

Chemical Analysis Report

CEN-DIST-2020-03-06-01

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-2020-03-09-34**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

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Date Certified: 23-MAR-2020 10:55



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: 03/05/2020 12:00

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162956	EPA 8321B	Sucralose**	0.19		ug/L	P380454	

Sample Location: Haynes Creek @ just downstream of Burell Lock

Collection Date/Time: 03/05/2020 12:15

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162957	EPA 8321B	Sucralose**	0.24		ug/L	P380454	

Sample Location: Sweetwater Creek @ Florida Avenue

Collection Date/Time: 03/05/2020 14:30

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163011	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P380638	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P380382	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P380600	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P380492	
2163013	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P380221	
2163015	SM 2540 D-2011	TSS	6	I	mg/L	P380807	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Salt Creek @ Packard Avenue

Collection Date/Time: 03/05/2020 14:50

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2163012	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P380638	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P380382	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P380601	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P380642	
2163014	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P380221	
2163016	SM 2540 D-2011	TSS	8	IA	mg/L	P380807	

Ref. Method and Comment:

SM 2540 D-2011: 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: P380638

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380382

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380600

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380601

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380492

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380642

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380221

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

Reference Method: EPA 8321B
Batch ID: P380454

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-2011
Batch ID: P380807

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: P380638

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380382

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: P380600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380492

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380642

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: P380221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.4		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380454

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	98.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380638

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162884	Ammonia-N	102	95.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380382

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162906	Kjeldahl Nitrogen	95.3	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162906	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163012	NO2NO3-N	96.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162871	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163012	Total-P	105	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162885	O-Phosphate-P	96.9	93.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2160294	Sucralose	103	105	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380638

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162884	Ammonia-N	3.74	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162906	Kjeldahl Nitrogen	0.197	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162906	NO2NO3-N	0.501	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163012	NO2NO3-N	0.808	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162871	Total-P	1.25	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163012	Total-P	2.93	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162885	O-Phosphate-P	3.22	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2160294	Sucralose	1.22	Spike	P	0 - 30

Quality Assurance Report

Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2162956
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	92.2	P	30 - 160

Lab Sample ID: 2162957
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	105	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98043

Included Lab Sample IDs: 2163013, 2163014

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A98141

Included Lab Sample IDs: 2163011, 2163012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	97.5	P/P	90 - 110
Kjeldahl Nitrogen	96.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98176

Included Lab Sample IDs: 2163011, 2163012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98182

Included Lab Sample IDs: 2163011, 2163012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	103	P/P	90 - 110
Ammonia-N	103	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98193

Included Lab Sample IDs: 2162956, 2162957

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	102	97.0	P/P	60 - 160
Sucralose	97.0	109	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98209

Included Lab Sample IDs: 2163011

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98237

Included Lab Sample IDs: 2163012

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	101	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		LCS	Precision SMP	MS
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	102	95.7			3.74
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	95.3	95.1			0.197
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	100	99.5			0.501
	NO ₂ NO ₃ -N	99.5	96.5	98.0			0.808
EPA 365.1 Rev. 2.0	Total-P	103	102	104			1.25
	Total-P	104	105	100			2.93
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	96.9	93.7			3.22
EPA 8321B	Sucralose	98.2	103	105			1.22

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2163011, 2163012
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2163011, 2163012
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2163011, 2163012
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2163011, 2163012
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2163013, 2163014
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2162956, 2162957
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2163015, 2163016

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	03/06/2020			03/11/2020 14:58	Ping Hua	2163011
	03/06/2020			03/11/2020 15:07	Ping Hua	2163012
EPA 351.2 Rev. 2.0	03/06/2020	03/10/2020 12:43	Sima Feizi	03/11/2020 18:37	Jhamieka S. Greenwood	2163011
	03/06/2020	03/10/2020 12:43	Sima Feizi	03/11/2020 18:42	Jhamieka S. Greenwood	2163012
EPA 353.2 Rev. 2.0	03/06/2020			03/11/2020 11:09	Beverly Y. Sanders	2163011
	03/06/2020			03/11/2020 11:16	Beverly Y. Sanders	2163012
EPA 365.1 Rev. 2.0	03/06/2020	03/11/2020 14:54	Yen Ta	03/13/2020 15:57	Benjamin T. Nordmann	2163011
	03/06/2020	03/13/2020 14:30	Yen Ta	03/16/2020 11:01	Benjamin T. Nordmann	2163012
EPA 365.1 Rev. 2.0 dissolved	03/06/2020			03/06/2020 16:20	Carlos Miranda	2163013
	03/06/2020			03/06/2020 16:21	Carlos Miranda	2163014
EPA 8321B	03/06/2020	03/11/2020 14:53	Rebecca Ware	03/12/2020 15:08	Rebecca Ware	2162956
	03/06/2020	03/11/2020 14:53	Rebecca Ware	03/12/2020 15:44	Rebecca Ware	2162957
SM 2540 D-2011	03/06/2020			03/10/2020 15:32	Yijie Li	2163015, 2163016