

Chemical Analysis Report

CEN-DIST-2019-03-08-01

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

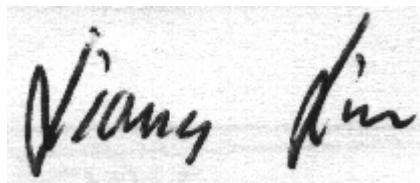
Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2019-03-04-56**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 25-MAR-2019 13:58

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: SWEETWATER CREEK @ FLORIDA AVE

Collection Date/Time: 03/07/2019 10:45

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068304	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P360423	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P360390	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P360358	
	EPA 365.1 Rev. 2.0	Total-P	0.16		mg P/L	P360439	
2068306	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.13		mg P/L	P360165	
2068308	SM 2540 D-97	TSS	3	IA	mg/L	P360658	

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 AVE

Collection Date/Time: 03/07/2019 11:03

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068305	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P360423	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P360391	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P360358	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P360439	
2068307	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.14		mg P/L	P360165	
2068309	SM 2540 D-97	TSS	4	I	mg/L	P360658	

Ref. Method and Comment:

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: HAYNES CREEK @ 300M DOWNSTREAM OF CR44

Collection Date/Time: 03/07/2019 12:55

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068292	EPA 8321B	Sucralose**	0.23		ug/L	P360189	

**Sample Location: HAYNES CREEK @ JUST DOWNSTREAM OF
BURELL LOCK**

Collection Date/Time: 03/07/2019 13:05

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068293	EPA 8321B	Sucralose**	0.14		ug/L	P360189	

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360423

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360390

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360391

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360439

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

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

Reference Method: EPA 8321B
Batch ID: P360189

Component	Result	Code	Units
Sucralose	0.010	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P360658

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: P360423

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360391

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

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: P360439

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	97.0	109	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360423

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068244	Ammonia-N	98.4	99.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068239	Kjeldahl Nitrogen	99.4	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068304	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068493	Total-P	98.1	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068288	O-Phosphate-P	93.9	94.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P360189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068137	Sucralose	104	101	P/P	40 - 150
2068137	Sucralose	101	95.7	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P360423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068244	Ammonia-N	1.18	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068239	Kjeldahl Nitrogen	0.884	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P360391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068305	Kjeldahl Nitrogen	12.9	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P360358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068304	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P360439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068493	Total-P	0.0303	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P360165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068288	O-Phosphate-P	0.711	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P360189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068137	Sucralose	2.67	Spike	P	0 - 30
2068137	Sucralose	4.66	Spike	P	0 - 30

* 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: 2068292
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	106	P	30 - 160

Lab Sample ID: 2068293
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	97.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89909

Included Lab Sample IDs: 2068306, 2068307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.7	94.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89981

Included Lab Sample IDs: 2068304, 2068305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A89982

Included Lab Sample IDs: 2068292, 2068293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.4	89.5	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90009

Included Lab Sample IDs: 2068304, 2068305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	101	P/P	90 - 110
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90011

Included Lab Sample IDs: 2068304, 2068305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90032

Included Lab Sample IDs: 2068304, 2068305

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	102	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	98.2		98.4	99.6			1.18
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1		99.4	98.6			0.884
	Kjeldahl Nitrogen	99.7						12.9
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100		102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	100		98.1	98.2			0.0303
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0		93.9	94.6			0.711
EPA 8321B	Sucralose	109	97.0	101	95.7	104		4.66
				101				2.67

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2068304, 2068305
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2068304, 2068305
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2068304, 2068305
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2068304, 2068305
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2068306, 2068307
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2068292, 2068293
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2068308, 2068309

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	03/08/2019			03/13/2019 11:38	Ping Hua	2068304
	03/08/2019			03/13/2019 11:39	Ping Hua	2068305
EPA 351.2 Rev. 2.0	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 10:25	Joseph Suarez	2068304
	03/08/2019	03/13/2019 12:00	Adrian Shelby	03/14/2019 10:33	Joseph Suarez	2068305
EPA 353.2 Rev. 2.0	03/08/2019			03/13/2019 10:45	Beverly Y. Sanders	2068304
	03/08/2019			03/13/2019 10:50	Beverly Y. Sanders	2068305
EPA 365.1 Rev. 2.0	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 12:27	Rosalyn Ballman	2068304
	03/08/2019	03/14/2019 13:10	Sima Feizi	03/15/2019 12:28	Rosalyn Ballman	2068305
EPA 365.1 Rev. 2.0 dissolved	03/08/2019			03/08/2019 16:48	Jhamieka S. Greenwood	2068306
	03/08/2019			03/08/2019 16:49	Jhamieka S. Greenwood	2068307
EPA 8321B	03/08/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 21:09	Juyoung Kim	2068292
	03/08/2019	03/12/2019 08:00	Rebecca Ware	03/12/2019 21:23	Juyoung Kim	2068293
SM 2540 D-97	03/08/2019			03/13/2019 14:03	Yijie Li	2068308, 2068309