

Biological Analysis Report

NE-DIST-2019-05-03-01

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-2019-05-06-01**

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: Jacqueline Savage, Environmental Administrator

Date Certified: 03-JUN-2019 15:02



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: 05/02/2019 09:10

Field ID: GTMGR3NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083190	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.5		ug/L	P363682	
		Phaeophytin-a	2.1	U	ug/L	P363682	
		Chlorophyll-a, Uncorrected	7.1		ug/L	P363682	
2083198	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P363488	
2083205	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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: 05/02/2019 09:25

Field ID: GTMGRNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083191	SM 10200 H (mod.)	Chlorophyll-a, Corrected	7.1		ug/L	P363682	
		Phaeophytin-a	1.6	I	ug/L	P363682	
		Chlorophyll-a, Uncorrected	8.3		ug/L	P363682	
2083199	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P363488	
2083206	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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: 05/02/2019 09:42

Field ID: GTMGR1NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083192	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14		ug/L	P363682	
		Phaeophytin-a	2.2	I	ug/L	P363682	
		Chlorophyll-a, Uncorrected	16		ug/L	P363682	
2083200	Enterolert/QT	Enterococci-Quanti-Tray	31.0	Q	MPN/100 mL	P363488	
2083207	SM 9222 D	Fecal Coliforms-Membrane Filter	7	BQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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: 05/02/2019 10:58

Field ID: GTMGL4NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083193	SM 10200 H (mod.)	Chlorophyll-a, Corrected	38		ug/L	P363682	
		Phaeophytin-a	5.8	I	ug/L	P363682	
		Chlorophyll-a, Uncorrected	43		ug/L	P363682	
2083201	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P363488	
2083208	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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

Sample Location: DEPGL3

Collection Date/Time: 05/02/2019 11:21

Field ID: GTMLMNUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083194	SM 10200 H (mod.)	Chlorophyll-a, Corrected	78		ug/L	P363682	
		Phaeophytin-a	8.2	I	ug/L	P363682	
		Chlorophyll-a, Uncorrected	86		ug/L	P363682	
2083202	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P363488	
2083209	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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: 05/02/2019 11:47

Field ID: GTMGL2NUT

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083195	SM 10200 H (mod.)	Chlorophyll-a, Corrected	14		ug/L	P363682	
		Phaeophytin-a	4.0	I	ug/L	P363682	
		Chlorophyll-a, Uncorrected	17		ug/L	P363682	
2083203	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P363488	
2083210	SM 9222 D	Fecal Coliforms-Membrane Filter	600	ZQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

SM 9222 D: Precision data for QC sample is unavailable due to the colony count falling outside of method acceptable range. See Non-Conformance Report #7704.

Sample Location: DEPLG1

Collection Date/Time: 05/02/2019 12:14

Field ID: GTMGL1NUT

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083196	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.4	I	ug/L	P363682	
		Phaeophytin-a	2.1	U	ug/L	P363682	
		Chlorophyll-a, Uncorrected	6.2		ug/L	P363682	
2083204	Enterolert/QT	Enterococci-Quanti-Tray	1.0	UQ	MPN/100 mL	P363488	
2083211	SM 9222 D	Fecal Coliforms-Membrane Filter	18	BQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

SM 9222 D: Laboratory duplicate result is 8 B. Precision data for this duplicate is unavailable due to the colony count falling outside of method acceptable range.

Sample Location: FIELD BLANK

Collection Date/Time: 05/02/2019 08:50

Field ID: FIELD BLANK

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2083197	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.96	U	ug/L	P363682	
		Phaeophytin-a	1.0	U	ug/L	P363682	
		Chlorophyll-a, Uncorrected	0.70	U	ug/L	P363682	
2083212	Enterolert/QT	Enterococci-Quanti-Tray	1.0	UQ	MPN/100 mL	P363488	
2083213	SM 9222 D	Fecal Coliforms-Membrane Filter	1	UQ	cfu/100 mL	P363467	

Ref. Method and Comment:

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

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

Non-Conformance Report

NCR ID: 7704

Event(s)

NE-DIST-2019-05-03-01

Job(s)

TLH-2019-05-03-38

Sample(s)

2083210

Test(s)

NCR Type: REPORTING

NCR Category: Report Information

Observation: No dilutions produced results in a countable range.

Resolution: Result is estimated based on the sample dilution with positive colonies. The more dilute sample result was 100 U.

Authorized by/Date: Cheryl A. Swanson 5/31/2019

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: P363488

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

Reference Method: SM 10200 H (mod.)

Batch ID: P363682

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: P363467

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: P363682

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	108		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)

Batch ID: P363682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P363682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2082915	Chlorophyll-a, Corrected	7.01	Sample	P	0 - 25
2082915	Chlorophyll-a, Uncorrected	5.67	Sample	P	0 - 25
2082915	Phaeophytin-a	2.24	Sample	P	0 - 25

* 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	108			7.01	
	Chlorophyll-a, Uncorrected				5.67	
	Phaeophytin-a				2.24	

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
Enterolert/QT / E31780	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2083198, 2083199, 2083200, 2083201, 2083202, 2083203, 2083204, 2083212
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2083190, 2083191, 2083192, 2083193, 2083194, 2083195, 2083196, 2083197
SM 9222 D / E31780	Fecal coliforms by membrane filter method - non-chlorinated water systems	2083205, 2083206, 2083207, 2083208, 2083209, 2083210, 2083211, 2083213

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	05/03/2019	05/03/2019 13:36	Jennifer Mihalic	05/04/2019 13:37	Peterson Janvier	2083198, 2083199, 2083200, 2083201, 2083202, 2083203, 2083204, 2083212
SM 10200 H (mod.)	05/03/2019	05/03/2019 13:00	Christiana McCrimmon	05/08/2019 16:17	Carina A. Tull	2083190, 2083191, 2083192, 2083193, 2083194, 2083195, 2083196, 2083197
SM 9222 D	05/03/2019	05/03/2019 13:57	Peterson Janvier	05/04/2019 12:55	Peterson Janvier	2083205, 2083206
	05/03/2019	05/03/2019 14:27	Peterson Janvier	05/04/2019 12:55	Peterson Janvier	2083207, 2083208, 2083209, 2083210, 2083211
	05/03/2019	05/03/2019 14:36	Peterson Janvier	05/04/2019 12:55	Peterson Janvier	2083213