

Chemical Analysis Report

CEN-DIST-2017-05-16-01

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

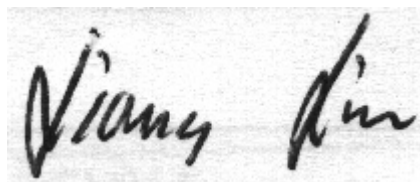
Event Description: **Lake Jessup_Haynes Creek BMAP**
Request ID: **RQ-2017-05-15-44**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-JUN-2017 12:11

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 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 @ just DS of Burell Lock

Collection Date/Time: 05/15/2017 11:18

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899500	EPA 8321B	Sucralose**	0.15		ug/L	P325291	

Sample Location: Sweetwater Creek @ Florida Ave

Collection Date/Time: 05/15/2017 13:26

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899501	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P325657	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P325538	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.14		mg N/L	P325427	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P325434	
1899503	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P325388	
1899505	SM 2540 D-97	TSS	8	I	mg/L	P325679	

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: 05/15/2017 13:46

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1899502	EPA 350.1 Rev. 2.0	Ammonia-N	0.048		mg N/L	P325657	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.45		mg N/L	P325538	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.13		mg N/L	P325427	
	EPA 365.1 Rev. 2.0	Total-P	0.14		mg P/L	P325434	
1899504	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.12		mg P/L	P325388	
1899506	SM 2540 D-97	TSS	4	I	mg/L	P325679	

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: P325657

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P325538

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P325427

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P325434

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P325388

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

Reference Method: EPA 8321B
 Batch ID: P325291

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
 Batch ID: P325679

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: P325657

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: P325538

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P325427

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: P325434

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P325388

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325388

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

Reference Method: EPA 8321B
Batch ID: P325291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	78.3		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P325657

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899449	Ammonia-N	102	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P325538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899502	Kjeldahl Nitrogen	97.9	95.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P325427

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899501	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P325434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899439	Total-P	108	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P325388

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899582	O-Phosphate-P	99.0	99.7	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P325291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1898904	Sucralose	59.7	55.5	P/P	40 - 140

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P325657

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899449	Ammonia-N	2.27	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P325538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899502	Kjeldahl Nitrogen	1.53	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P325427

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899501	NO2NO3-N	0.286	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P325434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899439	Total-P	1.79	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P325388

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899582	O-Phosphate-P	0.530	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P325291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1898904	Sucralose	6.94	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: 1899500
 Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	106	P	40 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A76466

Included Lab Sample IDs: 1899503, 1899504

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.0	P/P	90 - 110
O-Phosphate-P	98.7	98.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A76480

Included Lab Sample IDs: 1899501, 1899502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A76510

Included Lab Sample IDs: 1899501, 1899502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A76559

Included Lab Sample IDs: 1899500

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.8	65.2	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A76600

Included Lab Sample IDs: 1899501, 1899502

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A76606

Included Lab Sample IDs: 1899501, 1899502

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	99.0	P/P	90 - 110
Kjeldahl Nitrogen	98.9	99.0	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	102 105			2.27
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.5	97.9 95.9			1.53

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	100	102	102		0.286
EPA 365.1 Rev. 2.0	Total-P	102	108	110		1.79
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	99.0	99.7		0.530
EPA 8321B	Sucralose	78.3	59.7	55.5		6.94

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1899501, 1899502
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1899501, 1899502
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1899501, 1899502
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1899501, 1899502
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1899503, 1899504
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1899500
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1899505, 1899506

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	05/16/2017			05/22/2017	Julia Storbeck	1899501, 1899502
EPA 351.2 Rev. 2.0	05/16/2017	05/19/2017	Adrian Shelby	05/23/2017	Joseph Suarez	1899501, 1899502
EPA 353.2 Rev. 2.0	05/16/2017			05/17/2017	Beverly Y. Sanders	1899501, 1899502
EPA 365.1 Rev. 2.0	05/16/2017	05/17/2017	Vijayalakshmi Reddy	05/18/2017	Lipi Saha	1899501, 1899502
EPA 365.1 Rev. 2.0 dissolved	05/16/2017			05/16/2017 16:07	Anthony C. Onicha	1899503
	05/16/2017			05/16/2017 16:16	Anthony C. Onicha	1899504
EPA 8321B	05/16/2017	05/18/2017	Mohammad Ghaffari	05/18/2017	Mohammad Ghaffari	1899500
SM 2540 D-97	05/16/2017			05/17/2017	Yijie Li	1899505, 1899506