

Chemical Analysis Report

SO-DIST-2021-04-16-02

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

Event Description: **2021 SMP: Lee County Sampling**
Request ID: **RQ-2021-04-12-69**
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
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 06-MAY-2021 13:30

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: IOMIGRIO

Collection Date/Time: 04/15/2021 09:34

Field ID: IOMIGRIO

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2240275	EPA 8321B	2,4-D	0.0032	I	ug/L	P396769	
		Acesulfame K	0.10	I	ug/L	P396835	MS
		2,4,5-T	0.0040	U	ug/L	P396769	
		AMPA	0.10	U	ug/L	P396835	
		Sucralose	0.44		ug/L	P396835	
		Acetaminophen	0.038		ug/L	P396769	MS, RPD
		Acetamiprid	0.0020	U	ug/L	P396769	
		Endothall	0.25	U	ug/L	P396835	
		Glufosinate	0.10	U	ug/L	P396835	
		Glyphosate	0.10	U	ug/L	P396835	
		Afidopyropen	0.0020	U	ug/L	P396769	
		Bentazon	0.084		ug/L	P396769	
		Benzovindiflupyr	0.0020	U	ug/L	P396769	
		Carbamazepine	0.0015	I	ug/L	P396769	
		Clothianidin	0.0020	U	ug/L	P396769	
		Dinotefuran	0.0020	U	ug/L	P396769	
		Diuron	0.0028	I	ug/L	P396769	
		Fenuron	0.016	U	ug/L	P396769	
		Fluridone	0.087		ug/L	P396769	
		Imazapyr	0.063		ug/L	P396769	
		Hydrocodone	0.0020	U	ug/L	P396769	
		Ibuprofen	0.020	U	ug/L	P396769	
		Imidacloprid	0.0020	U	ug/L	P396769	MS
		Linuron	0.0040	U	ug/L	P396769	
		Mandestrobin	0.0020	U	ug/L	P396769	
		MCP	0.0020	U	ug/L	P396769	MS
		Naproxen	0.0080	U	ug/L	P396769	
		Primidone	0.0040	U	ug/L	P396769	
		Pyraclostrobin	0.0020	U	ug/L	P396769	
		Thiamethoxam	0.0020	U	ug/L	P396769	MS
		Tolfenpyrad	0.0020	U	ug/L	P396769	
		Triclopyr	0.0040	U	ug/L	P396769	RPD

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P396769

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	0.016	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	0.0020	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

Reference Method: EPA 8321B

Batch ID: P396835

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P396769

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
2,4,5-T	119		P	30 - 160
Acetaminophen	76.4		P	30 - 150
Acetamiprid	94.3		P	30 - 160
Afidopyropen	73.3		P	30 - 160
Bentazon	37.3		P	30 - 150
Benzovindiflupyr	82.9		P	30 - 160
Carbamazepine	85.9		P	30 - 160
Clothianidin	97.4		P	30 - 160
Dinotefuran	87.2		P	30 - 160
Diuron	76.7		P	30 - 160
Fenuron	98.2		P	30 - 160
Fluridone	97.0		P	30 - 160
Hydrocodone	93.0		P	30 - 160
Ibuprofen	82.3		P	30 - 160
Imazapyr	107		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	70.9		P	30 - 160
Mandestrobin	90.0		P	30 - 160
MCPP	140		P	30 - 160
Naproxen	99.3		P	30 - 160
Primidone	75.4		P	30 - 160
Pyraclostrobin	79.3		P	30 - 160
Thiamethoxam	101		P	30 - 160
Tolfenpyrad	56.7		P	30 - 160
Triclopyr	125		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P396835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	150		P	40 - 150
AMPA	84.1		P	40 - 150
Endothall	99.7		P	40 - 150
Glufosinate	82.7		P	40 - 150
Glyphosate	65.5		P	40 - 140
Sucralose	99.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P396769

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240190	2,4-D	130	149	P/P	30 - 160
2240190	2,4,5-T	97.7	132	P/P	30 - 160
2240190	Acetaminophen	96.0	237	P/F	30 - 150
2240190	Acetamiprid	106	109	P/P	30 - 160
2240190	Afidopyropen	80.6	79.3	P/P	30 - 160
2240190	Bentazon	33.0	41.8	P/P	30 - 150
2240190	Benzovindiflupyr	85.2	96.8	P/P	30 - 160
2240190	Carbamazepine	84.5	95.2	P/P	30 - 160
2240190	Clothianidin	120	129	P/P	30 - 160
2240190	Dinotefuran	114	118	P/P	30 - 160
2240190	Diuron	74.4	70.0	P/P	30 - 160
2240190	Fenuron	112	122	P/P	30 - 160
2240190	Fluridone	103	106	P/P	30 - 160
2240190	Hydrocodone	115	125	P/P	30 - 160
2240190	Ibuprofen	69.9	90.7	P/P	30 - 160
2240190	Imazapyr	129	149	P/P	30 - 160
2240190	Imidacloprid	149	185	P/F	30 - 160
2240190	Linuron	89.4	94.7	P/P	30 - 160
2240190	Mandestrobin	88.6	94.9	P/P	30 - 160
2240190	MCCP	152	177	P/F	30 - 160
2240190	Naproxen	90.5	99.2	P/P	30 - 160
2240190	Primidone	108	112	P/P	30 - 160
2240190	Pyraclostrobin	77.8	87.0	P/P	30 - 160
2240190	Thiamethoxam	146	170	P/F	30 - 160
2240190	Tolfenpyrad	62.1	57.3	P/P	30 - 160
2240190	Triclopyr	98.0	149	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P396835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2240044	Acesulfame K	193	160	F/F	40 - 150
2240044	AMPA	86.9	85.6	P/P	40 - 150
2240044	Endothall	88.1	78.6	P/P	40 - 150
2240044	Glufosinate	69.5	61.0	P/P	40 - 150
2240044	Glyphosate	118	138	P/P	40 - 140
2240044	Sucralose	95.1	103	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P396769

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240190	2,4-D	13.6	Spike	P	0 - 30
2240190	2,4,5-T	29.7	Spike	P	0 - 30
2240190	Acetaminophen	84.5	Spike	F	0 - 30
2240190	Acetamiprid	2.55	Spike	P	0 - 30
2240190	Afidopyropen	1.68	Spike	P	0 - 30
2240190	Bentazon	17.0	Spike	P	0 - 30
2240190	Benzovindiflupyr	12.8	Spike	P	0 - 30
2240190	Carbamazepine	11.0	Spike	P	0 - 30
2240190	Clothianidin	7.28	Spike	P	0 - 30
2240190	Dinotefuran	3.60	Spike	P	0 - 30
2240190	Diuron	6.08	Spike	P	0 - 30
2240190	Fenuron	8.32	Spike	P	0 - 30
2240190	Fluridone	2.87	Spike	P	0 - 30
2240190	Hydrocodone	8.23	Spike	P	0 - 30
2240190	Ibuprofen	25.9	Spike	P	0 - 30
2240190	Imazapyr	14.4	Spike	P	0 - 30
2240190	Imidacloprid	19.2	Spike	P	0 - 30
2240190	Linuron	5.80	Spike	P	0 - 30
2240190	Mandestrobin	6.94	Spike	P	0 - 30
2240190	MCP	14.7	Spike	P	0 - 30
2240190	Naproxen	9.23	Spike	P	0 - 30
2240190	Primidone	2.91	Spike	P	0 - 30
2240190	Pyraclostrobin	11.1	Spike	P	0 - 30
2240190	Thiamethoxam	15.5	Spike	P	0 - 30
2240190	Tolfenpyrad	8.09	Spike	P	0 - 30
2240190	Triclopyr	41.0	Spike	F	0 - 30

Reference Method: EPA 8321B
Batch ID: P396835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2240044	Acesulfame K	18.7	Spike	P	0 - 30
2240044	AMPA	1.42	Spike	P	0 - 30
2240044	Endothall	11.4	Spike	P	0 - 30
2240044	Glufosinate	13.0	Spike	P	0 - 30
2240044	Glyphosate	14.1	Spike	P	0 - 30
2240044	Sucralose	7.10	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2240275

Field Sample ID: IOMIGRIO

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.6	P	30 - 160
EPA 8321B	Diuron-d6	63.0	P	30 - 160
EPA 8321B	Endothall-d6	81.6	P	40 - 160
EPA 8321B	Endothall-d6	81.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	40.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	40.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	83.1	P	30 - 160
EPA 8321B	Primidone-d5	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	93.6	P	30 - 160
EPA 8321B	Sucralose-d6	93.6	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A104896
 Included Lab Sample IDs: 2240275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	137	113	P/P	40 - 160
AMPA	93.3	97.8	P/P	40 - 160
Endothall	79.8	81.6	P/P	40 - 160
Glufosinate	86.8	99.8	P/P	40 - 160
Glyphosate	83.8	66.0	P/P	40 - 160

Reference Method: EPA 8321B
 Run ID: A105083
 Included Lab Sample IDs: 2240275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	111	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A105098
 Included Lab Sample IDs: 2240275

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	97.4	P/P	50 - 150
2,4,5-T	104	118	P/P	50 - 150
Acetaminophen	92.2	93.2	P/P	60 - 160
Acetamiprid	117	116	P/P	50 - 150
Afidopyropen	116	108	P/P	50 - 150
Bentazon	116	137	P/P	50 - 160
Benzovindiflupyr	95.4	101	P/P	50 - 160
Carbamazepine	101	104	P/P	60 - 150
Clothianidin	108	107	P/P	60 - 150
Dinotefuran	110	111	P/P	50 - 150
Diuron	87.5	88.3	P/P	60 - 160
Fenuron	110	107	P/P	60 - 150
Fluridone	118	117	P/P	60 - 160
Hydrocodone	113	113	P/P	60 - 150
Ibuprofen	84.3	86.0	P/P	50 - 160
Imazapyr	111	126	P/P	50 - 150
Imidacloprid	99.6	102	P/P	60 - 150
Linuron	106	100	P/P	60 - 150
Mandestrobin	102	109	P/P	50 - 150
MCPP	95.0	112	P/P	50 - 150
Naproxen	121	113	P/P	50 - 160
Primidone	96.1	95.8	P/P	60 - 150
Pyraclostrobin	108	116	P/P	60 - 150
Thiamethoxam	117	116	P/P	50 - 150
Tolfenpyrad	102	116	P/P	60 - 150
Triclopyr	99.8	98.7	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	127	130	149		13.6
	2,4,5-T	119	97.7	132		29.7
	Acesulfame K	150	193	160		18.7
	Acetaminophen	76.4	96.0	237		84.5
	Acetamiprid	94.3	106	109		2.55
	Afidopyropen	73.3	80.6	79.3		1.68
	AMPA	84.1	86.9	85.6		1.42
	Bentazon	37.3	33.0	41.8		17.0
	Benzovindiflupyr	82.9	85.2	96.8		12.8
	Carbamazepine	85.9	84.5	95.2		11.0
	Clothianidin	97.4	120	129		7.28
	Dinotefuran	87.2	114	118		3.60
	Diuron	76.7	74.4	70.0		6.08
	Endothall	99.7	88.1	78.6		11.4
	Fenuron	98.2	112	122		8.32
	Fluridone	97.0	103	106		2.87
	Glufosinate	82.7	69.5	61.0		13.0
	Glyphosate	65.5	118	138		14.1
	Hydrocodone	93.0	115	125		8.23
	Ibuprofen	82.3	69.9	90.7		25.9
	Imazapyr	107	129	149		14.4
	Imidacloprid	107	149	185		19.2
	Linuron	70.9	89.4	94.7		5.80
	Mandestrobin	90.0	88.6	94.9		6.94
	MCPP	140	152	177		14.7
	Naproxen	99.3	90.5	99.2		9.23
	Primidone	75.4	108	112		2.91
	Pyraclostrobin	79.3	77.8	87.0		11.1
	Sucralose	99.5	95.1	103		7.10
	Thiamethoxam	101	146	170		15.5
	Tolfenpyrad	56.7	62.1	57.3		8.09
	Triclopyr	125	98.0	149		41.0

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2240275
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2240275

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/16/2021	04/20/2021 09:00	Hoor Shaik	04/30/2021 08:33	Juyoung Kim	2240275
	04/16/2021	04/20/2021 09:00	Hoor Shaik	04/30/2021 10:22	Juyoung Kim	2240275
	04/16/2021	04/20/2021 10:30	Rebecca Ware	04/20/2021 15:04	Rebecca Ware	2240275
	04/16/2021	04/20/2021 10:30	Rebecca Ware	04/28/2021 19:10	Rebecca Ware	2240275