

Biological Analysis Report

SE-DIST-2023-09-14-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **SMP - Lake Clarke**
Request ID: **RQ-2023-09-11-23**
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: Andrew Luering

For additional information please contact
Cheryl Swanson - Administrator
Sarah Menz, Ph.D. - Bench Biology & Aquatic
Toxicity
Puja Jasrotia, Ph.D. - Molecular Biology & Taxonomy
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Sarah Menz, Environmental Administrator

Date Certified: 12-OCT-2023 12:00

A handwritten signature in black ink, appearing to be 'Sarah Menz', with a long, sweeping horizontal stroke at the end.

NON-CONFORMANCE REPORT INCLUDED

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 and Microbiology.

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 by the Florida Department of Health Environmental Laboratory Certification Program 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: LAKE CLARKE OUTFLOW EAST OF PINE TREE LN **Collection Date/Time: 09/13/2023 10:00**

Field ID: G3SE0077

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437066	SM 10150 B	Chlorophyll-a, Corrected	38		ug/L	P435224	
		Phaeophytin-a	9.9		ug/L	P435224	
		Chlorophyll-a, Uncorrected	46		ug/L	P435224	
2437077	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	275.5	Q	MPN/100 mL	P435294	
2437084	SM 9222 D	Fecal Coliforms-Membrane Filter	450	Q	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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.

SM 9222 D: 50 mL and 50 mL LD dilution had confluent growth.

Sample Location: LAKE CLARKE INFLOW 5 S CONGRESS AVE ABOVE CAYMAN DR **Collection Date/Time: 09/13/2023 10:15**

Field ID: G3SE0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437067	SM 10150 B	Chlorophyll-a, Corrected	28		ug/L	P435224	
		Phaeophytin-a	15		ug/L	P435224	
		Chlorophyll-a, Uncorrected	38		ug/L	P435224	
2437078	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	435.2	Q	MPN/100 mL	P435294	
2437085	SM 9222 D	Fecal Coliforms-Membrane Filter	520	Q	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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.

SM 9222 D: 50 mL dilution had confluent growth.

Sample Location: LAKE CLARKE INFLOW 4 S CONGRESS AVE BELOW LARK RD **Collection Date/Time: 09/13/2023 10:40**

Field ID: G3SE0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437068	SM 10150 B	Chlorophyll-a, Corrected	13	J	ug/L	P435224	
		Phaeophytin-a	8.8	J	ug/L	P435224	
		Chlorophyll-a, Uncorrected	19	J	ug/L	P435224	
2437079	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	260.3	Q	MPN/100 mL	P435294	
2437086	SM 9222 D	Fecal Coliforms-Membrane Filter	1100	BQ	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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. See Non-Conformance Report 10078.

SM 9222 D: 10 mL dilution had confluent growth.

Sample Location: LAKE CLARKE INFLOW 3 S CONGRESS AVE BELOW LAURA LN **Collection Date/Time: 09/13/2023 10:50**

Field ID: G3SE0074

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437069	SM 10150 B	Chlorophyll-a, Corrected	8.2	A	ug/L	P435224	
		Phaeophytin-a	2.4	I	ug/L	P435224	
		Chlorophyll-a, Uncorrected	9.9	A	ug/L	P435224	

Field ID: G3SE0074

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437080	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	866.4	Q	MPN/100 mL	P435294	
2437087	SM 9222 D	Fecal Coliforms-Membrane Filter	950	BQ	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: Lab dup result is 2.3 I for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

SM 9222 D: 50 mL dilution had confluent growth.

Sample Location: LAKE CLARKE INFLOW 2 S CONGRESS AVE **Collection Date/Time: 09/13/2023 11:05**
ABOVE CHEROKEE RD

Field ID: G3SE0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437070	SM 10150 B	Chlorophyll-a, Corrected	14		ug/L	P435224	
		Phaeophytin-a	3.5		ug/L	P435224	
		Chlorophyll-a, Uncorrected	16		ug/L	P435224	
2437081	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	488.4	Q	MPN/100 mL	P435294	
2437088	SM 9222 D	Fecal Coliforms-Membrane Filter	500	Q	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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: LAKE CLARKE INFLOW 1 S CONGRESS AVE **Collection Date/Time: 09/13/2023 11:20**
ABOVE COLLIN DR

Field ID: G3SE0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437071	SM 10150 B	Chlorophyll-a, Corrected	5.1	J	ug/L	P435224	
		Phaeophytin-a	6.4	J	ug/L	P435224	
		Chlorophyll-a, Uncorrected	9.0	J	ug/L	P435224	
2437082	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	261.3	Q	MPN/100 mL	P435294	
2437089	SM 9222 D	Fecal Coliforms-Membrane Filter	410	Q	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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. See Non-Conformance Report 10078.

SM 9222 D: 50 mL dilution had confluent growth.

Sample Location: C 51 EAST NEAR BELVEDERE **Collection Date/Time: 09/13/2023 11:45**

Field ID: G3SE0053

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437072	SM 10150 B	Chlorophyll-a, Corrected	40		ug/L	P435224	
		Phaeophytin-a	9.9		ug/L	P435224	
		Chlorophyll-a, Uncorrected	47		ug/L	P435224	
2437083	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	579.4	Q	MPN/100 mL	P435294	
2437090	SM 9222 D	Fecal Coliforms-Membrane Filter	430	Q	cfu/100 mL	P435395	

Ref. Method and Comment:

SM 10150 B: 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: LAKE CLARKE CENTER **Collection Date/Time: 09/13/2023 09:40**

Field ID: G3SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2437073	SM 10150 B	Chlorophyll-a, Corrected	13		ug/L	P435224	
		Phaeophytin-a	2.7	I	ug/L	P435224	
		Chlorophyll-a, Uncorrected	15		ug/L	P435224	
2437091	SM 9223 B Quanti-Tray	Escherichia Coli-Quanti-Tray	115.3	Q	MPN/100 mL	P435294	
2437092	SM 9222 D	Fecal Coliforms-Membrane Filter	140	BQ	cfu/100 mL	P435395	

Ref. Method and Comment:
SM 10150 B: 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.
SM 9222 D: 50 mL dilution had confluent growth.

Non-Conformance Report

NCR ID: 10078

Event(s)	Job(s)	Sample(s)	Test(s)
SE-DIST-2023-09-14-01	TLH-2023-09-14-42	2437068	
SE-DIST-2023-09-14-01	TLH-2023-09-14-42	2437071	

NCR Type: ANALYSIS NCR Category: Analytical Measurement

Observation: Samples had high turbidity and did not respond as expected to acidification.
Resolution: Customers Jordan Skaggs and Andrew Luering were notified by email. Samples will be reported with a J-qualifier.

Authorized by/Date: Cheryl A. Swanson 9/25/2023

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: SM 10150 B
Batch ID: P435224

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.96	U	ug/L
Chlorophyll-a, Uncorrected	0.70	U	ug/L
Phaeophytin-a	1.0	U	ug/L

Reference Method: SM 9222 D
Batch ID: P435395

Component	Result	Code	Units
Fecal Coliforms-Membrane Filter	2	U	cfu/100 mL

Reference Method: SM 9223 B Quanti-Tray
Batch ID: P435294

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10150 B
Batch ID: P435224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	94.7		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10150 B
Batch ID: P435224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2437069	Chlorophyll-a, Corrected	15.4	Sample	P	0 - 25
2437069	Chlorophyll-a, Uncorrected	12.1	Sample	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery	LCS	Precision SMP	MS
SM 10150 B	Chlorophyll-a, Corrected	94.7			15.4	
	Chlorophyll-a, Uncorrected				12.1	

Reference Method Descriptions

Method	Description	Associated Samples
SM 10150 B	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2437066, 2437067, 2437068, 2437069, 2437070, 2437071, 2437072, 2437073
SM 9222 D	Fecal coliforms by membrane filter method - non-chlorinated water systems	2437084, 2437085, 2437086, 2437087, 2437088, 2437089, 2437090, 2437092
SM 9223 B Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method - non-chlorinated water systems	2437077, 2437078, 2437079, 2437080, 2437081, 2437082, 2437083, 2437091

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10150 B	09/14/2023	09/14/2023 13:18	Julia Herten	09/18/2023 14:03	Keanu Thijm	2437066, 2437067, 2437068, 2437069, 2437070, 2437071, 2437072, 2437073
SM 9222 D	09/14/2023	09/14/2023 14:05	Callie Williams	09/15/2023 15:38	Callie Williams	2437084, 2437085, 2437086, 2437087
	09/14/2023	09/14/2023 14:35	Callie Williams	09/15/2023 15:38	Callie Williams	2437088, 2437089, 2437090, 2437092
SM 9223 B Quanti-Tray	09/14/2023	09/14/2023 15:22	Callie Williams	09/15/2023 11:29	Callie Williams	2437077, 2437078, 2437079, 2437080, 2437081, 2437082, 2437083, 2437091