

Biological Analysis Report

NE-DIST-2019-07-16-02

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

Event Description: **GTM NERR-Guana River SMP = 7 Sites + 1 Field Blank**

Request ID: **RQ-2019-07-15-05**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
MS 3560
Tallahassee, FL 32399-2400
Attn: Alicia Hogue

For additional information please contact
Cheryl Swanson - Administrator
Jacqueline Savage - Microbiology
Diane Power - Bench Biology
Andrew Tintle - Aquatic Toxicology
Puja Jasrotia, Ph.D. - Molecular Biology
Amelia Rankin - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Cheryl A. Swanson, Program Administrator

Date Certified: 14-AUG-2019 08:57



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: DEPGR3

Collection Date/Time: 07/15/2019 09:45

Field ID: GTMGR3NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103458	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.0		ug/L	P368065	
		Phaeophytin-a	1.7	I	ug/L	P368065	
		Chlorophyll-a, Uncorrected	8.3		ug/L	P368065	
2103466	Enterolert/QT	Enterococci-Quant- Tray	10.0	UQ	MPN/100 mL	P367638	
	SM 9223 Quanti-Tray	Escherichia Coli-Quant- Tray	31.0	A JQ	MPN/100 mL	P367638	RPD
2103473	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P367862	

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.

SM 9223 Quanti-Tray: Result is J-qualified due to a lab replicate precision failure.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGR2

Collection Date/Time: 07/15/2019 10:10

Field ID: GTMGRNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103459	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.7		ug/L	P368065	
		Phaeophytin-a	1.3	I	ug/L	P368065	
		Chlorophyll-a, Uncorrected	9.8		ug/L	P368065	
2103467	Enterolert/QT	Enterococci-Quant- Tray	10.0	UQ	MPN/100 mL	P367638	
	SM 9223 Quanti-Tray	Escherichia Coli-Quant- Tray	52.0	Q	MPN/100 mL	P367638	RPD
2103474	SM 9222 D	Fecal Coliforms-Membrane Filter	3	BQ	cfu/100 mL	P367862	

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.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGR1

Collection Date/Time: 07/15/2019 10:30

Field ID: GTMGR1NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103460	SM 10200 H (mod.)	Chlorophyll-a, Corrected	8.7		ug/L	P368065	
		Phaeophytin-a	2.3	I	ug/L	P368065	
		Chlorophyll-a, Uncorrected	10		ug/L	P368065	
2103468	Enterolert/QT	Enterococci-Quant- Tray	10.0	Q	MPN/100 mL	P367638	
	SM 9223 Quanti-Tray	Escherichia Coli-Quant- Tray	10.0	Q	MPN/100 mL	P367638	RPD
2103475	SM 9222 D	Fecal Coliforms-Membrane Filter	2	BQ	cfu/100 mL	P367862	

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.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPGL4

Collection Date/Time: 07/15/2019 11:55

Field ID: GTMGL4NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103461	SM 10200 H (mod.)	Chlorophyll-a, Corrected	13		ug/L	P368065	
		Phaeophytin-a	1.3	I	ug/L	P368065	
		Chlorophyll-a, Uncorrected	15		ug/L	P368065	

Field ID: GTMGL4NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103469	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P367638	RPD
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	10.0	Q	MPN/100 mL	P367638	
2103476	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P367862	

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.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPLG3

Collection Date/Time: 07/15/2019 12:20

Field ID: GTMLMNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103462	SM 10200 H (mod.)	Chlorophyll-a, Corrected	27		ug/L	P368068	
		Phaeophytin-a	3.8	I	ug/L	P368068	
		Chlorophyll-a, Uncorrected	30		ug/L	P368068	
2103470	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P367638	RPD
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	10.0	UQ	MPN/100 mL	P367638	
2103477	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P367862	

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.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPLG2

Collection Date/Time: 07/15/2019 12:50

Field ID: GTMGL2NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103463	SM 10200 H (mod.)	Chlorophyll-a, Corrected	44	I	ug/L	P368068	
		Phaeophytin-a	20	U	ug/L	P368068	
		Chlorophyll-a, Uncorrected	43		ug/L	P368068	
2103471	Enterolert/QT	Enterococci-Quanti-Tray	41.0	Q	MPN/100 mL	P367638	RPD
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	364.0	Q	MPN/100 mL	P367638	
2103478	SM 9222 D	Fecal Coliforms-Membrane Filter	100	BQ	cfu/100 mL	P367862	

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.

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: DEPLG1

Collection Date/Time: 07/15/2019 13:15

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103464	SM 10200 H (mod.)	Chlorophyll-a, Corrected	16		ug/L	P368068	
		Phaeophytin-a	0.93	I	ug/L	P368068	
		Chlorophyll-a, Uncorrected	17		ug/L	P368068	
2103472	Enterolert/QT	Enterococci-Quanti-Tray	52.0	Q	MPN/100 mL	P367638	RPD
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	52.0	Q	MPN/100 mL	P367638	
2103479	SM 9222 D	Fecal Coliforms-Membrane Filter	130	BQ	cfu/100 mL	P367862	

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

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. SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range.							

Sample Location: FIELD BLANK

Collection Date/Time: 07/15/2019 09:36

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2103465	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.82	U	ug/L	P368068	
		Phaeophytin-a	0.90	U	ug/L	P368068	
		Chlorophyll-a, Uncorrected	0.60	U	ug/L	P368068	
2103480	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P367638	
	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	1.0	UQ	MPN/100 mL	P367638	RPD
2103481	SM 9222 D	Fecal Coliforms-Membrane Filter	No Result	O	cfu/100 mL	P367273	

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.
 SM 9222 D: See Non Conformance Report #7843.

Non-Conformance Report

NCR ID: 7843

Event(s)

NE-DIST-2019-07-16-02

Job(s)

TLH-2019-07-16-92

Sample(s)

2103481

Test(s)

FCOLI-MF

NCR Type: ANALYSIS

NCR Category: Analytical Measurement

Observation: Sample lost during analysis.

Resolution: Customer, Alicia Hogue, was notified. Result will be reported as No Result with an "O" qualifier.

Authorized by/Date: Cheryl A. Swanson 8/12/2019

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: P367638

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

Reference Method: SM 10200 H (mod.)

Batch ID: P368065

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 Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P368068

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 9222 D
Batch ID: P367862

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P368065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	88.2		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P368068

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	88.7		P	84 - 116

Quality Assurance Report Precision

Reference Method: Enterolert/QT
Batch ID: P367638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103147	Enterococci-Quanti-Tray	43.1	Sample	P	0 - 80

Reference Method: SM 10200 H (mod.)
Batch ID: P368065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103328	Chlorophyll-a, Corrected	3.72	Sample	P	0 - 25
2103328	Chlorophyll-a, Uncorrected	3.47	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P368068

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103493	Chlorophyll-a, Corrected	6.17	Sample	P	0 - 25
2103493	Chlorophyll-a, Uncorrected	2.30	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P367638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2103466	Escherichia Coli-Quanti-Tray	135	Sample	F	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	Precision	
				LCS	MS
Enterolert/QT	Enterococci-Quanti-Tray				43.1
SM 10200 H (mod.)	Chlorophyll-a, Corrected	88.2			3.72
	Chlorophyll-a, Corrected	88.7			6.17
	Chlorophyll-a, Uncorrected				3.47
	Chlorophyll-a, Uncorrected				2.30
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				135

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2103466, 2103467, 2103468, 2103469, 2103470, 2103471, 2103472, 2103480
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2103458, 2103459, 2103460, 2103461, 2103462, 2103463, 2103464, 2103465
SM 9222 D / E31780	Fecal coliforms by membrane filter method - non-chlorinated water systems	2103473, 2103474, 2103475, 2103476, 2103477, 2103478, 2103479, 2103481
SM 9223 Quanti-Tray / E31780	Escherichia coli by Colilert 18 Quanti-Tray method-chlorinated water systems	2103466, 2103467, 2103468, 2103469, 2103470, 2103471, 2103472, 2103480

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	07/16/2019	07/16/2019 15:42	Jessica Fetgatter	07/17/2019 16:39	Edwin Gonzalez-Soto	2103466, 2103467, 2103468, 2103469, 2103470, 2103471, 2103472, 2103480
SM 10200 H (mod.)	07/16/2019	07/16/2019 14:02	Edwin Gonzalez-Soto	07/25/2019 12:26	Yuliya Danyuk	2103458, 2103459, 2103460, 2103461
	07/16/2019	07/16/2019 14:02	Edwin Gonzalez-Soto	07/26/2019 09:07	Yuliya Danyuk	2103462, 2103463, 2103464, 2103465
SM 9222 D	07/16/2019	07/16/2019 15:48	Carina A. Tull	07/17/2019 15:36	Carina A. Tull	2103473, 2103474
	07/16/2019	07/16/2019 16:18	Carina A. Tull	07/17/2019 15:36	Carina A. Tull	2103475, 2103476, 2103477, 2103478, 2103479
SM 9223 Quanti-Tray	07/16/2019	07/16/2019 16:45	Carina A. Tull	07/17/2019 15:36	Carina A. Tull	2103481
	07/16/2019	07/16/2019 16:38	Jessica Fetgatter	07/17/2019 11:30	Jessica Fetgatter	2103466, 2103467, 2103468, 2103469, 2103470, 2103471, 2103472, 2103480