enterolert Quanti-Tray method by Flowers Overflow Laboratory for Southeast District	1908401
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1908391, 1908392, 1908393, 1908394, 1908395, 1908396, 1908397, 1908398
SM 9223 Quanti-Tray / E86562	Escherichia coli by Colilert 18 Quanti-Tray method by FlowersOverflow Laboratory for Southeast District	1908402, 1908403, 1908404, 1908405, 1908406
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1908399, 1908400

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	06/21/2017			06/21/2017 15:20	Flowers-PSL	1908401
SM 10200 H (mod.)	06/22/2017	06/22/2017 13:15	Elizabeth Lovern	06/27/2017	Kim M. Spencer	1908391
	06/22/2017	06/22/2017 13:15	Elizabeth Lovern	06/29/2017	Kim M. Spencer	1908392, 1908393, 1908394, 1908395, 1908396, 1908397, 1908398
SM 9223 Quanti-Tray	06/21/2017			06/21/2017 15:30	Flowers-PSL	1908402, 1908403, 1908404, 1908405, 1908406
SOP-PCR-4.0	06/22/2017	06/22/2017 12:22	Sarah Menz	07/14/2017	Puja Jasrotia	1908399, 1908400