Biological Analysis Report

NE-DIST-2021-11-04-02

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

Event Description: **GTMNERR - Guana River SMP**
Request ID: **RQ-2021-11-01-42**
Customer: **NE-DIST**
Project ID: **SMP**

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This Report replaces the previous Report Serial Number: 0133822

Report Comment: Unauthorized to correct a Field ID.

Revision certified by: Puja Jasrotia, Environmental Administrator

Date Certified: 02-DEC-2021 13:48

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: 11/03/2021 08:55**

Field ID: GTMGR3NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288187	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.3	I	ug/L	P406154	
		Phaeophytin-a	2.0	U	ug/L	P406154	
		Chlorophyll-a, Uncorrected	6.0		ug/L	P406154	

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: DEPGR3 **Collection Date/Time: 11/03/2021 08:55**

Field ID: GTMGR3NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288195	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P406168	
2288202	SM 9222 D	Fecal Coliforms-Membrane Filter	5	BQ	cfu/100 mL	P406116	

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: 11/03/2021 09:15**

Field ID: GTMGRNUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288188	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.8		ug/L	P406154	
		Phaeophytin-a	2.1	U	ug/L	P406154	
		Chlorophyll-a, Uncorrected	6.4	A	ug/L	P406154	

Ref. Method and Comment:
SM 10200 H (mod.): Laboratory duplicate result is 5.8 I for Chlorophyll-a Corrected and 2.1 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

Sample Location: DEPGR2 **Collection Date/Time: 11/03/2021 09:15**

Field ID: GTMGRNUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288196	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P406168	
2288203	SM 9222 D	Fecal Coliforms-Membrane Filter	5	BQ	cfu/100 mL	P406116	

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: 11/03/2021 09:31**

Field ID: GTMGR1NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288189	SM 10200 H (mod.)	Chlorophyll-a, Corrected	6.7		ug/L	P406154	
		Phaeophytin-a	1.2	I	ug/L	P406154	
		Chlorophyll-a, Uncorrected	7.7		ug/L	P406154	

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: DEPGR1 **Collection Date/Time: 11/03/2021 09:31**

Field ID: GTMGR1NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288197	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P406168	
2288204	SM 9222 D	Fecal Coliforms-Membrane Filter	50	Q	cfu/100 mL	P406116	

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: 11/03/2021 11:00**

Field ID: GTMGL4NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288190	SM 10200 H (mod.)	Chlorophyll-a, Corrected	19		ug/L	P406154	
		Phaeophytin-a	2.0	I	ug/L	P406154	
		Chlorophyll-a, Uncorrected	21		ug/L	P406154	

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: DEPGL4 **Collection Date/Time: 11/03/2021 11:00**

Field ID: GTMGL4NUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288198	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P406168	
2288205	SM 9222 D	Fecal Coliforms-Membrane Filter	5	BQ	cfu/100 mL	P406116	

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: 11/03/2021 11:26**

Field ID: GTMLMNUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288191	SM 10200 H (mod.)	Chlorophyll-a, Corrected	35		ug/L	P406154	
		Phaeophytin-a	6.5	I	ug/L	P406154	
		Chlorophyll-a, Uncorrected	40		ug/L	P406154	

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: DEPGL3 **Collection Date/Time: 11/03/2021 11:26**

Field ID: GTMGLNUT Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288199	Enterolert/QT	Enterococci-Quanti-Tray	10.0	UQ	MPN/100 mL	P406168	
2288206	SM 9222 D	Fecal Coliforms-Membrane Filter	2	UQ	cfu/100 mL	P406116	

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: DEPGL2 **Collection Date/Time: 11/03/2021 11:57**

Field ID: GTMGL2NUT Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288192	SM 10200 H (mod.)	Chlorophyll-a, Corrected	38		ug/L	P406154	
		Phaeophytin-a	6.6		ug/L	P406154	
		Chlorophyll-a, Uncorrected	43		ug/L	P406154	

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: DEPGL2 **Collection Date/Time: 11/03/2021 11:57**

Field ID: GTMGL2NUT Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288200	Enterolert/QT	Enterococci-Quanti-Tray	41.0	Q	MPN/100 mL	P406168	
2288207	SM 9222 D	Fecal Coliforms-Membrane Filter	10	BQ	cfu/100 mL	P406116	

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: DEPGL1 **Collection Date/Time: 11/03/2021 12:20**

Field ID: GTMGL1NUT Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288193	SM 10200 H (mod.)	Chlorophyll-a, Corrected	17		ug/L	P406154	
		Phaeophytin-a	5.9		ug/L	P406154	
		Chlorophyll-a, Uncorrected	21		ug/L	P406154	

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: DEPGL1 **Collection Date/Time: 11/03/2021 12:20**

Field ID: GTMGL1NUT Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288201	Enterolert/QT	Enterococci-Quanti-Tray	10.0	Q	MPN/100 mL	P406168	
2288208	SM 9222 D	Fecal Coliforms-Membrane Filter	150	BQ	cfu/100 mL	P406116	

Ref. Method and Comment:
Enterolert/QT: Laboratory duplicate result is 10.0 U. 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.

Quality Assurance Report
Method Blank Results

Reference Method: Enterolert/QT
Batch ID: P406168

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

Reference Method: SM 10200 H (mod.)
Batch ID: P406154

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.82	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P406154

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

Reference Method: SM 9222 D
Batch ID: P406116

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: P406154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	90.0		P	84 - 116

Quality Assurance Report
Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P406154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288188	Chlorophyll-a, Uncorrected	2.29	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	Precision		
				LCS	SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	90.0				
	Chlorophyll-a, Uncorrected				2.29	

Reference Method Descriptions

Method	Description	Associated Samples
Enterolert/QT	Enterococci by Enterolert Quanti-Tray method - non-chlorinated water systems	2288195, 2288196, 2288197, 2288198, 2288199, 2288200, 2288201
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2288187, 2288188, 2288189, 2288190, 2288191, 2288192, 2288193
SM 9222 D	Fecal coliforms by membrane filter method - non-chlorinated water systems	2288202, 2288203, 2288204, 2288205, 2288206, 2288207, 2288208

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
Enterolert/QT	11/04/2021	11/04/2021 16:26	Amber S. Eells	11/05/2021 16:33	Amber S. Eells	2288195, 2288196, 2288197, 2288198, 2288199, 2288200, 2288201
SM 10200 H (mod.)	11/04/2021	11/04/2021 14:35	Joel Wharton	11/08/2021 10:00	Jillian G Hanley	2288187, 2288188, 2288189, 2288190, 2288191, 2288192, 2288193
SM 9222 D	11/04/2021	11/04/2021 15:50	Mia Jane Harrell	11/05/2021 14:10	Joel Wharton	2288202, 2288203, 2288204, 2288205, 2288206
	11/04/2021	11/04/2021 16:05	Mia Jane Harrell	11/05/2021 14:10	Joel Wharton	2288207, 2288208