

Biological Analysis Report

NW-DIST-2022-11-17-02

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

Overflow Analyses Performed By:
University of West Florida
11000 University Parkway
Pensacola, FL 32514
DOH Accreditation E71969

Event Description: **Project GreenShores Quarterly Sampling**
Request ID: **RQ-2022-11-14-04**
Customer: **NW-DIST**
Project ID: **DISTRICT**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Miranda Butler

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: Cheryl A. Swanson, Program Administrator

Date Certified: 19-DEC-2022 10:40



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 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 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: Range Marker East of Bayou Texas

Collection Date/Time: 11/16/2022 09:31

Field ID: 1

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370333	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.7	I	ug/L	P422598	
		Phaeophytin-a	1.5	U	ug/L	P422598	
		Chlorophyll-a, Uncorrected	2.4	I	ug/L	P422598	
2370347	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Midpoint between bay bridge and Muscogee Wharf

Collection Date/Time: 11/16/2022 09:47

Field ID: 2

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370334	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.5	I	ug/L	P422598	
		Phaeophytin-a	1.3	U	ug/L	P422598	
		Chlorophyll-a, Uncorrected	2.3	I	ug/L	P422598	
2370348	Enterolert/QT	Enterococci-Quanti-Tray	20		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: East End of Primary Stormdrain

Collection Date/Time: 11/16/2022 09:58

Field ID: 3

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370335	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1	I	ug/L	P422698	
		Phaeophytin-a	0.90	U	ug/L	P422698	
		Chlorophyll-a, Uncorrected	2.0		ug/L	P422698	
2370349	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: South of Primary Stormdrain

Collection Date/Time: 11/16/2022 10:05

Field ID: 4

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370336	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P422700	
		Phaeophytin-a	0.98	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.8	I	ug/L	P422700	
2370350	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: End of Chase St

Collection Date/Time: 11/16/2022 10:22

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
-----------	-------------	-----------	--------	------	-------	----------	----------

Field ID: 5

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370337	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P422700	
		Phaeophytin-a	0.90	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.5	I	ug/L	P422700	
2370351	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Midpoint between Muscogee and Hawkshaw

Collection Date/Time: 11/16/2022 10:28

Field ID: 6

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370338	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.2	I	ug/L	P422598	
		Phaeophytin-a	1.5	U	ug/L	P422598	
		Chlorophyll-a, Uncorrected	1.9	I	ug/L	P422598	
2370352	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Midpoint between bridge and port spoil pond

Collection Date/Time: 11/16/2022 10:37

Field ID: 7

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370339	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.4	I	ug/L	P422598	
		Phaeophytin-a	1.5	U	ug/L	P422598	
		Chlorophyll-a, Uncorrected	2.2	I	ug/L	P422598	
2370353	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: West of Primary Stormdrain

Collection Date/Time: 11/16/2022 10:13

Field ID: 8

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370340	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	U	ug/L	P422700	
		Phaeophytin-a	1.3	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	0.96	I	ug/L	P422700	
2370354	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: West of Hawkshaw Lagoon

Collection Date/Time: 11/16/2022 11:14

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370341	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	U	ug/L	P422598	
		Phaeophytin-a	1.3	U	ug/L	P422598	

Field ID: 9

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370341	SM 10200 H (mod.)	Chlorophyll-a, Uncorrected	1.1	I	ug/L	P422598	
2370355	Enterolert/QT	Enterococci-Quanti-Tray	31		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: South of Bayfront Stormdrain

Collection Date/Time: 11/16/2022 11:05

Field ID: 10

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370342	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.2	I	ug/L	P422700	
		Phaeophytin-a	1.0	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.1	I	ug/L	P422700	
2370356	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Seville Marina Inlet

Collection Date/Time: 11/16/2022 10:58

Field ID: 11

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370343	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.8	U	ug/L	P422700	
		Phaeophytin-a	2.0	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.3	U	ug/L	P422700	
2370357	Enterolert/QT	Enterococci-Quanti-Tray	52		MPN/100 mL		

Ref. Method and Comment:

SM 10200 H (mod.): Lab dup result is 1.8 U for Chl-a Corrected, 1.3 U for Chl-a Uncorrected, and 2.0 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: East of Port Spoil Pond

Collection Date/Time: 11/16/2022 10:46

Field ID: 12

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370344	SM 10200 H (mod.)	Chlorophyll-a, Corrected	2.1	I	ug/L	P422700	
		Phaeophytin-a	0.90	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	2.1		ug/L	P422700	
2370358	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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: Hawkshaw Lagoon at Memorial Bridge

Collection Date/Time: 11/16/2022 12:07

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370345	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P422700	
		Phaeophytin-a	0.90	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.8		ug/L	P422700	
2370359	Enterolert/QT	Enterococci-Quanti-Tray	10	U	MPN/100 mL		

Field ID: 13

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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: 150ft. South of Hawkshaw Lagoon East Stormdrain

Collection Date/Time: 11/16/2022 11:39

Field ID: 14

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2370346	SM 10200 H (mod.)	Chlorophyll-a, Corrected	1.5	I	ug/L	P422700	
		Phaeophytin-a	0.90	U	ug/L	P422700	
		Chlorophyll-a, Uncorrected	1.5	I	ug/L	P422700	
2370360	Enterolert/QT	Enterococci-Quanti-Tray	10	U	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

Reference Method: SM 10200 H (mod.)
 Batch ID: P422598

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SM 10200 H (mod.)
 Batch ID: P422698

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Reference Method: SM 10200 H (mod.)
 Batch ID: P422700

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L
Chlorophyll-a, Uncorrected	0.60	U	ug/L
Phaeophytin-a	0.90	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P422598

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.6		P	84 - 116

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
 Batch ID: P422698

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	100		P	84 - 116

Reference Method: SM 10200 H (mod.)
 Batch ID: P422700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	101		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
 Batch ID: P422598

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2369863	Chlorophyll-a, Corrected	0.984	Sample	P	0 - 25
2369863	Chlorophyll-a, Uncorrected	0.533	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 10200 H (mod.)	Chlorophyll-a, Corrected	98.6			0.984	
	Chlorophyll-a, Corrected	100				
	Chlorophyll-a, Corrected	101				
	Chlorophyll-a, Uncorrected				0.533	

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert/QT by UWF in Pensacola	2370347, 2370348, 2370349, 2370350, 2370351, 2370352, 2370353, 2370354, 2370355, 2370356, 2370357, 2370358, 2370359, 2370360
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2370333, 2370334, 2370335, 2370336, 2370337, 2370338, 2370339, 2370340, 2370341, 2370342, 2370343, 2370344, 2370345, 2370346

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/16/2022	11/16/2022 15:25		11/17/2022 15:59	UWF Lab	2370347, 2370348, 2370349, 2370350, 2370351, 2370352, 2370353, 2370354, 2370355, 2370356, 2370357, 2370358, 2370359, 2370360
SM 10200 H (mod.)	11/17/2022	11/17/2022 14:24	Aidan Cronin	11/18/2022 08:38	Megan Higbee	2370333, 2370334, 2370338, 2370339, 2370341
	11/17/2022	11/17/2022 14:24	Aidan Cronin	11/21/2022 09:46	Megan Higbee	2370335
	11/17/2022	11/17/2022 14:24	Aidan Cronin	11/21/2022 10:42	Megan Higbee	2370336, 2370337, 2370340, 2370342, 2370343, 2370344, 2370345, 2370346