

Biological Analysis Report

SO-DIST-2019-12-18-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **2019 SMP : KEYS**

Request ID: **RQ-2019-12-16-35**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: Nicole Reistad

For additional information please contact
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Jacqueline Savage - Microbiology
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Certified by: Jacqueline Savage, Environmental Administrator

Date Certified: 15-JAN-2020 14:08



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: 8073@ENRG4 WofKeywest#2

Collection Date/Time: 12/17/2019 09:15

Field ID: G5SD0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144942	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.95	I	ug/L	P376592	
		Phaeophytin-a	0.90	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	1.3	I	ug/L	P376592	
2144959	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Laboratory duplicate result is 10.0 U. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073@ENRG4 WofKeywest#1

Collection Date/Time: 12/17/2019 09:30

Field ID: G5SD0063

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144943	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.89	U	ug/L	P376592	
		Phaeophytin-a	0.98	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.78	I	ug/L	P376592	
2144960	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG6 Out@Reef #2

Collection Date/Time: 12/17/2019 09:55

Field ID: G5SD0083

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144944	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376592	
		Phaeophytin-a	0.90	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376592	
2144961	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG6 Out@Reef #1

Collection Date/Time: 12/17/2019 10:05

Field ID: G5SD0064

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144945	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.89	U	ug/L	P376592	
		Phaeophytin-a	0.98	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.65	U	ug/L	P376592	
2144962	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8079 @ENRG6 Out@Reef#1

Collection Date/Time: 12/17/2019 10:50

Field ID: G5SD0068

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144946	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376592	

Field ID: G5SD0068

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144946	SM 10200 H (mod.)	Phaeophytin-a	0.90	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376592	
2144963	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8079 @ENRG6 Out@Reef#2

Collection Date/Time: 12/17/2019 11:05

Field ID: G5SD0085

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144947	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.96	U	ug/L	P376592	
		Phaeophytin-a	1.0	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.70	U	ug/L	P376592	
2144964	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8079 @ENRG3 StockIsland

Collection Date/Time: 12/17/2019 11:20

Field ID: G5SD0067

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144948	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.96	U	ug/L	P376592	
		Phaeophytin-a	1.0	U	ug/L	P376592	
		Chlorophyll-a, Uncorrected	0.70	U	ug/L	P376592	
2144965	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8091.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8079 @ENRG3 Nearshore#2

Collection Date/Time: 12/17/2019 11:35

Field ID: G5SD0084

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144949	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	UJ	ug/L	P376699	
		Phaeophytin-a	0.90	UJ	ug/L	P376699	
		Chlorophyll-a, Uncorrected	0.60	UJ	ug/L	P376699	
2144966	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:

SM 10200 H (mod.): See Non-Conformance Report #8100.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073#1 S of Ft. Zach

Collection Date/Time: 12/17/2019 11:55

Field ID: G5SD0062

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144950	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	UJ	ug/L	P376699	
		Phaeophytin-a	0.90	UJ	ug/L	P376699	
		Chlorophyll-a, Uncorrected	0.60	UJ	ug/L	P376699	

Field ID: G5SD0062

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144967	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

Ref. Method and Comment:
 SM 10200 H (mod.): See Non-Conformance Report #8100.
 Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073#2 S of FtZachENRG3

Collection Date/Time: 12/17/2019 12:05

Field ID: G5SD0095

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144951	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376604	
		Phaeophytin-a	0.90	U	ug/L	P376604	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376604	
2144968	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

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.
 Enterolert/QT: Laboratory duplicate result is 10.0 U. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG2 Bayside #2

Collection Date/Time: 12/17/2019 12:40

Field ID: G5SD0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144952	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376604	
		Phaeophytin-a	0.90	U	ug/L	P376604	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376604	
2144969	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

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.
 Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG2 Bayside #1

Collection Date/Time: 12/17/2019 12:50

Field ID: G5SD0065

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144953	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376604	
		Phaeophytin-a	0.90	U	ug/L	P376604	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376604	
2144970	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P376302	

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.
 Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG1 Dredgers#2

Collection Date/Time: 12/17/2019 14:36

Field ID: G5SD0096

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144954	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376604	
		Phaeophytin-a	0.90	U	ug/L	P376604	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376604	

Field ID: G5SD0096

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144971	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

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.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: 8073 @ENRG1 DredgersKey

Collection Date/Time: 12/17/2019 14:40

Field ID: G5SD0066

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2144955	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P376604	
		Phaeophytin-a	0.90	U	ug/L	P376604	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P376604	
2144972	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P376302	

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.

Enterolert/QT: Precision data is unavailable due to the small amount of analyte in the QC sample.

Non-Conformance Report

NCR ID: 8091

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144942	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144943	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144944	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144945	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144946	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144947	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144948	

NCR Type: ANALYSIS

NCR Category: Analytical Measurement

Observation: Duplicate precision data for the batch is not available due to equipment malfunction. During sample extraction, the tissue grinder stopped working due to a failed electrical connection before the duplicate could be analyzed.

Resolution: Customers have been notified. Extracted samples will be reported without precision data.

Authorized by/Date: Amelia G. Rankin 1/15/2020

NCR ID: 8100

<u>Event(s)</u>	<u>Job(s)</u>	<u>Sample(s)</u>	<u>Test(s)</u>
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144949	
SO-DIST-2019-12-18-01	TLH-2019-12-18-16	2144950	

NCR Type: ANALYSIS

NCR Category: Analytical Measurement

Observation: Chlorophyll samples were taken out of the freezer for approximately 1.5 hours and then re-frozen prior to analysis. An electrical malfunction with the tissue grinder prevented sample extraction when the samples were originally thawed.

Resolution: Customer has been notified and data will be J-qualified.

Authorized by/Date: Cheryl A. Swanson 1/13/2020

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: Enterolert/QT
Batch ID: P376302

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

Reference Method: SM 10200 H (mod.)
Batch ID: P376592

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: P376604

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: P376699

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P376592

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	92.8		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P376604

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	98.2		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P376699

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	109		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P376699

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2146240	Chlorophyll-a, Corrected	7.74	Sample	P	0 - 25
2146240	Chlorophyll-a, Uncorrected	5.11	Sample	P	0 - 25
2146240	Phaeophytin-a	6.11	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	92.8				
	Chlorophyll-a, Corrected	98.2				
	Chlorophyll-a, Corrected	109			7.74	
	Chlorophyll-a, Uncorrected				5.11	
	Phaeophytin-a				6.11	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2144959, 2144960, 2144961, 2144962, 2144963, 2144964, 2144965, 2144966, 2144967, 2144968, 2144969, 2144970, 2144971, 2144972
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2144942, 2144943, 2144944, 2144945, 2144946, 2144947, 2144948, 2144949, 2144950, 2144951, 2144952, 2144953, 2144954, 2144955

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	12/18/2019	12/18/2019 15:22	Anthony Mirabito	12/19/2019 15:52	Anthony Mirabito	2144959, 2144960, 2144961, 2144962, 2144963, 2144964, 2144965, 2144966, 2144967, 2144968, 2144969, 2144970, 2144971, 2144972
SM 10200 H (mod.)	12/18/2019	12/18/2019 13:50	Peterson Janvier	01/02/2020 14:02	Yuliya Danyuk	2144951, 2144952, 2144953, 2144954, 2144955
	12/18/2019	12/18/2019 13:50	Peterson Janvier	01/07/2020 10:37	Yuliya Danyuk	2144949, 2144950
	12/18/2019	12/18/2019 13:50	Peterson Janvier	12/27/2019 10:24	Yuliya Danyuk	2144942, 2144943, 2144944, 2144945, 2144946, 2144947, 2144948