

Chemical Analysis Report

TLH-ROC-2022-08-11-03

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

Event Description: **Run 4**
Request ID: **RQ-2022-07-11-59**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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Certified by: Colin Wright, Program Administrator

Date Certified: 29-AUG-2022 09:21

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Sugar Creek @ Suwannee River

Collection Date/Time: 08/11/2022 13:05

Field ID: G1TLHR0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2348670	EPA 8321B	2,4-D	0.0028	I	ug/L	P418169	
		Acesulfame K	0.10	U	ug/L	P418000	
		2,4,5-T	0.0040	U	ug/L	P418169	
		AMPA	0.17	I	ug/L	P418000	
		Acetaminophen	0.0080	U	ug/L	P418169	
		Acetamiprid	0.0020	U	ug/L	P418169	
		Endothall	0.25	U	ug/L	P418000	
		Glufosinate	0.10	U	ug/L	P418000	
		Glyphosate	0.14	I	ug/L	P418000	
		Afidopyropen	0.0020	UJ	ug/L	P418169	MS
		Bentazon	8.0E-04	U	ug/L	P418169	
		Sucralose	0.079		ug/L	P418000	
		Benzovindiflupyr	0.0020	U	ug/L	P418169	
		Carbamazepine	8.0E-04	U	ug/L	P418169	
		Clothianidin	0.0020	U	ug/L	P418169	
		Dinotefuran	0.0023	I	ug/L	P418169	
		Diuron	0.0020	U	ug/L	P418169	
		Fenuron	0.032	U	ug/L	P418169	
		Fluridone	8.0E-04	U	ug/L	P418169	
		Imazapyr	0.051		ug/L	P418169	
		Hydrocodone	0.0020	UJ	ug/L	P418169	MS
		Ibuprofen	0.080	U	ug/L	P418169	
		Imidacloprid	0.0020	U	ug/L	P418169	
		Linuron	0.0040	U	ug/L	P418169	
		Mandestrobin	0.0020	U	ug/L	P418169	
		MCPP	0.0040	U	ug/L	P418169	
		Naproxen	0.0080	U	ug/L	P418169	
		Primidone	0.0040	U	ug/L	P418169	
		Pyraclostrobin	0.0020	U	ug/L	P418169	
		Silvex	0.0040	U	ug/L	P418169	
		Thiamethoxam	0.0020	U	ug/L	P418169	
		Tolfenpyrad	0.0020	U	ug/L	P418169	
		Triclopyr	0.0040	U	ug/L	P418169	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P418000

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: P418169

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	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: P418000

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	108		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	111		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P418169

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	112		P	40 - 150
2,4,5-T	94.3		P	40 - 150
Acetaminophen	93.8		P	30 - 150
Acetamiprid	105		P	40 - 150
Afidopyropen	89.4		P	30 - 150
Bentazon	106		P	30 - 150
Benzovindiflupyr	96.9		P	40 - 150
Carbamazepine	82.2		P	40 - 150
Clothianidin	101		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	98.3		P	40 - 150
Fenuron	115		P	40 - 150
Fluridone	104		P	40 - 150
Hydrocodone	120		P	40 - 150
Ibuprofen	96.9		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	91.4		P	40 - 150
Linuron	105		P	40 - 150
Mandestrobin	113		P	40 - 150
MCPPP	119		P	40 - 150
Naproxen	144		P	40 - 150
Primidone	83.6		P	40 - 150
Pyraclostrobin	97.8		P	40 - 150
Silvex	107		P	40 - 150
Thiamethoxam	114		P	40 - 150
Tolfenpyrad	85.3		P	30 - 150
Triclopyr	81.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P418000

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2348451	Acesulfame K	91.9	91.1	P/P	40 - 150
2348451	AMPA	105	104	P/P	40 - 150
2348451	Endothall	107	106	P/P	40 - 150
2348451	Glufosinate	106	111	P/P	40 - 150
2348451	Glyphosate	101	99.6	P/P	40 - 150
2348451	Sucralose	99.1	103	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P418169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2348670	2,4-D	103	76.1	P/P	40 - 150
2348670	2,4,5-T	101	77.8	P/P	40 - 150
2348670	Acetaminophen	110	99.8	P/P	30 - 150
2348670	Acetamiprid	77.5	77.8	P/P	40 - 150
2348670	Afidopyropen	24.4	28.2	F/F	30 - 150
2348670	Bentazon	108	91.8	P/P	30 - 150
2348670	Benzovindiflupyr	102	103	P/P	40 - 150
2348670	Carbamazepine	81.8	101	P/P	40 - 150
2348670	Clothianidin	92.0	83.0	P/P	40 - 150
2348670	Dinotefuran	130	116	P/P	40 - 150
2348670	Diuron	108	101	P/P	40 - 150
2348670	Fenuron	119	108	P/P	40 - 150
2348670	Fluridone	90.4	77.2	P/P	40 - 150
2348670	Hydrocodone	39.9	38.7	F/F	40 - 150
2348670	Ibuprofen	64.9	73.0	P/P	40 - 150
2348670	Imazapyr	136	109	P/P	40 - 150
2348670	Imidacloprid	81.2	75.9	P/P	40 - 150
2348670	Linuron	99.9	98.2	P/P	40 - 150
2348670	Mandestrobin	117	94.7	P/P	40 - 150
2348670	MCP	86.5	81.8	P/P	40 - 150
2348670	Naproxen	68.7	83.2	P/P	40 - 150
2348670	Primidone	64.3	57.7	P/P	40 - 150
2348670	Pyraclostrobin	110	99.6	P/P	40 - 150
2348670	Silvex	85.8	76.0	P/P	40 - 150
2348670	Thiamethoxam	128	97.6	P/P	40 - 150
2348670	Tolfenpyrad	67.8	69.1	P/P	30 - 150
2348670	Triclopyr	89.6	72.3	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P418000

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2348451	Acesulfame K	0.887	Spike	P	0 - 30
2348451	AMPA	1.08	Spike	P	0 - 30
2348451	Endothall	1.04	Spike	P	0 - 30
2348451	Glufosinate	3.93	Spike	P	0 - 30
2348451	Glyphosate	1.19	Spike	P	0 - 30
2348451	Sucralose	4.24	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P418169

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2348670	2,4-D	29.2	Spike	P	0 - 30
2348670	2,4,5-T	26.2	Spike	P	0 - 30
2348670	Acetaminophen	10.2	Spike	P	0 - 30
2348670	Acetamiprid	0.394	Spike	P	0 - 30
2348670	Afidopyropen	14.5	Spike	P	0 - 30
2348670	Bentazon	16.6	Spike	P	0 - 30
2348670	Benzovindiflupyr	1.22	Spike	P	0 - 30
2348670	Carbamazepine	21.4	Spike	P	0 - 30
2348670	Clothianidin	10.3	Spike	P	0 - 30
2348670	Dinotefuran	11.0	Spike	P	0 - 30
2348670	Diuron	6.71	Spike	P	0 - 30
2348670	Fenuron	9.60	Spike	P	0 - 30
2348670	Fluridone	15.7	Spike	P	0 - 30
2348670	Hydrocodone	3.17	Spike	P	0 - 30
2348670	Ibuprofen	11.7	Spike	P	0 - 30
2348670	Imazapyr	14.5	Spike	P	0 - 30
2348670	Imidacloprid	6.73	Spike	P	0 - 30
2348670	Linuron	1.69	Spike	P	0 - 30
2348670	Mandestrobin	20.8	Spike	P	0 - 30
2348670	MCPP	5.57	Spike	P	0 - 30
2348670	Naproxen	19.0	Spike	P	0 - 30
2348670	Primidone	10.8	Spike	P	0 - 30
2348670	Pyraclostrobin	9.59	Spike	P	0 - 30
2348670	Silvex	12.2	Spike	P	0 - 30
2348670	Thiamethoxam	27.1	Spike	P	0 - 30
2348670	Tolfenpyrad	1.91	Spike	P	0 - 30
2348670	Triclopyr	21.3	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2348670

Field Sample ID: G1TLHR0047

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	58.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	82.6	P	30 - 160
EPA 8321B	Diuron-d6	81.3	P	30 - 160
EPA 8321B	Endothall-d6	123	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Ibuprofen-d3	114	P	30 - 160
EPA 8321B	Primidone-d5	53.2	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A114141
Included Lab Sample IDs: 2348670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.7	89.9	P/P	60 - 160
Sucralose	98.1	98.2	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A114174
Included Lab Sample IDs: 2348670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	116	117	P/P	60 - 160
Endothall	81.3	123	P/P	60 - 160
Glufosinate	81.1	129	P/P	60 - 160
Glyphosate	113	118	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A114375
Included Lab Sample IDs: 2348670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.4	91.8	P/P	50 - 150
2,4,5-T	111	120	P/P	50 - 150
Acetaminophen	109	103	P/P	60 - 160
Acetamiprid	101	112	P/P	50 - 150
Afidopyropen	113	95.6	P/P	50 - 150
Bentazon	94.8	62.9	P/P	50 - 160
Benzovindiflupyr	113	91.2	P/P	50 - 150
Carbamazepine	111	84.7	P/P	60 - 150
Clothianidin	109	99.6	P/P	60 - 150
Dinotefuran	117	106	P/P	50 - 150
Diuron	111	135	P/P	60 - 160
Fenuron	108	109	P/P	60 - 150
Fluridone	124	105	P/P	60 - 160
Hydrocodone	109	114	P/P	60 - 150
Ibuprofen	140	91.9	P/P	50 - 160
Imazapyr	107	101	P/P	50 - 150
Imidacloprid	108	117	P/P	60 - 150
Linuron	121	82.9	P/P	60 - 150
Mandestrobin	108	117	P/P	50 - 150
MCPP	96.8	99.7	P/P	50 - 150
Naproxen	85.1	79.9	P/P	50 - 160
Primidone	94.2	102	P/P	60 - 150
Pyraclostrobin	98.1	115	P/P	60 - 150
Silvex	107	98.0	P/P	50 - 150
Thiamethoxam	91.3	113	P/P	50 - 150
Tolfenpyrad	114	108	P/P	60 - 150
Triclopyr	80.2	126	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		LCS	Precision	MS
						SMP	
EPA 8321B	2,4-D	112	103	76.1			29.2
	2,4,5-T	94.3	77.8	101			26.2
	Acesulfame K	104	91.9	91.1			0.887
	Acetaminophen	93.8	110	99.8			10.2
	Acetamiprid	105	77.5	77.8			0.394
	Afidopyropen	89.4	24.4	28.2			14.5
	AMPA	108	105	104			1.08
	Bentazon	106	108	91.8			16.6
	Benzovindiflupyr	96.9	102	103			1.22
	Carbamazepine	82.2	81.8	101			21.4
	Clothianidin	101	92.0	83.0			10.3
	Dinotefuran	104	130	116			11.0
	Diuron	98.3	108	101			6.71
	Endothall	112	107	106			1.04
	Fenuron	115	119	108			9.60
	Fluridone	104	90.4	77.2			15.7
	Glufosinate	125	106	111			3.93
	Glyphosate	111	101	99.6			1.19
	Hydrocodone	120	39.9	38.7			3.17
	Ibuprofen	96.9	73.0	64.9			11.7
	Imazapyr	112	136	109			14.5
	Imidacloprid	91.4	81.2	75.9			6.73
	Linuron	105	99.9	98.2			1.69
	Mandestrobin	113	117	94.7			20.8
	MCPP	119	81.8	86.5			5.57
	Naproxen	144	68.7	83.2			19.0
	Primidone	83.6	64.3	57.7			10.8
	Pyraclostrobin	97.8	110	99.6			9.59
	Silvex	107	76.0	85.8			12.2
	Sucralose	109	99.1	103			4.24
	Thiamethoxam	114	128	97.6			27.1
	Tolfenpyrad	85.3	67.8	69.1			1.91
	Triclopyr	81.1	89.6	72.3			21.3

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2348670

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/11/2022	08/16/2022 13:00	Umesh Chiluwal	08/16/2022 17:58	Umesh Chiluwal	2348670
	08/11/2022	08/16/2022 13:00	Umesh Chiluwal	08/17/2022 08:11	Umesh Chiluwal	2348670
	08/11/2022	08/17/2022 09:00	Hoor Shaik	08/17/2022 21:35	Juyoung Kim	2348670