

Biological Analysis Report

SW-DIST-2018-01-25-01

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

Event Description: **Pinellas LR5- Joe's & PP Ditch#5**
Request ID: **RQ-2018-01-22-34**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Judy Ashton

For additional information please contact
Cheryl Swanson - Administrator
J. Marshall Faircloth - Aquatic Toxicology
Jacqueline Savage - Bench Biology
Jacqueline Savage - Microbiology
Puja Jasrotia, Ph.D. - Molecular Biology
Jennifer Walters - Taxonomy (Invertebrate & Algal)
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8177

Certified by: Puja Jasrotia,

Date Certified: 09-MAR-2018 14:10

A handwritten signature in black ink, appearing to be 'Puja Jasrotia', with a horizontal line underneath it.

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 group are included in this report: Molecular.

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 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: JOE'S CREEK @ 62ND & 42ND

Collection Date/Time: 01/24/2018 14:30

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1962140	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P338707	
	SOP-PCR-1.3	GFD-purified-qPCR**	82	TJ	TSC/100 mL	P338789	LCS, MS
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

SOP-PCR-1.3: Quality control failure(s) observed. See QA report for details.

SOP-PCR-4.0: The filter sample and associated micro sample have same collection date but different collection times.

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0

Batch ID: P338707

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.3

Batch ID: P338789

Component	Result	Code	Units
GFD-purified-qPCR	340	U	TSC/100 mL
GFD-purified-qPCR	340	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P338707

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	122	114	P/P	50 - 175

Reference Method: SOP-PCR-1.3

Batch ID: P338789

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
GFD-purified-qPCR	12.4	123	F/P	50 - 175
GFD-purified-qPCR	8.57	181	F/F	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0

Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958064	HF183-qPCR	108		P	50 - 175
1958092	HF183-qPCR	94.3		P	50 - 175
1958093	HF183-qPCR	86.7		P	50 - 175
1958094	HF183-qPCR	96.8		P	50 - 175
1958503	HF183-qPCR	83.7		P	50 - 175
1958586	HF183-qPCR	60.1		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1960208	HF183-qPCR	92.9		P	50 - 175
1960209	HF183-qPCR	83.9		P	50 - 175
1960210	HF183-qPCR	84.2		P	50 - 175
1961509	HF183-qPCR	93.7		P	50 - 175
1962140	HF183-qPCR	89.4	92.6	P/P	50 - 175
1963376	HF183-qPCR	97.2		P	50 - 175
1963584	HF183-qPCR	86.0		P	50 - 175

Reference Method: SOP-PCR-1.3
Batch ID: P338789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1958503	GFD-purified-qPCR	262		F	50 - 175
1960445	GFD-purified-qPCR	206		F	50 - 175
1962140	GFD-purified-qPCR	166	189	P/F	50 - 175
1963189	GFD-purified-qPCR	149		P	50 - 175
1963190	GFD-purified-qPCR	152		P	50 - 175
1964711	GFD-purified-qPCR	269		F	50 - 175
1965800	GFD-purified-qPCR	254		F	50 - 175
1965801	GFD-purified-qPCR	215		F	50 - 175
1967510	GFD-purified-qPCR	159		P	50 - 175
1967511	GFD-purified-qPCR	108		P	50 - 175
1967512	GFD-purified-qPCR	67.2		P	50 - 175
1967513	GFD-purified-qPCR	0.0		F	50 - 175
1967514	GFD-purified-qPCR	193		F	50 - 175
1967891	GFD-purified-qPCR	58.8		P	50 - 175
1967892	GFD-purified-qPCR	129		P	50 - 175
1967893	GFD-purified-qPCR	120		P	50 - 175
1967894	GFD-purified-qPCR	120		P	50 - 175
1967895	GFD-purified-qPCR	259		F	50 - 175

Quality Assurance Report Precision

Reference Method: SOP-PCR-1.0
Batch ID: P338707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	HF183-qPCR	3.51	Spike	P	0 - 25

Reference Method: SOP-PCR-1.3
Batch ID: P338789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962140	GFD-purified-qPCR	13.5	Spike	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 Surrogates

Lab Sample ID: 1962140
 Field Sample ID: G5SW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	108	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery			MS % Recovery			LCS	Precision SMP	MS
SOP-PCR-1.0	HF183-qPCR	114	122		93.7	89.4	92.6			3.51
SOP-PCR-1.3	GFD-purified-qPCR	12.4	181	8.57	166	189	149			13.5
		123			152					

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1962140
SOP-PCR-1.3 / E31780	Detection and quantification of bird specific Helicobacter GFD genetic marker with quantitative polymerase chain reaction	1962140
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1962140

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SOP-PCR-1.0	01/25/2018	01/25/2018 14:30	Avril Wood	02/07/2018	Sarah Menz	1962140
SOP-PCR-1.3	01/25/2018	01/25/2018 14:30	Mailin Lopez	02/21/2018	Sarah Menz	1962140
SOP-PCR-4.0	01/25/2018	01/25/2018 14:30	Mailin Lopez	03/07/2018	Puja Jasrotia	1962140