

Biological Analysis Report

SE-DIST-2020-01-17-01

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

Event Description: **SMP- Kevin (Odd Months)**

Request ID: **RQ-2020-01-13-15**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Jacqueline Savage, Environmental Administrator

Date Certified: 14-FEB-2020 16:41

A handwritten signature in black ink that reads "Jackie Savage". The signature is written in a cursive, flowing style.

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: Taylor Creek @ 39th St.

Collection Date/Time: 01/16/2020 11:00

Field ID: G1SE0024

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150234	SM 10200 H (mod.)	Chlorophyll-a, Corrected	12		ug/L	P378628	
		Phaeophytin-a	3.1		ug/L	P378628	
		Chlorophyll-a, Uncorrected	14		ug/L	P378628	
2150246	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	30.1	Q	MPN/100 mL	P377585	

Ref. Method and Comment:

SM 9223 Quanti-Tray: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: Taylor Creek @ 441

Collection Date/Time: 01/16/2020 11:30

Field ID: G1SE0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150243	SM 10200 H (mod.)	Chlorophyll-a, Corrected	21		ug/L	P377738	
		Phaeophytin-a	2.1	I	ug/L	P377738	
		Chlorophyll-a, Uncorrected	23		ug/L	P377738	
2150255	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	32.7	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: Taylor Creek @ 70

Collection Date/Time: 01/16/2020 14:00

Field ID: G1SE0011

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150245	SM 10200 H (mod.)	Chlorophyll-a, Corrected	320		ug/L	P377738	
		Phaeophytin-a	22		ug/L	P377738	
		Chlorophyll-a, Uncorrected	340		ug/L	P377738	
2150257	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	172.6	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: Taylor Creek @ 98

Collection Date/Time: 01/16/2020 14:50

Field ID: G1SE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150235	SM 10200 H (mod.)	Chlorophyll-a, Corrected	97		ug/L	P378628	
		Phaeophytin-a	23		ug/L	P378628	
		Chlorophyll-a, Uncorrected	110		ug/L	P378628	
2150247	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	79.4	Q	MPN/100 mL	P377585	

Ref. Method and Comment:

SM 9223 Quanti-Tray: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-63 @ SE 59th Blvd.

Collection Date/Time: 01/16/2020 14:00

Field ID: G1SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150244	SM 10200 H (mod.)	Chlorophyll-a, Corrected	33		ug/L	P377738	

Field ID: G1SE0029

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150244	SM 10200 H (mod.)	Phaeophytin-a	0.90	U	ug/L	P377738	
		Chlorophyll-a, Uncorrected	35		ug/L	P377738	
2150256	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	47.4	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-63 canal @ SE 86th Blvd.**Collection Date/Time: 01/16/2020 14:10****Field ID: G1SE0022**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150236	SM 10200 H (mod.)	Chlorophyll-a, Corrected	33		ug/L	P377738	
		Phaeophytin-a	1.4	U	ug/L	P377738	
		Chlorophyll-a, Uncorrected	34		ug/L	P377738	
2150248	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	178.5	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-62 upstream of S-154C**Collection Date/Time: 01/16/2020 14:45****Field ID: G1SE0028**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150237	SM 10200 H (mod.)	Chlorophyll-a, Corrected	47		ug/L	P378628	
		Phaeophytin-a	3.0	I	ug/L	P378628	
		Chlorophyll-a, Uncorrected	51		ug/L	P378628	
2150249	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	3.1	Q	MPN/100 mL	P377585	

Ref. Method and Comment:

SM 9223 Quanti-Tray: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-62 upstream of S-154C**Collection Date/Time: 01/16/2020 15:00****Field ID: G1SE0028_Dup**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150238	SM 10200 H (mod.)	Chlorophyll-a, Corrected	48		ug/L	P377738	
		Phaeophytin-a	2.8	U	ug/L	P377738	
		Chlorophyll-a, Uncorrected	51		ug/L	P377738	
2150250	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	7.4	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: Popash Slough @ 67th Dr.**Collection Date/Time: 01/16/2020 10:30****Field ID: G1SE0027**

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150239	SM 10200 H (mod.)	Chlorophyll-a, Corrected	30		ug/L	P377738	

Field ID: G1SE0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150239	SM 10200 H (mod.)	Phaeophytin-a	6.6		ug/L	P377738	
		Chlorophyll-a, Uncorrected	35		ug/L	P377738	
2150251	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	35.2	AQ	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-65 upstream of S-153

Collection Date/Time: 01/16/2020 12:20

Field ID: G1SE0050

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150240	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.3		ug/L	P377738	
		Phaeophytin-a	0.90	U	ug/L	P377738	
		Chlorophyll-a, Uncorrected	5.7		ug/L	P377738	
2150252	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	19.5	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: Lemkin Creek @ 78

Collection Date/Time: 01/16/2020 12:50

Field ID: G1SE0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150241	SM 10200 H (mod.)	Chlorophyll-a, Corrected	9.5		ug/L	P377738	
		Phaeophytin-a	2.2	I	ug/L	P377738	
		Chlorophyll-a, Uncorrected	11		ug/L	P377738	
2150253	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	50.0	Q	MPN/100 mL	P377585	

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: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Sample Location: L-63N canal @ SR 70

Collection Date/Time: 01/16/2020 13:25

Field ID: G1SE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2150242	SM 10200 H (mod.)	Chlorophyll-a, Corrected	36	A	ug/L	P377738	
		Phaeophytin-a	1.6	U	ug/L	P377738	
		Chlorophyll-a, Uncorrected	38	A	ug/L	P377738	
2150254	SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray	19.9	Q	MPN/100 mL	P377585	

Ref. Method and Comment:

SM 10200 H (mod.): Laboratory duplicate result is 1.6 U for Phaeophytin-a. Precision data is unavailable due to the small amount of analyte in the QC sample.

SM 9223 Quanti-Tray: Method blank result (1.0 U) associated with this batch does not appear in the Quality Assurance Report.

Quality Assurance Report

Method Blank Results

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
Batch ID: P377738

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: P378628

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 Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P377738

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	104		P	84 - 116

Reference Method: SM 10200 H (mod.)
Batch ID: P378628

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	115		P	84 - 116

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P377738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150242	Chlorophyll-a, Corrected	3.13	Sample	P	0 - 25
2150242	Chlorophyll-a, Uncorrected	3.26	Sample	P	0 - 25

Reference Method: SM 10200 H (mod.)
Batch ID: P378628

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150170	Chlorophyll-a, Corrected	0.386	Sample	P	0 - 25
2150170	Chlorophyll-a, Uncorrected	0.949	Sample	P	0 - 25
2150170	Phaeophytin-a	3.80	Sample	P	0 - 25

Quality Assurance Report Precision

Reference Method: SM 9223 Quanti-Tray
 Batch ID: P377585

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2150251	Escherichia Coli-Quanti-Tray	28.7	Sample	P	0 - 80

* 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	104			3.13	
	Chlorophyll-a, Corrected	115			0.386	
	Chlorophyll-a, Uncorrected				3.26	
	Chlorophyll-a, Uncorrected				0.949	
	Phaeophytin-a				3.80	
SM 9223 Quanti-Tray	Escherichia Coli-Quanti-Tray				28.7	

Reference Method Descriptions

Method	Description	Associated Samples
SM 10200 H (mod.)	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	2150234, 2150235, 2150236, 2150237, 2150238, 2150239, 2150240, 2150241, 2150242, 2150243, 2150244, 2150245
SM 9223 Quanti-Tray	Escherichia coli by Colilert 18 Quanti-Tray method-chlorinated water systems	2150246, 2150247, 2150248, 2150249, 2150250, 2150251, 2150252, 2150253, 2150254, 2150255, 2150256, 2150257

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 10200 H (mod.)	01/17/2020	01/17/2020 14:11	Yuliya Danyuk	01/23/2020 16:26	Jessica Fetgatter	2150234, 2150235, 2150237
	01/17/2020	01/17/2020 14:11	Yuliya Danyuk	01/24/2020 10:50	Yuliya Danyuk	2150236, 2150238, 2150239, 2150240, 2150241, 2150242, 2150243, 2150244, 2150245
SM 9223 Quanti-Tray	01/17/2020	01/17/2020 16:45	Yuliya Danyuk	01/18/2020 14:25	Jennifer Mihalic	2150246, 2150247, 2150248, 2150249, 2150250, 2150251, 2150252, 2150253, 2150254, 2150255, 2150256, 2150257