

Chemical Analysis Report

SO-DIST-2021-06-09-02

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

Event Description: **2021 SMP : Estero Cricks**

Request ID: **RQ-2021-05-03-63**

Customer: **SO-DIST**

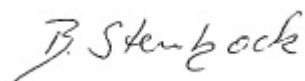
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 29-JUN-2021 11:38



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: HendryCreekHouse1Upstrm

Collection Date/Time: 06/08/2021 10:15

Field ID: G1SD0118

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2253881	EPA 8321B	Acesulfame K	0.10	U	ug/L	P399425	
		2,4-D	0.20		ug/L	P399432	
		AMPA	1.0	U	ug/L	P399425	
		2,4,5-T	0.0040	U	ug/L	P399432	
		Acetaminophen	0.0080	U	ug/L	P399432	
		Endothall	0.25	U	ug/L	P399425	
		Acetamiprid	0.0020	U	ug/L	P399432	
		Glufosinate	1.0	U	ug/L	P399425	
		Glyphosate	1.0	U	ug/L	P399425	
		Afidopyropen	0.0020	U	ug/L	P399432	
		Sucralose	0.19		ug/L	P399425	
		Bentazon	0.027		ug/L	P399432	MS
		Benzovindiflupyr	0.0020	U	ug/L	P399432	
		Carbamazepine	8.0E-04	U	ug/L	P399432	
		Clothianidin	0.0035	I	ug/L	P399432	
		Dinotefuran	0.0020	U	ug/L	P399432	
		Diuron	0.053		ug/L	P399432	
		Fenuron	0.016	U	ug/L	P399432	
		Fluridone	0.030		ug/L	P399432	
		Imazapyr	0.11		ug/L	P399432	
		Hydrocodone	0.0020	U	ug/L	P399432	
		Ibuprofen	0.020	U	ug/L	P399432	
		Imidacloprid	0.13		ug/L	P399432	MS
		Linuron	0.0040	U	ug/L	P399432	
		Mandestrobin	0.0020	U	ug/L	P399432	
		MCPP	0.014		ug/L	P399432	MS
		Naproxen	0.0080	U	ug/L	P399432	
		Primidone	0.0040	U	ug/L	P399432	
		Pyraclostrobin	0.0020	U	ug/L	P399432	
		Thiamethoxam	0.0030	I	ug/L	P399432	
		Tolfenpyrad	0.0020	U	ug/L	P399432	
		Triclopyr	0.0040	U	ug/L	P399432	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference.

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P399425

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: P399432

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P399425

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	83.0		P	40 - 150
AMPA	96.0		P	40 - 150
Endothall	108		P	40 - 150
Glufosinate	110		P	40 - 150
Glyphosate	112		P	40 - 150
Sucralose	93.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P399432

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	103		P	30 - 160
2,4,5-T	113		P	30 - 160
Acetaminophen	68.3		P	30 - 150
Acetamiprid	86.9		P	30 - 160
Afidopyropen	78.1		P	30 - 160
Bentazon	37.6		P	30 - 150
Benzovindiflupyr	82.5		P	30 - 160
Carbamazepine	81.4		P	30 - 160
Clothianidin	94.3		P	30 - 160
Dinotefuran	78.2		P	30 - 160
Diuron	84.2		P	30 - 160
Fenuron	98.5		P	30 - 160
Fluridone	82.0		P	30 - 160
Hydrocodone	91.0		P	30 - 160
Ibuprofen	71.9		P	30 - 160
Imazapyr	92.8		P	30 - 160
Imidacloprid	87.0		P	30 - 160
Linuron	73.1		P	30 - 160
Mandestrobin	93.7		P	30 - 160
MCPP	140		P	30 - 160
Naproxen	96.6		P	30 - 160
Primidone	90.4		P	30 - 160
Pyraclostrobin	71.7		P	30 - 160
Thiamethoxam	85.2		P	30 - 160
Tolfenpyrad	56.8		P	30 - 160
Triclopyr	113		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P399425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253793	Acesulfame K	115	114	P/P	40 - 150
2253793	AMPA	79.8	83.5	P/P	40 - 150
2253793	Endothall	58.6	70.1	P/P	40 - 150
2253793	Glufosinate	115	119	P/P	40 - 150
2253793	Glyphosate	102	102	P/P	40 - 150
2253793	Sucralose	100	111	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P399432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253793	2,4-D	146	152	P/P	30 - 160
2253793	2,4,5-T	126	151	P/P	30 - 160
2253793	Acetaminophen	74.7	78.0	P/P	30 - 150
2253793	Acetamiprid	83.9	72.6	P/P	30 - 160
2253793	Afidopyropen	82.5	77.0	P/P	30 - 160
2253793	Bentazon	22.2	28.3	F/F	30 - 150
2253793	Benzovindiflupyr	90.7	101	P/P	30 - 160
2253793	Carbamazepine	85.0	88.7	P/P	30 - 160
2253793	Clothianidin	102	107	P/P	30 - 160
2253793	Dinotefuran	96.0	95.3	P/P	30 - 160
2253793	Diuron	80.8	78.9	P/P	30 - 160
2253793	Fenuron	82.3	87.4	P/P	30 - 160
2253793	Fluridone	79.2	86.4	P/P	30 - 160
2253793	Hydrocodone	82.1	88.9	P/P	30 - 160
2253793	Ibuprofen	95.8	90.3	P/P	30 - 160
2253793	Imidacloprid	163	179	F/F	30 - 160
2253793	Linuron	75.5	80.9	P/P	30 - 160
2253793	Mandestrobin	100	110	P/P	30 - 160
2253793	MCPP	188	217	F/F	30 - 160
2253793	Naproxen	110	124	P/P	30 - 160
2253793	Primidone	97.5	97.5	P/P	30 - 160
2253793	Pyraclostrobin	75.2	84.4	P/P	30 - 160
2253793	Thiamethoxam	112	116	P/P	30 - 160
2253793	Tolfenpyrad	68.5	79.8	P/P	30 - 160
2253793	Triclopyr	147	156	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P399425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253793	Acesulfame K	1.01	Spike	P	0 - 30
2253793	AMPA	4.30	Spike	P	0 - 30
2253793	Endothall	17.9	Spike	P	0 - 30
2253793	Glufosinate	2.93	Spike	P	0 - 30
2253793	Glyphosate	0.200	Spike	P	0 - 30
2253793	Sucralose	10.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P399432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253793	2,4-D	3.09	Spike	P	0 - 30
2253793	2,4,5-T	18.3	Spike	P	0 - 30
2253793	Acetaminophen	4.36	Spike	P	0 - 30
2253793	Acetamiprid	14.4	Spike	P	0 - 30
2253793	Afidopyropen	6.86	Spike	P	0 - 30
2253793	Bentazon	10.1	Spike	P	0 - 30
2253793	Benzovindiflupyr	10.9	Spike	P	0 - 30
2253793	Carbamazepine	4.28	Spike	P	0 - 30
2253793	Clothianidin	4.04	Spike	P	0 - 30
2253793	Dinotefuran	0.774	Spike	P	0 - 30
2253793	Diuron	2.40	Spike	P	0 - 30
2253793	Fenuron	6.07	Spike	P	0 - 30
2253793	Fluridone	7.13	Spike	P	0 - 30
2253793	Hydrocodone	8.02	Spike	P	0 - 30
2253793	Ibuprofen	5.90	Spike	P	0 - 30
2253793	Imazapyr	4.16	Spike	P	0 - 30
2253793	Imidacloprid	9.06	Spike	P	0 - 30
2253793	Linuron	6.92	Spike	P	0 - 30
2253793	Mandestrobin	9.38	Spike	P	0 - 30
2253793	MCPP	14.3	Spike	P	0 - 30
2253793	Naproxen	12.6	Spike	P	0 - 30
2253793	Primidone	0.0615	Spike	P	0 - 30
2253793	Pyraclostrobin	11.5	Spike	P	0 - 30
2253793	Thiamethoxam	3.82	Spike	P	0 - 30
2253793	Tolfenpyrad	15.3	Spike	P	0 - 30
2253793	Triclopyr	5.90	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2253881

Field Sample ID: G1SD0118

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	83.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.9	P	30 - 160
EPA 8321B	Diuron-d6	68.5	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	55.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.1	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	57.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A106009
Included Lab Sample IDs: 2253881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	92.3	100	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A106011
Included Lab Sample IDs: 2253881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	78.7	80.7	P/P	60 - 160
Endothall	105	109	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A106015
Included Lab Sample IDs: 2253881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	102	105	P/P	60 - 160
Glufosinate	115	120	P/P	60 - 160
Glyphosate	117	125	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A106199
Included Lab Sample IDs: 2253881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.6	93.6	P/P	50 - 150
2,4,5-T	100	95.9	P/P	50 - 150
Acetaminophen	85.4	78.4	P/P	60 - 160
Acetamiprid	105	98.2	P/P	50 - 150
Afidopyropen	119	107	P/P	50 - 150
Bentazon	91.2	81.6	P/P	50 - 160
Benzovindiflupyr	101	93.9	P/P	50 - 160
Carbamazepine	111	106	P/P	60 - 150
Clothianidin	114	88.1	P/P	60 - 150
Dinotefuran	92.6	89.5	P/P	50 - 150
Diuron	98.4	109	P/P	60 - 160
Fenuron	107	98.1	P/P	60 - 150
Fluridone	127	114	P/P	60 - 160
Hydrocodone	110	102	P/P	60 - 150
Ibuprofen	83.0	79.5	P/P	50 - 160
Imazapyr	100	61.0	P/P	50 - 150
Imidacloprid	90.4	91.6	P/P	60 - 150
Linuron	124	102	P/P	60 - 150
Mandestrobin	116	108	P/P	50 - 150
MCPP	106	99.4	P/P	50 - 150
Naproxen	119	99.2	P/P	50 - 160
Primidone	83.2	103	P/P	60 - 150
Pyraclostrobin	86.6	89.4	P/P	60 - 150
Thiamethoxam	97.5	71.6	P/P	50 - 150
Tolfenpyrad	118	110	P/P	60 - 150
Triclopyr	103	93.9	P/P	50 - 150

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	103	146	152		3.09
	2,4,5-T	113	126	151		18.3
	Acesulfame K	83.0	115	114		1.01
	Acetaminophen	68.3	78.0	74.7		4.36
	Acetamiprid	86.9	83.9	72.6		14.4
	Afidopyropen	78.1	82.5	77.0		6.86
	AMPA	96.0	79.8	83.5		4.30
	Bentazon	37.6	22.2	28.3		10.1
	Benzovindiflupyr	82.5	90.7	101		10.9
	Carbamazepine	81.4	85.0	88.7		4.28
	Clothianidin	94.3	102	107		4.04
	Dinotefuran	78.2	96.0	95.3		0.774
	Diuron	84.2	80.8	78.9		2.40
	Endothall	108	58.6	70.1		17.9
	Fenuron	98.5	82.3	87.4		6.07
	Fluridone	82.0	79.2	86.4		7.13
	Glufosinate	110	115	119		2.93
	Glyphosate	112	102	102		0.200
	Hydrocodone	91.0	82.1	88.9		8.02
	Ibuprofen	71.9	95.8	90.3		5.90
	Imazapyr	92.8				4.16
	Imidacloprid	87.0	163	179		9.06
	Linuron	73.1	75.5	80.9		6.92
	Mandestrobin	93.7	100	110		9.38
	MCPP	140	188	217		14.3
	Naproxen	96.6	110	124		12.6
	Primidone	90.4	97.5	97.5		0.0615
	Pyraclostrobin	71.7	75.2	84.4		11.5
	Sucralose	93.2	100	111		10.3
	Thiamethoxam	85.2	112	116		3.82
	Tolfenpyrad	56.8	68.5	79.8		15.3
	Triclopyr	113	147	156		5.90

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2253881

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/09/2021	06/10/2021 13:00	Juyoung Kim	06/10/2021 18:53	Juyoung Kim	2253881
	06/09/2021	06/10/2021 13:00	Juyoung Kim	06/10/2021 23:47	Juyoung Kim	2253881
	06/09/2021	06/10/2021 13:00	Juyoung Kim	06/11/2021 07:21	Juyoung Kim	2253881
	06/09/2021	06/14/2021 09:00	Hoor Shaik	06/20/2021 23:21	Juyoung Kim	2253881