

Chemical Analysis Report

SW-DIST-2023-12-06-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

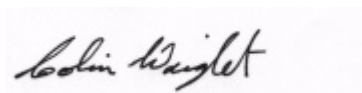
Event Description: **Run 12**
Request ID: **RQ-2023-10-30-34**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Colin Wright, Program Administrator

Date Certified: 12-DEC-2023 08:26

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light blue 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: ENGLISH CREEK AT S COUNTY LINE

Collection Date/Time: 12/05/2023 11:10

Field ID: G2SW0169

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2454964	EPA 8321B	2,4-D	0.0020	U	ug/L	P438542	
		Acesulfame K	0.10	U	ug/L	P438531	
		2,4,5-T	0.0040	U	ug/L	P438542	
		AMPA	0.39	I	ug/L	P438531	
		Acetaminophen	0.0080	U	ug/L	P438542	
		Acetamiprid	0.0020	U	ug/L	P438542	
		Endothall	0.25	U	ug/L	P438531	
		Glufosinate	0.10	U	ug/L	P438531	
		Glyphosate	0.18	I	ug/L	P438531	
		Afidopyropen	0.0020	U	ug/L	P438542	RPD
		Bentazon	0.0012	I	ug/L	P438542	
		Sucralose	0.35		ug/L	P438531	
		Benzovindiflupyr	0.0020	U	ug/L	P438542	
		Carbamazepine	8.0E-04	U	ug/L	P438542	
		Clothianidin	0.027		ug/L	P438542	
		Dinotefuran	0.0029	I	ug/L	P438542	
		Diuron	0.0020	U	ug/L	P438542	
		Fenuron	0.032	U	ug/L	P438542	
		Fluridone	0.0015	I	ug/L	P438542	
		Imazapyr	0.15		ug/L	P438542	
		Hydrocodone	0.0020	U	ug/L	P438542	
		Ibuprofen	0.080	U	ug/L	P438542	
		Imidacloprid	0.019		ug/L	P438542	
		Linuron	0.0040	U	ug/L	P438542	
		Mandestrobin	0.0020	U	ug/L	P438542	
		MCPP	0.0020	U	ug/L	P438542	
		Naproxen	0.0080	U	ug/L	P438542	
		Primidone	0.0040	U	ug/L	P438542	
		Pyraclostrobin	0.0020	U	ug/L	P438542	
		Silvex	0.0040	U	ug/L	P438542	
		Thiamethoxam	0.019		ug/L	P438542	
		Tolfenpyrad	0.0020	U	ug/L	P438542	
		Triclopyr	0.0040	U	ug/L	P438542	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P438531

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: P438542

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	0.0020	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: P438531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	109		P	40 - 150
AMPA	99.4		P	40 - 160
Endothall	101		P	40 - 160
Glufosinate	99.1		P	40 - 160
Glyphosate	95.8		P	40 - 160
Sucralose	106		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P438542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	100		P	40 - 150
2,4,5-T	122		P	40 - 150
Acetaminophen	95.7		P	30 - 150
Acetamiprid	85.4		P	40 - 150
Afidopyropen	68.5		P	30 - 150
Bentazon	74.4		P	30 - 150
Benzovindiflupyr	90.2		P	40 - 150
Carbamazepine	85.4		P	40 - 150
Clothianidin	95.2		P	40 - 150
Dinotefuran	106		P	40 - 150
Diuron	80.8		P	40 - 150
Fenuron	96.5		P	40 - 150
Fluridone	92.8		P	40 - 150
Hydrocodone	93.6		P	40 - 150
Ibuprofen	70.0		P	40 - 150
Imazapyr	95.4		P	40 - 150
Imidacloprid	90.9		P	40 - 150
Linuron	82.8		P	40 - 150
Mandestrobin	96.3		P	40 - 150
MCPP	97.2		P	40 - 150
Naproxen	87.4		P	40 - 150
Primidone	88.6		P	40 - 150
Pyraclostrobin	80.9		P	40 - 150
Silvex	92.2		P	40 - 150
Thiamethoxam	93.8		P	40 - 150
Tolfenpyrad	52.3		P	30 - 150
Triclopyr	125		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P438531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454732	Acesulfame K	101	102	P/P	40 - 150
2454732	AMPA	76.1	91.2	P/P	40 - 160
2454732	Endothall	113	120	P/P	40 - 160
2454732	Glufosinate	93.9	99.5	P/P	40 - 160
2454732	Glyphosate	90.4	93.4	P/P	40 - 160
2454732	Sucralose	112	88.7	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P438542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454732	2,4-D	114	85.5	P/P	40 - 150
2454732	2,4,5-T	97.3	106	P/P	40 - 150
2454732	Acetaminophen	102	85.4	P/P	30 - 150
2454732	Acetamiprid	91.7	71.6	P/P	40 - 150
2454732	Afidopyropen	83.8	50.2	P/P	30 - 150
2454732	Bentazon	72.5	60.2	P/P	30 - 150
2454732	Benzovindiflupyr	94.7	81.2	P/P	40 - 150
2454732	Carbamazepine	91.6	79.5	P/P	40 - 150
2454732	Clothianidin	104	85.7	P/P	40 - 150
2454732	Dinotefuran	113	94.6	P/P	40 - 150
2454732	Diuron	83.6	71.8	P/P	40 - 150
2454732	Fenuron	99.6	85.1	P/P	40 - 150
2454732	Fluridone	100	85.5	P/P	40 - 150
2454732	Hydrocodone	96.4	84.9	P/P	40 - 150
2454732	Ibuprofen	74.5	58.4	P/P	40 - 150
2454732	Imazapyr	101	81.9	P/P	40 - 150
2454732	Imidacloprid	101	82.8	P/P	40 - 150
2454732	Linuron	85.6	70.2	P/P	40 - 150
2454732	Mandestrobin	101	83.5	P/P	40 - 150
2454732	MCP	102	83.7	P/P	40 - 150
2454732	Naproxen	67.2	57.9	P/P	40 - 150
2454732	Primidone	95.5	77.4	P/P	40 - 150
2454732	Pyraclostrobin	87.8	75.3	P/P	40 - 150
2454732	Silvex	96.3	77.0	P/P	40 - 150
2454732	Thiamethoxam	86.8	73.9	P/P	40 - 150
2454732	Tolfenpyrad	56.8	47.3	P/P	30 - 150
2454732	Triclopyr	99.2	99.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P438531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454732	Acesulfame K	0.640	Spike	P	0 - 30
2454732	AMPA	18.1	Spike	P	0 - 30
2454732	Endothall	5.69	Spike	P	0 - 30
2454732	Glufosinate	5.79	Spike	P	0 - 30
2454732	Glyphosate	3.27	Spike	P	0 - 30
2454732	Sucralose	22.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P438542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454732	2,4-D	28.4	Spike	P	0 - 30
2454732	2,4,5-T	8.97	Spike	P	0 - 30
2454732	Acetaminophen	17.7	Spike	P	0 - 30
2454732	Acetamiprid	24.6	Spike	P	0 - 30
2454732	Afidopyropen	50.1	Spike	F	0 - 30
2454732	Bentazon	18.5	Spike	P	0 - 30
2454732	Benzovindiflupyr	15.3	Spike	P	0 - 30
2454732	Carbamazepine	14.1	Spike	P	0 - 30
2454732	Clothianidin	15.7	Spike	P	0 - 30
2454732	Dinotefuran	17.5	Spike	P	0 - 30
2454732	Diuron	15.2	Spike	P	0 - 30
2454732	Fenuron	15.7	Spike	P	0 - 30
2454732	Fluridone	15.8	Spike	P	0 - 30
2454732	Hydrocodone	12.7	Spike	P	0 - 30
2454732	Ibuprofen	24.2	Spike	P	0 - 30
2454732	Imazapyr	20.9	Spike	P	0 - 30
2454732	Imidacloprid	19.7	Spike	P	0 - 30
2454732	Linuron	19.8	Spike	P	0 - 30
2454732	Mandestrobin	19.3	Spike	P	0 - 30
2454732	MCPP	19.9	Spike	P	0 - 30
2454732	Naproxen	14.9	Spike	P	0 - 30
2454732	Primidone	20.9	Spike	P	0 - 30
2454732	Pyraclostrobin	15.3	Spike	P	0 - 30
2454732	Silvex	22.3	Spike	P	0 - 30
2454732	Thiamethoxam	16.1	Spike	P	0 - 30
2454732	Tolfenpyrad	18.3	Spike	P	0 - 30
2454732	Triclopyr	0.0424	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2454964

Field Sample ID: G2SW0169

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.0	P	30 - 160
EPA 8321B	Diuron-d6	60.8	P	30 - 160
EPA 8321B	Endothall-d6	95.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.1	P	30 - 160
EPA 8321B	Primidone-d5	87.7	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A123094
Included Lab Sample IDs: 2454964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	108	118	P/P	60 - 160
Endothall	112	94.0	P/P	60 - 160
Glufosinate	96.5	99.0	P/P	60 - 160
Glyphosate	97.6	101	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A123117
Included Lab Sample IDs: 2454964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	125	120	P/P	60 - 160
Sucralose	110	104	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A123127
Included Lab Sample IDs: 2454964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	101	98.4	P/P	50 - 150
2,4,5-T	96.1	106	P/P	50 - 150
Acetaminophen	111	110	P/P	60 - 160
Acetamiprid	108	108	P/P	50 - 150
Afidopyropen	105	105	P/P	50 - 150
Bentazon	90.4	93.9	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 150
Carbamazepine	108	110	P/P	60 - 150
Clothianidin	106	103	P/P	60 - 150
Dinotefuran	109	109	P/P	50 - 150
Diuron	110	110	P/P	60 - 160
Fenuron	105	103	P/P	60 - 150
Fluridone	111	109	P/P	60 - 160
Hydrocodone	108	109	P/P	60 - 150
Ibuprofen	91.6	102	P/P	50 - 160
Imazapyr	90.7	93.5	P/P	50 - 150
Imidacloprid	98.0	98.8	P/P	60 - 150
Linuron	108	109	P/P	60 - 150
Mandestrobin	106	106	P/P	50 - 150
MCPP	104	102	P/P	50 - 150
Naproxen	113	76.9	P/P	50 - 160
Primidone	101	96.5	P/P	60 - 150
Pyraclostrobin	106	105	P/P	60 - 150
Silvex	92.7	94.2	P/P	50 - 150
Thiamethoxam	112	114	P/P	50 - 150
Tolfenpyrad	98.1	99.5	P/P	60 - 150
Triclopyr	107	101	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 SMP	MS
			LCS			
EPA 8321B	2,4-D	100	114	85.5		28.4
	2,4,5-T	122	97.3	106		8.97
	Acesulfame K	109	101	102		0.640
	Acetaminophen	95.7	102	85.4		17.7
	Acetamiprid	85.4	91.7	71.6		24.6
	Afidopyropen	68.5	83.8	50.2		50.1
	AMPA	99.4	76.1	91.2		18.1
	Bentazon	74.4	72.5	60.2		18.5
	Benzovindiflupyr	90.2	94.7	81.2		15.3
	Carbamazepine	85.4	91.6	79.5		14.1
	Clothianidin	95.2	104	85.7		15.7
	Dinotefuran	106	113	94.6		17.5
	Diuron	80.8	83.6	71.8		15.2
	Endothall	101	113	120		5.69
	Fenuron	96.5	99.6	85.1		15.7
	Fluridone	92.8	100	85.5		15.8
	Glufosinate	99.1	93.9	99.5		5.79
	Glyphosate	95.8	90.4	93.4		3.27
	Hydrocodone	93.6	96.4	84.9		12.7
	Ibuprofen	70.0	74.5	58.4		24.2
	Imazapyr	95.4	101	81.9		20.9
	Imidacloprid	90.9	101	82.8		19.7
	Linuron	82.8	85.6	70.2		19.8
	Mandestrobin	96.3	101	83.5		19.3
	MCPP	97.2	102	83.7		19.9
	Naproxen	87.4	67.2	57.9		14.9
	Primidone	88.6	95.5	77.4		20.9
	Pyraclostrobin	80.9	87.8	75.3		15.3
	Silvex	92.2	96.3	77.0		22.3
	Sucralose	106	112	88.7		22.8
	Thiamethoxam	93.8	86.8	73.9		16.1
	Tolfenpyrad	52.3	56.8	47.3		18.3
	Triclopyr	125	99.2	99.2		0.0424

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2454964

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	12/06/2023	12/07/2023 13:00	Tae K Lee	12/07/2023 19:22	Hana Lee	2454964
	12/06/2023	12/07/2023 13:00	Tae K Lee	12/08/2023 11:03	Hana Lee	2454964
	12/06/2023	12/08/2023 09:00	Hoor Shaik	12/08/2023 20:46	Juyoung Kim	2454964