

Biological Analysis Report

CEN-DIST-2017-01-20-02

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. - Altamonte
Springs
481 Newburyport Avenue
Altamonte Springs, Florida 32701
DOH Accreditation E83018

Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2017-01-09-34**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

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, PhD, QA Officer
Phone (850) 245-8177

Certified by: Daisys Matthews,

Date Certified: 15-FEB-2017 07:55

A handwritten signature in dark 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, Microbiology 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: HAYNES CREEK @ 300M DS OF CR 44

Collection Date/Time: 01/19/2017 10:54

Field ID: 2817A_20020642

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1865366	Enterolert/QT	Enterococci-Quanti-Tray	62.4		MPN/100 mL		
1865368	SM 9222 D	Fecal Coliforms-Membrane Filter	33	B	cfu/100 mL		
1865374	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	53.7	Q	MPN/100 mL	P319221	

Sample Location: HAYNES CREEK @ JUST DS OF BURELL LOCK

Collection Date/Time: 01/19/2017 11:08

Field ID: 2817A_20020168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1865367	Enterolert/QT	Enterococci-Quanti-Tray	2		MPN/100 mL		
1865369	SM 9222 D	Fecal Coliforms-Membrane Filter	38	B	cfu/100 mL		
1865375	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	39.3	Q	MPN/100 mL	P319221	

Sample Location: SWEETWATER CREEK @ FLORIDA AVE

Collection Date/Time: 01/19/2017 13:14

Field ID: 2992_20010768

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1865361	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.2	I	mg/L	P318765	
1865370	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P318997	
		Phaeophytin-a	0.40	U	ug/L	P318997	
		Chlorophyll/Phaeophytin Ratio	1.5			P318997	
		Chlorophyll-a, Uncorrected	0.64	I	ug/L	P318997	

Ref. Method and Comment:

SM 5210 B: Laboratory duplicate result is 1.0 I mg/L. Precision data is unavailable due to the small amount of analyte in the QC sample.

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: SALT CREEK @ PACKARD AVE.

Collection Date/Time: 01/19/2017 13:35

Field ID: 2990_20010763

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1865362	SM 5210 B	Biochemical Oxygen Demand-5 Day	1.4	I	mg/L	P318765	
1865371	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.1	I	ug/L	P318997	
		Phaeophytin-a	0.58	I	ug/L	P318997	
		Chlorophyll/Phaeophytin Ratio	1.5			P318997	
		Chlorophyll-a, Uncorrected	1.4		ug/L	P318997	

Ref. Method and Comment:

SM 5210 B: Precision data is unavailable due to the small amount of analyte in the QC sample.

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

Reference Method: SM 10200 H (mod.)

Batch ID: P318997

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P318997

Component	Result	Code	Units
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SM 5210 B
Batch ID: P318765

Component	Result	Code	Units
Biochemical Oxygen Demand-5 Day	0.20	U	mg/L

Reference Method: SM 9223 Quanti-Tray
Batch ID: P319221

Component	Result	Code	Units
Escherichia Coli-Quanti-Tray	1.0	U	MPN/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P318997

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	86.5		P	84 - 116

Reference Method: SM 5210 B
Batch ID: P318765

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Biochemical Oxygen Demand-5 Day	98.5		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 9223 Quanti-Tray
Batch ID: P319221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1865473	Escherichia Coli-Quanti-Tray	20.3	Sample	P	0 - 80

* 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	86.5				

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 5210 B	Biochemical Oxygen Demand-5 Day	98.5				
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				20.3	

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
Enterolert/QT / E83018	Enterococci by Enterolert Quanti-Tray method by Flowers Overflow Laboratory for Central District	1865366, 1865367
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, phaeophytin and ratio by spectrophotometry	1865370, 1865371
SM 5210 B / E31780	BOD, NOT nitrogen-inhibited	1865361, 1865362
SM 9222 D / E83018	Fecal coliforms by membrane filter method by Flowers Overflow Laboratories for CD	1865368, 1865369
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	1865374, 1865375

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	01/19/2017			01/19/2017 13:35	Flowers - Altamonte Springs	1865366, 1865367
SM 10200 H (mod.)	01/20/2017	01/20/2017 13:35	Morgan Lane	01/30/2017	Kim M. Spencer	1865370, 1865371
SM 5210 B	01/20/2017			01/20/2017 13:50	Jennifer Mihalic	1865361, 1865362
SM 9222 D	01/19/2017			01/19/2017 13:29	Flowers - Altamonte Springs	1865368, 1865369
SM 9223 Quanti-Tray	01/20/2017	01/20/2017 16:50	Carina A. Tull	01/21/2017 14:25	Brian Cumbie	1865374, 1865375