

Chemical Analysis Report

CEN-DIST-2017-12-21-01

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

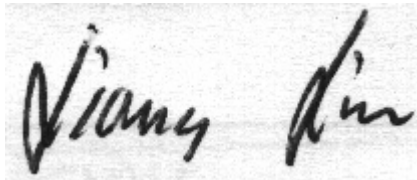
Event Description: **Spruce Crk / Rose + D&B**
Request ID: **RQ-2017-11-13-50**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Orlando, FL 32803-3767
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 04-JAN-2018 17:40

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: Spruce Creek @ 500m US of RR Bridge

Collection Date/Time: 12/20/2017 11:05

Field ID: G5CE0091

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1955529	EPA 8321B	Sucralose**	0.81		ug/L	P337442	
	USGS O-2060-01	2,4-D	0.059		ug/L	P337256	
		Diuron	0.0026	I	ug/L	P337256	
		Fenuron	0.0080	U	ug/L	P337256	
		Imidacloprid	0.014		ug/L	P337256	MS
		Bentazon	0.24		ug/L	P337256	
		Linuron	0.0040	U	ug/L	P337256	
		Acetaminophen**	0.0080	U	ug/L	P337256	
		MCP	0.0020	U	ug/L	P337256	
		Carbamazepine**	0.0064		ug/L	P337256	
		Triclopyr**	0.0040	U	ug/L	P337256	
		Primidone**	0.0054	I	ug/L	P337256	
		Fluridone**	0.017		ug/L	P337256	

Ref. Method and Comment:

USGS O-2060-01: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P337442

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P337256

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	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P337442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	81.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01

Batch ID: P337256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.3		P	40 - 150
Acetaminophen	100		P	30 - 150
Bentazon	89.3		P	30 - 150
Carbamazepine	101		P	40 - 150
Diuron	90.8		P	40 - 150
Fenuron	113		P	40 - 150
Fluridone	109		P	40 - 150
Imidacloprid	105		P	40 - 160
Linuron	99.6		P	40 - 150
MCP	89.3		P	40 - 150
Primidone	103		P	40 - 150
Triclopyr	88.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P337442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955505	Sucralose	104	109	P/P	40 - 150

Reference Method: USGS O-2060-01

Batch ID: P337256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1955250	2,4-D	113	116	P/P	40 - 150
1955250	Acetaminophen	115	109	P/P	30 - 150
1955250	Carbamazepine	112	104	P/P	40 - 150
1955250	Diuron	94.9	89.2	P/P	40 - 150
1955250	Fenuron	124	93.5	P/P	40 - 150
1955250	Fluridone	96.2	88.2	P/P	40 - 150
1955250	Imidacloprid	172	150	F/P	40 - 160
1955250	Linuron	101	89.3	P/P	40 - 150
1955250	MCP	86.6	86.8	P/P	40 - 150
1955250	Primidone	114	106	P/P	40 - 150
1955250	Triclopyr	91.5	88.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P337442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955505	Sucralose	5.30	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P337256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1955250	2,4-D	1.97	Spike	P	0 - 30
1955250	Acetaminophen	5.36	Spike	P	0 - 30
1955250	Carbamazepine	6.52	Spike	P	0 - 30
1955250	Diuron	5.88	Spike	P	0 - 30
1955250	Fenuron	27.9	Spike	P	0 - 30
1955250	Fluridone	6.18	Spike	P	0 - 30
1955250	Imidacloprid	12.5	Spike	P	0 - 30
1955250	Linuron	12.4	Spike	P	0 - 30
1955250	MCP	0.138	Spike	P	0 - 30
1955250	Primidone	7.44	Spike	P	0 - 30
1955250	Triclopyr	3.39	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: 1955529
 Field Sample ID: G5CE0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	89.7	P	30 - 160
EPA 8321B	Primidone-d5	109	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	40 - 160
USGS O-2060-01	2,4-D-d3	104	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	104	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	104	P	30 - 160
USGS O-2060-01	Diuron-d6	89.7	P	30 - 160
USGS O-2060-01	Primidone-d5	109	P	30 - 160
USGS O-2060-01	Sucralose-d6	116	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A81093
 Included Lab Sample IDs: 1955529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.8	100	P/P	50 - 150
Acetaminophen	100	95.0	P/P	60 - 150
Carbamazepine	103	98.9	P/P	60 - 150
Diuron	99.7	95.8	P/P	60 - 150
Fenuron	102	99.7	P/P	60 - 150
Fluridone	105	101	P/P	60 - 160
Imidacloprid	96.8	93.0	P/P	60 - 150
Linuron	101	110	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A81093
Included Lab Sample IDs: 1955529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
MCPP	91.0	94.9	P/P	50 - 150
Primidone	103	102	P/P	60 - 150
Triclopyr	85.8	87.6	P/P	50 - 150

Reference Method: USGS O-2060-01
Run ID: A81128
Included Lab Sample IDs: 1955529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	107	102	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A81137
Included Lab Sample IDs: 1955529

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.0	89.2	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	Sucralose	81.7	104	109			5.30
USGS O-2060-01	2,4-D	97.3	113	116			1.97
	Acetaminophen	100	115	109			5.36
	Bentazon	89.3					
	Carbamazepine	101	112	104			6.52
	Diuron	90.8	94.9	89.2			5.88
	Fenuron	113	124	93.5			27.9
	Fluridone	109	96.2	88.2			6.18
	Imidacloprid	105	172	150			12.5
	Linuron	99.6	101	89.3			12.4
	MCPP	89.3	86.6	86.8			0.138
	Primidone	103	114	106			7.44
	Triclopyr	88.2	91.5	88.4			3.39

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1955529
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1955529
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1955529

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/21/2017	12/26/2017	Juyoung Kim	12/27/2017	Juyoung Kim	1955529
USGS O-2060-01	12/21/2017	12/21/2017	Hoor Shaik	12/22/2017	Julie Michelle Frank	1955529
	12/21/2017	12/21/2017	Hoor Shaik	12/23/2017	Julie Michelle Frank	1955529
	12/21/2017	12/21/2017	Hoor Shaik	12/26/2017	Julie Michelle Frank	1955529