

Chemical Analysis Report

CEN-DIST-2019-11-14-01

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

Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2019-11-11-49**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 03-DEC-2019 11:58

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored rectangular background.

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: Nutrients and Pesticides.

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: Haynes Creek @ 300m Downstream of CR44

Collection Date/Time: 11/13/2019 11:01

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135988	EPA 8321B	Sucralose**	0.078		ug/L	P374412	MS

Sample Location: Haynes Creek @ just downstream of Burell Lock

Collection Date/Time: 11/13/2019 11:17

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135989	EPA 8321B	Sucralose**	0.075		ug/L	P374412	MS

Sample Location: Sweetwater Creek @ Florida Avenue

Collection Date/Time: 11/13/2019 13:20

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135990	EPA 350.1 Rev. 2.0	Ammonia-N	0.075		mg N/L	P374462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P374519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P374285	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P374708	
2135992	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P374274	
2135994	SM 2540 D-97	TSS	2	I	mg/L	P374820	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Salt Creek @ Packard Avenue

Collection Date/Time: 11/13/2019 13:37

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2135991	EPA 350.1 Rev. 2.0	Ammonia-N	0.11		mg N/L	P374462	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P374519	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P374285	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P374708	
2135993	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.16		mg P/L	P374274	
2135995	SM 2540 D-97	TSS	2	I	mg/L	P374820	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374462

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374519

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374285

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374708

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8321B
Batch ID: P374412

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P374820

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374462

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374519

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	101		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	95.8		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P374412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	106		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P374462

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135942	Ammonia-N	100	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P374519

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135929	Kjeldahl Nitrogen	98.0	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P374285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135990	NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P374708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2136133	Total-P	90.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P374274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135904	O-Phosphate-P	95.0	96.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P374412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2135814	Sucralose	22.3	29.1	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P374462

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135942	Ammonia-N	0.192	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P374519

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135929	Kjeldahl Nitrogen	8.04	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P374285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135990	NO2NO3-N	0.391	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P374708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2136133	Total-P	10.4	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P374274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135904	O-Phosphate-P	1.36	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P374412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2135814	Sucralose	24.6	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2135988
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	42.9	P	30 - 160

Lab Sample ID: 2135989
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	41.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A95752

Included Lab Sample IDs: 2135990, 2135991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A95753

Included Lab Sample IDs: 2135992, 2135993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.9	97.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A95834

Included Lab Sample IDs: 2135990, 2135991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A95849

Included Lab Sample IDs: 2135988, 2135989

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	88.9	96.0	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A95884

Included Lab Sample IDs: 2135990, 2135991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.2	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A95968

Included Lab Sample IDs: 2135990, 2135991

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	98.8	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	100	99.9		0.192
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	98.0	108		8.04
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.0			0.391
EPA 365.1 Rev. 2.0	Total-P	104	90.6	101		10.4
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	95.8	95.0	96.3		1.36
EPA 8321B	Sucralose	106	22.3	29.1		24.6

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2135990, 2135991
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2135990, 2135991
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2135990, 2135991
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2135990, 2135991
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2135992, 2135993
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2135988, 2135989
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2135994, 2135995

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 350.1 Rev. 2.0	11/14/2019			11/19/2019 12:21	Ping Hua	2135990
	11/14/2019			11/19/2019 12:22	Ping Hua	2135991
EPA 351.2 Rev. 2.0	11/14/2019	11/20/2019 12:30	Sima Feizi	11/21/2019 17:03	Jhamieka S. Greenwood	2135990
	11/14/2019	11/20/2019 12:30	Sima Feizi	11/21/2019 17:04	Jhamieka S. Greenwood	2135991
EPA 353.2 Rev. 2.0	11/14/2019			11/15/2019 08:58	Beverly Y. Sanders	2135990
	11/14/2019			11/15/2019 09:04	Beverly Y. Sanders	2135991
EPA 365.1 Rev. 2.0	11/14/2019	11/22/2019 13:04	Yen Ta	11/26/2019 14:14	Benjamin T. Nordmann	2135990
	11/14/2019	11/22/2019 13:04	Yen Ta	11/26/2019 14:15	Benjamin T. Nordmann	2135991
EPA 365.1 Rev. 2.0 dissolved	11/14/2019			11/14/2019 16:47	Samantha Davila	2135992
	11/14/2019			11/14/2019 16:48	Samantha Davila	2135993
EPA 8321B	11/14/2019	11/19/2019 14:00	Rebecca Ware	11/19/2019 23:22	Rebecca Ware	2135988
	11/14/2019	11/19/2019 14:00	Rebecca Ware	11/19/2019 23:33	Rebecca Ware	2135989
SM 2540 D-97	11/14/2019			11/15/2019 15:21	Yijie Li	2135994, 2135995