

Chemical Analysis Report

CEN-DIST-2021-11-04-01

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

Event Description: **Reedy Creek (1685)**

Request ID: **RQ-2021-08-09-06**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

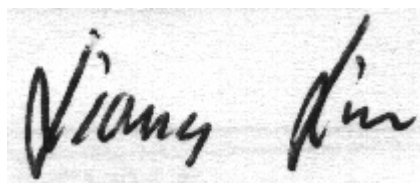
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Orlando, FL 32803-3767
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For additional information please contact

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 16-NOV-2021 15:12

A handwritten signature in black ink, appearing to read "Liang Lin", 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 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: Livingston Creek @ Rucks Dairy Rd

Collection Date/Time: 11/03/2021 12:36

Field ID: G4CE0194

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2288290	EPA 8321B	2,4-D	0.0020	U	ug/L	P406048	
		Acesulfame K	0.10	U	ug/L	P405994	
		2,4,5-T	0.0040	U	ug/L	P406048	
		AMPA	0.10	U	ug/L	P405994	
		Acetaminophen	0.0080	U	ug/L	P406048	
		Acetamiprid	0.0020	U	ug/L	P406048	
		Endothall	0.25	U	ug/L	P405994	
		Glufosinate	0.10	U	ug/L	P405994	
		Glyphosate	0.10	U	ug/L	P405994	
		Afidopyropen	0.0020	U	ug/L	P406048	
		Bentazon	8.0E-04	U	ug/L	P406048	
		Sucralose	0.10		ug/L	P405994	
		Benzovindiflupyr	0.0020	U	ug/L	P406048	
		Carbamazepine	8.0E-04	U	ug/L	P406048	
		Clothianidin	0.0022	I	ug/L	P406048	
		Dinotefuran	0.0020	U	ug/L	P406048	
		Diuron	0.0020	U	ug/L	P406048	
		Fenuron	0.016	U	ug/L	P406048	
		Fluridone	8.0E-04	U	ug/L	P406048	
		Imazapyr	0.0040	U	ug/L	P406048	
		Hydrocodone	0.0020	U	ug/L	P406048	
		Ibuprofen	0.020	U	ug/L	P406048	
		Imidacloprid	0.052		ug/L	P406048	MS
		Linuron	0.0040	U	ug/L	P406048	
		Mandestrobin	0.0020	U	ug/L	P406048	
		MCPP	0.0040	U	ug/L	P406048	
		Naproxen	0.0080	U	ug/L	P406048	
		Primidone	0.0040	U	ug/L	P406048	
		Pyraclostrobin	0.0020	U	ug/L	P406048	
		Thiamethoxam	0.0049	I	ug/L	P406048	
		Tolfenpyrad	0.0020	U	ug/L	P406048	
		Triclopyr	0.0040	U	ug/L	P406048	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P405994

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B

Batch ID: P406048

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.037		ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P405994

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	92.6		P	40 - 150
AMPA	104		P	40 - 160
Endothall	77.4		P	40 - 150
Glufosinate	102		P	40 - 160
Glyphosate	108		P	40 - 160
Sucralose	79.5		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P406048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	120		P	40 - 150
2,4,5-T	114		P	40 - 150
Acetaminophen	107		P	30 - 150
Acetamiprid	93.9		P	40 - 150
Afidopyropen	81.7		P	40 - 150
Bentazon	111		P	30 - 150
Benzovindiflupyr	82.3		P	40 - 150
Carbamazepine	106		P	40 - 150
Clothianidin	105		P	40 - 150
Dinotefuran	92.4		P	40 - 150
Diuron	78.9		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	101		P	40 - 150
Hydrocodone	99.3		P	40 - 150
Ibuprofen	91.5		P	40 - 150
Imazapyr	100		P	40 - 150
Imidacloprid	97.7		P	40 - 150
Linuron	94.4		P	40 - 150
Mandestrobin	95.1		P	40 - 150
MCPP	115		P	40 - 150
Naproxen	87.9		P	40 - 150
Primidone	112		P	40 - 150
Pyraclostrobin	84.0		P	40 - 150
Thiamethoxam	106		P	40 - 150
Tolfenpyrad	46.5		P	30 - 150
Triclopyr	115		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P405994

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288290	Acesulfame K	135	122	P/P	40 - 150
2288290	AMPA	95.7	87.5	P/P	40 - 160
2288290	Endothall	87.8	88.3	P/P	40 - 150
2288290	Glufosinate	97.7	91.5	P/P	40 - 160
2288290	Glyphosate	91.7	89.5	P/P	40 - 160
2288290	Sucralose	83.1	80.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P406048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2288322	2,4-D	121	127	P/P	40 - 150
2288322	2,4,5-T	123	116	P/P	40 - 150
2288322	Acetaminophen	112	112	P/P	30 - 150
2288322	Acetamiprid	98.9	89.1	P/P	40 - 150
2288322	Afidopyropen	82.0	72.6	P/P	40 - 150
2288322	Bentazon	80.6	74.8	P/P	30 - 150
2288322	Benzovindiflupyr	91.6	86.7	P/P	40 - 150
2288322	Carbamazepine	113	112	P/P	40 - 150
2288322	Clothianidin	123	123	P/P	40 - 150
2288322	Dinotefuran	118	116	P/P	40 - 150
2288322	Diuron	85.9	83.6	P/P	40 - 150
2288322	Fenuron	96.5	98.6	P/P	40 - 150
2288322	Fluridone	101	97.6	P/P	40 - 150
2288322	Hydrocodone	112	111	P/P	40 - 150
2288322	Ibuprofen	84.8	92.3	P/P	40 - 150
2288322	Imazapyr	83.8	98.8	P/P	40 - 150
2288322	Imidacloprid	160	156	F/F	40 - 150
2288322	Linuron	76.9	72.3	P/P	40 - 150
2288322	Mandestrobin	95.8	90.7	P/P	40 - 150
2288322	MCP	127	123	P/P	40 - 150
2288322	Naproxen	74.2	97.4	P/P	40 - 150
2288322	Primidone	103	102	P/P	40 - 150
2288322	Pyraclostrobin	82.3	79.6	P/P	40 - 150
2288322	Thiamethoxam	148	143	P/P	40 - 150
2288322	Tolfenpyrad	56.4	57.7	P/P	30 - 150
2288322	Triclopyr	114	114	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P405994

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288290	Acesulfame K	9.85	Spike	P	0 - 30
2288290	AMPA	8.87	Spike	P	0 - 30
2288290	Endothall	0.498	Spike	P	0 - 30
2288290	Glufosinate	6.49	Spike	P	0 - 30
2288290	Glyphosate	2.45	Spike	P	0 - 30
2288290	Sucralose	3.46	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P406048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2288322	2,4-D	4.93	Spike	P	0 - 30
2288322	2,4,5-T	6.28	Spike	P	0 - 30
2288322	Acetaminophen	0.152	Spike	P	0 - 30
2288322	Acetamiprid	10.5	Spike	P	0 - 30
2288322	Afidopyropen	12.1	Spike	P	0 - 30
2288322	Bentazon	7.42	Spike	P	0 - 30
2288322	Benzovindiflupyr	5.47	Spike	P	0 - 30
2288322	Carbamazepine	0.724	Spike	P	0 - 30
2288322	Clothianidin	0.123	Spike	P	0 - 30
2288322	Dinotefuran	1.42	Spike	P	0 - 30
2288322	Diuron	2.61	Spike	P	0 - 30
2288322	Fenuron	2.17	Spike	P	0 - 30
2288322	Fluridone	3.48	Spike	P	0 - 30
2288322	Hydrocodone	1.01	Spike	P	0 - 30
2288322	Ibuprofen	8.49	Spike	P	0 - 30
2288322	Imazapyr	14.8	Spike	P	0 - 30
2288322	Imidacloprid	2.12	Spike	P	0 - 30
2288322	Linuron	6.12	Spike	P	0 - 30
2288322	Mandestrobin	5.45	Spike	P	0 - 30
2288322	MCPP	3.30	Spike	P	0 - 30
2288322	Naproxen	27.0	Spike	P	0 - 30
2288322	Primidone	0.733	Spike	P	0 - 30
2288322	Pyraclostrobin	3.25	Spike	P	0 - 30
2288322	Thiamethoxam	3.78	Spike	P	0 - 30
2288322	Tolfenpyrad	2.25	Spike	P	0 - 30
2288322	Triclopyr	0.272	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2288290

Field Sample ID: G4CE0194

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	100	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.0	P	30 - 160
EPA 8321B	Diuron-d6	76.0	P	30 - 160
EPA 8321B	Endothall-d6	82.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.1	P	30 - 160
EPA 8321B	Primidone-d5	98.7	P	30 - 160
EPA 8321B	Sucralose-d6	77.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A108759
 Included Lab Sample IDs: 2288290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	116	86.3	P/P	60 - 160
Endothall	81.0	70.3	P/P	60 - 160
Sucralose	91.4	77.6	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A108764
 Included Lab Sample IDs: 2288290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	97.3	P/P	60 - 160
Glufosinate	98.2	96.5	P/P	60 - 160
Glyphosate	107	108	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A108877
 Included Lab Sample IDs: 2288290

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.7	118	P/P	50 - 150
2,4,5-T	83.8	91.1	P/P	50 - 150
Acetaminophen	112	119	P/P	60 - 160
Acetamiprid	105	101	P/P	50 - 150
Afidopyropen	88.8	105	P/P	50 - 150
Bentazon	113	117	P/P	50 - 160
Benzovindiflupyr	109	105	P/P	50 - 150
Carbamazepine	102	105	P/P	60 - 150
Clothianidin	106	117	P/P	60 - 150
Dinotefuran	105	114	P/P	50 - 150
Diuron	97.6	108	P/P	60 - 160
Fenuron	104	101	P/P	60 - 150
Fluridone	114	108	P/P	60 - 160
Hydrocodone	101	103	P/P	60 - 150
Ibuprofen	62.5	99.9	P/P	50 - 160
Imazapyr	89.5	97.0	P/P	50 - 150
Imidacloprid	104	109	P/P	60 - 150
Linuron	112	108	P/P	60 - 150
Mandestrobin	108	104	P/P	50 - 150
MCPP	89.5	99.3	P/P	50 - 150
Naproxen	130	84.6	P/P	50 - 160
Primidone	86.7	86.3	P/P	60 - 150
Pyraclostrobin	101	104	P/P	60 - 150
Thiamethoxam	118	110	P/P	50 - 150
Tolfenpyrad	104	98.1	P/P	60 - 150
Triclopyr	85.3	88.2	P/P	50 - 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		Precision	
					LCS	SMP
EPA 8321B	2,4-D	120	121	127		4.93
	2,4,5-T	114	123	116		6.28
	Acesulfame K	92.6	135	122		9.85
	Acetaminophen	107	112	112		0.152
	Acetamiprid	93.9	98.9	89.1		10.5
	Afidopyropen	81.7	82.0	72.6		12.1
	AMPA	104	95.7	87.5		8.87
	Bentazon	111	80.6	74.8		7.42
	Benzovindiflupyr	82.3	91.6	86.7		5.47
	Carbamazepine	106	113	112		0.724
	Clothianidin	105	123	123		0.123
	Dinotefuran	92.4	118	116		1.42
	Diuron	78.9	85.9	83.6		2.61
	Endothall	77.4	87.8	88.3		0.498
	Fenuron	102	96.5	98.6		2.17
	Fluridone	101	101	97.6		3.48
	Glufosinate	102	97.7	91.5		6.49
	Glyphosate	108	91.7	89.5		2.45
	Hydrocodone	99.3	112	111		1.01
	Ibuprofen	91.5	84.8	92.3		8.49
	Imazapyr	100	83.8	98.8		14.8
	Imidacloprid	97.7	160	156		2.12
	Linuron	94.4	76.9	72.3		6.12
	Mandestrobin	95.1	95.8	90.7		5.45
	MCPP	115	127	123		3.30
	Naproxen	87.9	74.2	97.4		27.0
	Primidone	112	103	102		0.733
	Pyraclostrobin	84.0	82.3	79.6		3.25
	Sucralose	79.5	83.1	80.2		3.46
	Thiamethoxam	106	148	143		3.78
	Tolfenpyrad	46.5	56.4	57.7		2.25
	Triclopyr	115	114	114		0.272

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2288290

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/04/2021	11/05/2021 10:00	Juyoung Kim	11/05/2021 12:00	Juyoung Kim	2288290
	11/04/2021	11/05/2021 10:00	Juyoung Kim	11/05/2021 12:05	Manjita Shrestha	2288290
	11/04/2021	11/08/2021 09:00	Hoor Shaik	11/09/2021 09:34	Juyoung Kim	2288290