

Chemical Analysis Report

SO-DIST-2022-03-23-01

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

Event Description: **2022 SMP: Lee County Sampling - Chapel Creek**

Request ID: **RQ-2022-03-14-52**

Customer: **SO-DIST**

Project ID: **SMP**

Send Reports to:

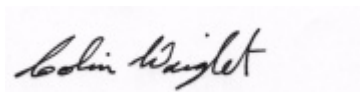
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

For additional information please contact

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Certified by: Colin Wright, Program Administrator

Date Certified: 08-APR-2022 14:08

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored 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: 22-7GR

Collection Date/Time: 03/22/2022 09:35

Field ID: 22-7GR

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2314004	EPA 8321B	2,4-D	0.0027	I	ug/L	P411506	
		Acesulfame K	0.53		ug/L	P411448	
		2,4,5-T	0.0040	U	ug/L	P411506	
		AMPA	0.27	I	ug/L	P411448	
		Acetaminophen	0.0080	U	ug/L	P411506	
		Acetamiprid	0.0020	U	ug/L	P411506	
		Endothall	0.25	U	ug/L	P411448	
		Glufosinate	0.10	U	ug/L	P411448	
		Glyphosate	0.50		ug/L	P411448	
		Afidopyropen	0.0020	U	ug/L	P411506	
		Bentazon	0.074		ug/L	P411506	
		Sucralose	1.3		ug/L	P411448	
		Benzovindiflupyr	0.0020	U	ug/L	P411506	
		Carbamazepine	0.0010	I	ug/L	P411506	
		Clothianidin	0.0020	U	ug/L	P411506	
		Dinotefuran	0.0020	U	ug/L	P411506	
		Diuron	0.0020	U	ug/L	P411506	RPD
		Fenuron	0.016	U	ug/L	P411506	
		Fluridone	8.0E-04	U	ug/L	P411506	
		Imazapyr	0.041		ug/L	P411506	
		Hydrocodone	0.0020	U	ug/L	P411506	
		Ibuprofen	0.020	U	ug/L	P411506	
		Imidacloprid	0.0020	U	ug/L	P411506	MS
		Linuron	0.0040	U	ug/L	P411506	
		Mandestrobin	0.0020	U	ug/L	P411506	
		MCPP	0.0020	U	ug/L	P411506	
		Naproxen	0.0080	U	ug/L	P411506	
		Primidone	0.0040	U	ug/L	P411506	
		Pyraclostrobin	0.0020	U	ug/L	P411506	
		Silvex	0.0040	U	ug/L	P411506	
		Thiamethoxam	0.0020	U	ug/L	P411506	MS
		Tolfenpyrad	0.0020	U	ug/L	P411506	
		Triclopyr	0.0040	U	ug/L	P411506	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon could not be assessed due to a high concentration of parameters in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P411448

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: P411506

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	0.022	I	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	0.0020	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: P411448

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	110		P	40 - 150
AMPA	109		P	40 - 150
Endothall	126		P	40 - 150
Glufosinate	121		P	40 - 150
Glyphosate	114		P	40 - 150
Sucralose	119		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P411506

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	47.7		P	30 - 160
2,4,5-T	40.3		P	30 - 160
Acetaminophen	90.6		P	30 - 150
Acetamiprid	75.6		P	30 - 160
Afidopyropen	45.7		P	30 - 160
Bentazon	77.9		P	30 - 150
Benzovindiflupyr	76.0		P	30 - 160
Carbamazepine	59.9		P	30 - 160
Clothianidin	98.1		P	30 - 160
Dinotefuran	90.4		P	30 - 160
Diuron	64.3		P	30 - 160
Fenuron	122		P	30 - 160
Fluridone	66.4		P	30 - 160
Hydrocodone	92.2		P	30 - 160
Ibuprofen	68.8		P	30 - 160
Imazapyr	95.6		P	30 - 160
Imidacloprid	84.8		P	30 - 160
Linuron	69.1		P	30 - 160
Mandestrobin	62.2		P	30 - 160
MCPP	58.9		P	30 - 160
Naproxen	84.3		P	30 - 160
Primidone	83.3		P	30 - 160
Pyraclostrobin	66.7		P	30 - 160
Silvex	35.4		P	30 - 160
Thiamethoxam	98.5		P	30 - 160
Tolfenpyrad	42.5		P	30 - 160
Triclopyr	43.1		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P411448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313467	Acesulfame K	143	140	P/P	40 - 150
2313467	AMPA	75.1	102	P/P	40 - 150
2313467	Endothall	83.1	83.7	P/P	40 - 150
2313467	Glufosinate	96.8	119	P/P	40 - 150
2313467	Glyphosate	71.9	95.4	P/P	40 - 150
2313467	Sucralose	112	117	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P411506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2313467	2,4-D	85.3	78.7	P/P	30 - 160
2313467	2,4,5-T	59.9	69.4	P/P	30 - 160
2313467	Acetaminophen	107	92.2	P/P	30 - 150
2313467	Acetamiprid	104	98.0	P/P	30 - 160
2313467	Afidopyropen	78.9	66.1	P/P	30 - 160
2313467	Benzovindiflupyr	82.4	87.3	P/P	30 - 160
2313467	Carbamazepine	80.3	74.7	P/P	30 - 160
2313467	Clothianidin	128	127	P/P	30 - 160
2313467	Dinotefuran	135	130	P/P	30 - 160
2313467	Diuron	61.7	43.1	P/P	30 - 160
2313467	Fenuron	110	124	P/P	30 - 160
2313467	Fluridone	75.0	67.3	P/P	30 - 160
2313467	Hydrocodone	117	108	P/P	30 - 160
2313467	Ibuprofen	87.8	82.0	P/P	30 - 160
2313467	Imazapyr	138	134	P/P	30 - 160
2313467	Imidacloprid	235	211	F/F	30 - 160
2313467	Linuron	98.1	78.7	P/P	30 - 160
2313467	Mandestrobin	68.4	64.7	P/P	30 - 160
2313467	MCP	88.1	77.4	P/P	30 - 160
2313467	Naproxen	75.7	68.0	P/P	30 - 160
2313467	Primidone	125	110	P/P	30 - 160
2313467	Pyraclostrobin	79.8	79.9	P/P	30 - 160
2313467	Silvex	64.0	66.3	P/P	30 - 160
2313467	Thiamethoxam	190	170	F/F	30 - 160
2313467	Tolfenpyrad	46.0	39.7	P/P	30 - 160
2313467	Triclopyr	62.6	63.9	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P411448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313467	Acesulfame K	2.20	Spike	P	0 - 30
2313467	AMPA	26.5	Spike	P	0 - 30
2313467	Endothall	0.772	Spike	P	0 - 30
2313467	Glufosinate	20.8	Spike	P	0 - 30
2313467	Glyphosate	23.0	Spike	P	0 - 30
2313467	Sucralose	4.19	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P411506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2313467	2,4-D	7.58	Spike	P	0 - 30
2313467	2,4,5-T	14.6	Spike	P	0 - 30
2313467	Acetaminophen	14.6	Spike	P	0 - 30
2313467	Acetamiprid	5.66	Spike	P	0 - 30
2313467	Afidopyropen	17.7	Spike	P	0 - 30
2313467	Bentazon	6.70	Spike	P	0 - 30
2313467	Benzovindiflupyr	5.82	Spike	P	0 - 30
2313467	Carbamazepine	7.23	Spike	P	0 - 30
2313467	Clothianidin	0.659	Spike	P	0 - 30
2313467	Dinotefuran	3.66	Spike	P	0 - 30
2313467	Diuron	35.5	Spike	F	0 - 30
2313467	Fenuron	12.2	Spike	P	0 - 30
2313467	Fluridone	8.64	Spike	P	0 - 30
2313467	Hydrocodone	8.08	Spike	P	0 - 30
2313467	Ibuprofen	6.90	Spike	P	0 - 30
2313467	Imazapyr	0.694	Spike	P	0 - 30
2313467	Imidacloprid	10.7	Spike	P	0 - 30
2313467	Linuron	21.9	Spike	P	0 - 30
2313467	Mandestrobin	5.53	Spike	P	0 - 30
2313467	MCPP	13.0	Spike	P	0 - 30
2313467	Naproxen	10.7	Spike	P	0 - 30
2313467	Primidone	12.8	Spike	P	0 - 30
2313467	Pyraclostrobin	0.116	Spike	P	0 - 30
2313467	Silvex	3.47	Spike	P	0 - 30
2313467	Thiamethoxam	10.9	Spike	P	0 - 30
2313467	Tolfenpyrad	14.7	Spike	P	0 - 30
2313467	Triclopyr	2.19	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2314004
Field Sample ID: 22-7GR

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	68.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.0	P	30 - 160
EPA 8321B	Diuron-d6	56.5	P	30 - 160
EPA 8321B	Endothall-d6	78.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	68.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.7	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	94.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A111169
Included Lab Sample IDs: 2314004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	105	106	P/P	60 - 160
Glufosinate	98.6	103	P/P	60 - 160
Glyphosate	101	102	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A111179
Included Lab Sample IDs: 2314004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	103	104	P/P	60 - 160
Endothall	99.2	101	P/P	60 - 160
Sucralose	108	111	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A111189
Included Lab Sample IDs: 2314004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	67.3	95.4	P/P	50 - 150
2,4,5-T	75.0	83.8	P/P	50 - 150
Acetaminophen	122	118	P/P	60 - 160
Acetamiprid	99.8	102	P/P	50 - 150
Afidopyropen	80.5	64.1	P/P	50 - 150
Benzovindiflupyr	98.3	96.2	P/P	50 - 160
Carbamazepine	74.2	91.4	P/P	60 - 150
Clothianidin	118	124	P/P	60 - 150
Dinotefuran	110	116	P/P	50 - 150
Diuron	74.7	66.0	P/P	60 - 160
Fenuron	103	107	P/P	60 - 150
Fluridone	81.7	87.6	P/P	60 - 160
Hydrocodone	107	107	P/P	60 - 150
Ibuprofen	144	119	P/P	50 - 160
Imazapyr	108	104	P/P	50 - 150
Imidacloprid	104	100	P/P	60 - 150
Linuron	110	87.0	P/P	60 - 150
Mandestrobin	67.8	69.8	P/P	50 - 150
MCPP	78.3	80.2	P/P	50 - 150
Naproxen	125	93.7	P/P	50 - 160
Primidone	110	104	P/P	60 - 150
Pyraclostrobin	94.1	97.9	P/P	60 - 150
Silvex	83.5	82.0	P/P	50 - 150
Thiamethoxam	110	124	P/P	50 - 150
Tolfenpyrad	94.7	81.3	P/P	60 - 150
Triclopyr	68.8	74.8	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A111346
Included Lab Sample IDs: 2314004

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	95.2	103	P/P	50 - 160

Quality Assurance Report

Calibration Verification

* 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	47.7	85.3	78.7		7.58
	2,4,5-T	40.3	59.9	69.4		14.6
	Acesulfame K	110	143	140		2.20
	Acetaminophen	90.6	107	92.2		14.6
	Acetamiprid	75.6	104	98.0		5.66
	Afidopyropen	45.7	78.9	66.1		17.7
	AMPA	109	75.1	102		26.5
	Bentazon	77.9				6.70
	Benzovindiflupyr	76.0	82.4	87.3		5.82
	Carbamazepine	59.9	80.3	74.7		7.23
	Clothianidin	98.1	128	127		0.659
	Dinotefuran	90.4	135	130		3.66
	Diuron	64.3	61.7	43.1		35.5
	Endothall	126	83.1	83.7		0.772
	Fenuron	122	110	124		12.2
	Fluridone	66.4	75.0	67.3		8.64
	Glufosinate	121	96.8	119		20.8
	Glyphosate	114	71.9	95.4		23.0
	Hydrocodone	92.2	117	108		8.08
	Ibuprofen	68.8	87.8	82.0		6.90
	Imazapyr	95.6	138	134		0.694
	Imidacloprid	84.8	235	211		10.7
	Linuron	69.1	98.1	78.7		21.9
	Mandestrobin	62.2	68.4	64.7		5.53
	MCPP	58.9	88.1	77.4		13.0
	Naproxen	84.3	75.7	68.0		10.7
	Primidone	83.3	125	110		12.8
	Pyraclostrobin	66.7	79.8	79.9		0.116
	Silvex	35.4	64.0	66.3		3.47
	Sucralose	119	112	117		4.19
	Thiamethoxam	98.5	190	170		10.9
	Tolfenpyrad	42.5	46.0	39.7		14.7
	Triclopyr	43.1	62.6	63.9		2.19

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2314004

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/23/2022	03/24/2022 09:30	June Rhew	03/26/2022 23:40	Juyoung Kim	2314004
	03/23/2022	03/24/2022 09:30	June Rhew	04/01/2022 00:57	Juyoung Kim	2314004
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/25/2022 20:13	Manjita Shrestha	2314004
	03/23/2022	03/24/2022 15:00	Manjita Shrestha	03/26/2022 05:53	Manjita Shrestha	2314004