

Chemical Analysis Report

NE-DIST-2018-05-31-05

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

Event Description: **Gville Bio**
Request ID: **RQ-2018-05-28-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 18-JUN-2018 15:28

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 group are included in this report: 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: Blues Creek at NW 71st Street, Gainesville

Collection Date/Time: 05/30/2018 13:00

Field ID: 21030089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1996397	EPA 8321B	2,4-D	0.0020	U	ug/L	P346184	
		Bentazon	0.0024	I	ug/L	P346184	MS
		MCP	0.0020	U	ug/L	P346184	
		Triclopyr**	0.0040	U	ug/L	P346184	
		Imidacloprid	0.025		ug/L	P346184	
		Diuron	0.0028	I	ug/L	P346184	
		Pyraclostrobin**	0.0020	U	ug/L	P346184	
		Primidone**	0.0040	U	ug/L	P346184	
		Linuron	0.0040	U	ug/L	P346184	
		Acetaminophen**	0.0080	UJ	ug/L	P346184	SUR
		Fenuron	0.016	U	ug/L	P346184	
		Imazapyr**	0.043		ug/L	P346184	
		Carbamazepine**	0.0035		ug/L	P346184	
		Fluridone**	4.0E-04	U	ug/L	P346184	
		Hydrocodone**	8.0E-04	U	ug/L	P346184	
		Sucralose**	0.010	U	ug/L	P346245	

Ref. Method and Comment:
EPA 8321B: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P346184

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P346245

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P346184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.0		P	40 - 150
Acetaminophen	104		P	30 - 150
Bentazon	74.7		P	30 - 150
Carbamazepine	72.5		P	40 - 150
Diuron	62.7		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	75.6		P	40 - 150
Hydrocodone	96.3		P	40 - 150
Imazapyr	89.2		P	40 - 150
Imidacloprid	109		P	40 - 160
Linuron	72.7		P	40 - 150
MCP	86.8		P	40 - 150
Primidone	96.7		P	40 - 150
Pyraclostrobin	69.3		P	40 - 150
Triclopyr	78.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	116		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P346184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996357	2,4-D	66.2	43.6	P/P	40 - 150
1996357	Acetaminophen	128	98.4	P/P	30 - 150
1996357	Bentazon	11.1	3.35	F/F	30 - 150
1996357	Carbamazepine	59.6	57.9	P/P	40 - 150
1996357	Diuron	45.7	41.0	P/P	40 - 150
1996357	Fenuron	70.7	55.9	P/P	40 - 150
1996357	Fluridone	61.9	56.1	P/P	40 - 150
1996357	Hydrocodone	79.6	76.6	P/P	40 - 150
1996357	Imazapyr	104	99.3	P/P	40 - 150
1996357	Imidacloprid	119	134	P/P	40 - 160
1996357	Linuron	60.5	51.1	P/P	40 - 150
1996357	MCP	89.8	85.3	P/P	40 - 150
1996357	Primidone	93.0	78.9	P/P	40 - 150
1996357	Pyraclostrobin	81.3	70.8	P/P	40 - 150
1996357	Triclopyr	104	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P346245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1996311	Sucralose	123	116	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P346184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996357	2,4-D	10.9	Spike	P	0 - 30
1996357	Acetaminophen	26.2	Spike	P	0 - 30
1996357	Bentazon	20.9	Spike	P	0 - 30
1996357	Carbamazepine	2.85	Spike	P	0 - 30
1996357	Diuron	7.58	Spike	P	0 - 30
1996357	Fenuron	23.5	Spike	P	0 - 30
1996357	Fluridone	8.68	Spike	P	0 - 30
1996357	Hydrocodone	3.88	Spike	P	0 - 30
1996357	Imazapyr	2.21	Spike	P	0 - 30
1996357	Imidacloprid	7.73	Spike	P	0 - 30
1996357	Linuron	16.8	Spike	P	0 - 30
1996357	MCP	5.07	Spike	P	0 - 30
1996357	Primidone	15.4	Spike	P	0 - 30
1996357	Pyraclostrobin	13.7	Spike	P	0 - 30
1996357	Triclopyr	0.503	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P346245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1996311	Sucralose	5.54	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: 1996397
 Field Sample ID: 21030089

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	70.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	167	F	30 - 160
EPA 8321B	Carbamazepine-d10	67.6	P	30 - 160
EPA 8321B	Diuron-d6	47.9	P	30 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Sucralose-d6	93.1	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A84278
 Included Lab Sample IDs: 1996397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	103	P/P	50 - 150
Bentazon	104	120	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A84278
Included Lab Sample IDs: 1996397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCP	95.7	89.3	P/P	50 - 150
Triclopyr	87.6	95.6	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A84402
Included Lab Sample IDs: 1996397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	93.5	P/P	60 - 150

Reference Method: EPA 8321B
Run ID: A84432
Included Lab Sample IDs: 1996397

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	139	149	P/P	60 - 150
Carbamazepine	105	103	P/P	60 - 150
Diuron	91.8	97.4	P/P	60 - 150
Fenuron	106	109	P/P	60 - 150
Fluridone	116	120	P/P	60 - 160
Hydrocodone	109	113	P/P	60 - 150
Imazapyr	98.6	88.4	P/P	50 - 150
Imidacloprid	107	114	P/P	60 - 150
Linuron	115	114	P/P	60 - 150
Primidone	102	111	P/P	60 - 150
Pyraclostrobin	97.7	105	P/P	60 - 150

* 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 8321B	2,4-D	81.0	66.2 43.6			10.9
	Acetaminophen	104	128 98.4			26.2
	Bentazon	74.7	11.1 3.35			20.9
	Carbamazepine	72.5	59.6 57.9			2.85
	Diuron	62.7	45.7 41.0			7.58
	Fenuron	105	70.7 55.9			23.5
	Fluridone	75.6	61.9 56.1			8.68
	Hydrocodone	96.3	79.6 76.6			3.88
	Imazapyr	89.2	104 99.3			2.21
	Imidacloprid	109	119 134			7.73
	Linuron	72.7	60.5 51.1			16.8
	MCP	86.8	89.8 85.3			5.07
	Primidone	96.7	93.0 78.9			15.4
	Pyraclostrobin	69.3	81.3 70.8			13.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Sucralose	116	123	116			5.54
	Triclopyr	78.4	104	103			0.503

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1996397

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/31/2018	06/01/2018 10:00	Hoor Shaik	06/02/2018 03:54	Juyoung Kim	1996397
	05/31/2018	06/01/2018 10:00	Hoor Shaik	06/03/2018 19:40	Juyoung Kim	1996397
	05/31/2018	06/01/2018 16:00	Hoor Shaik	06/05/2018 11:39	Mohammad Ghaffari	1996397