

Chemical Analysis Report

CEN-DIST-2019-01-03-01

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-2018-12-17-10**
Customer: **CEN-DIST**
Project ID: **LKJES-BMAP**

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

Date Certified: 16-JAN-2019 15:38

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: SWEETWATER CREEK @ FLORIDA AVENUE Collection Date/Time: 01/02/2019 13:05

Field ID: G2CE0123

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2051364	EPA 350.1 Rev. 2.0	Ammonia-N	0.099		mg N/L	P356899	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P356839	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.12		mg N/L	P356942	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P356826	
2051366	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.34		mg P/L	P356806	
2051368	SM 2540 D-97	TSS	4	I	mg/L	P357155	

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: 01/02/2019 13:35

Field ID: G2CE0088

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2051365	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P356899	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P356839	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P356942	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P356826	
2051367	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.18		mg P/L	P356806	
2051369	SM 2540 D-97	TSS	4	I	mg/L	P357155	

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: HAYNES CREEK @ JUST DS OF BURELL
LOCK**

Collection Date/Time: 01/02/2019 12:00

Field ID: G1CE0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2051362	EPA 8321B	Sucralose**	0.16		ug/L	P356761	

Sample Location: HAYNES CREEK @ 300M DS OF CR 44

Collection Date/Time: 01/02/2019 11:45

Field ID: G1CE0023

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2051363	EPA 8321B	Sucralose**	0.17		ug/L	P356761	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356899

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356839

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356942

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356826

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356806

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

Reference Method: EPA 8321B
Batch ID: P356761

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2540 D-97
Batch ID: P357155

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: P356899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356839

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	105		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356942

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: P356826

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356806

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

Reference Method: EPA 8321B
Batch ID: P356761

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	79.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P356899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051302	Ammonia-N	91.5	97.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P356839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051300	Kjeldahl Nitrogen	92.4	93.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P356942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051302	NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P356826

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051364	Total-P	100	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P356806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051451	O-Phosphate-P	94.7	97.3	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P356761

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2051650	Sucralose	78.4	84.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P356899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051302	Ammonia-N	5.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P356839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051300	Kjeldahl Nitrogen	0.376	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P356942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051302	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P356826

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051364	Total-P	0.532	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P356806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051451	O-Phosphate-P	2.71	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P356761

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2051650	Sucralose	7.44	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: 2051362
Field Sample ID: G1CE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	91.4	P	40 - 160

Lab Sample ID: 2051363
Field Sample ID: G1CE0023

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	88.3	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A88631

Included Lab Sample IDs: 2051366, 2051367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A88673

Included Lab Sample IDs: 2051364, 2051365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A88677

Included Lab Sample IDs: 2051364, 2051365

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A88681

Included Lab Sample IDs: 2051364, 2051365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.1	P/P	90 - 110
Ammonia-N	99.8	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A88694

Included Lab Sample IDs: 2051364, 2051365

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

Reference Method: EPA 8321B

Run ID: A88712

Included Lab Sample IDs: 2051362, 2051363

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	108	94.7	P/P	60 - 160

* 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	97.4	91.5	97.9		5.91
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	92.4	93.0		0.376
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.5	97.0		0.499
EPA 365.1 Rev. 2.0	Total-P	103	100	99.3		0.532
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	94.7	97.3		2.71
EPA 8321B	Sucralose	79.8	78.4	84.4		7.44

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2051364, 2051365
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2051364, 2051365
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2051364, 2051365
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2051364, 2051365
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2051366, 2051367
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2051362, 2051363
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2051368, 2051369

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	01/03/2019			01/04/2019 11:27	Ping Hua	2051364
	01/03/2019			01/04/2019 11:39	Ping Hua	2051365
EPA 351.2 Rev. 2.0	01/03/2019	01/04/2019 12:30	Adrian Shelby	01/07/2019 11:12	Joseph Suarez	2051364
	01/03/2019	01/04/2019 12:30	Adrian Shelby	01/07/2019 11:13	Joseph Suarez	2051365
EPA 353.2 Rev. 2.0	01/03/2019			01/07/2019 11:12	Beverly Y. Sanders	2051364
	01/03/2019			01/07/2019 11:13	Beverly Y. Sanders	2051365
EPA 365.1 Rev. 2.0	01/03/2019	01/04/2019 12:30	Sima Feizi	01/07/2019 11:54	Beverly Y. Sanders	2051364
	01/03/2019	01/04/2019 12:30	Sima Feizi	01/07/2019 12:03	Beverly Y. Sanders	2051365
EPA 365.1 Rev. 2.0 dissolved	01/03/2019			01/03/2019 15:48	Jhamieka S. Greenwood	2051366
	01/03/2019			01/03/2019 15:50	Jhamieka S. Greenwood	2051367
EPA 8321B	01/03/2019	01/08/2019 12:30	Mohammad Ghaffari	01/08/2019 15:14	Mohammad Ghaffari	2051362
	01/03/2019	01/08/2019 12:30	Mohammad Ghaffari	01/08/2019 15:27	Mohammad Ghaffari	2051363
SM 2540 D-97	01/03/2019			01/03/2019 16:45	Yijie Li	2051368, 2051369