Chemical Analysis Report

SO-DIST-2021-03-16-01

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

Event Description: **2021 SMP : Collier Coco**
Request ID: **RQ-2021-03-15-54**
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: Chris Hormuth

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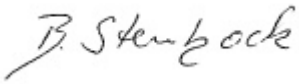
Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 29-MAR-2021 15:07



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: Coco @ Ibis Way **Collection Date/Time: 03/15/2021 14:00**

Field ID: G1SD0119 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2231610	EPA 8321B	2,4-D	24		ug/L	P395071	
		Acesulfame K	0.10	U	ug/L	P395125	MS
		AMPA	4.8		ug/L	P395125	
		2,4,5-T	0.0040	U	ug/L	P395071	
		Sucralose	0.010	U	ug/L	P395125	
		Acetaminophen	0.0080	U	ug/L	P395071	
		Endothall	0.25	U	ug/L	P395125	
		Acetamiprid	0.0020	U	ug/L	P395071	
		Glufosinate	1.0	U	ug/L	P395125	
		Glyphosate	3.2E+03	J	ug/L	P395125	LCS
		Afidopyropen	0.0020	U	ug/L	P395071	
		Bentazon	0.17		ug/L	P395071	
		Benzovindiflupyr	0.0020	U	ug/L	P395071	
		Carbamazepine	8.0E-04	U	ug/L	P395071	
		Clothianidin	0.0033	I	ug/L	P395071	
		Dinotefuran	0.0052	I	ug/L	P395071	
		Diuron	0.0020	U	ug/L	P395071	
		Fenuron	0.016	U	ug/L	P395071	
		Fluridone	0.090		ug/L	P395071	
		Imazapyr	0.068		ug/L	P395071	
		Hydrocodone	0.0020	U	ug/L	P395071	
		Ibuprofen	0.020	U	ug/L	P395071	
		Imidacloprid	0.026		ug/L	P395071	
		Linuron	0.0040	U	ug/L	P395071	
		Mandestrobin	0.0020	U	ug/L	P395071	
		MCPP	0.0020	U	ug/L	P395071	
		Naproxen	0.0080	U	ug/L	P395071	
		Primidone	0.0040	U	ug/L	P395071	
		Pyraclostrobin	0.0020	U	ug/L	P395071	
		Thiamethoxam	0.0020	U	ug/L	P395071	
		Tolfenpyrad	0.0020	U	ug/L	P395071	
		Triclopyr	0.0040	U	ug/L	P395071	

Ref. Method and Comment:
EPA 8321B: The surrogate 2,4-D-d3 recovery could not be assessed due to an elevated level of 2,4-D in the sample matrix.
EPA 8321B: MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P395071

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: P395125

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: P395071

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	133		P	30 - 160
2,4,5-T	103		P	30 - 160
Acetaminophen	92.2		P	30 - 160
Acetamiprid	109		P	30 - 160
Afidopyropen	79.1		P	30 - 160
Bentazon	91.2		P	30 - 160
Benzovindiflupyr	92.0		P	30 - 160
Carbamazepine	105		P	30 - 160
Clothianidin	103		P	30 - 160
Dinotefuran	106		P	30 - 160
Diuron	78.3		P	30 - 160
Fenuron	107		P	30 - 160
Fluridone	101		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	102		P	30 - 160
Imazapyr	112		P	30 - 160
Imidacloprid	112		P	30 - 160
Linuron	85.5		P	30 - 160
Mandestrobin	96.1		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	56.1		P	30 - 160
Primidone	99.7		P	30 - 160
Pyraclostrobin	89.1		P	30 - 160
Thiamethoxam	110		P	30 - 160
Tolfenpyrad	62.8		P	30 - 160
Triclopyr	107		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P395125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	115		P	40 - 150
AMPA	104		P	40 - 150
Endothall	87.4		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	148		F	40 - 140
Sucralose	93.5		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P395071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	2,4-D	116	124	P/P	30 - 160
2231596	2,4,5-T	98.9	103	P/P	30 - 160
2231596	Acetaminophen	94.8	103	P/P	30 - 160
2231596	Acetamiprid	107	97.0	P/P	30 - 160
2231596	Afidopyropen	78.5	65.5	P/P	30 - 160
2231596	Bentazon	67.7	70.4	P/P	30 - 160
2231596	Benzovindiflupyr	89.4	92.9	P/P	30 - 160
2231596	Carbamazepine	95.3	91.9	P/P	30 - 160
2231596	Clothianidin	113	101	P/P	30 - 160
2231596	Dinotefuran	109	95.4	P/P	30 - 160
2231596	Diuron	64.9	67.1	P/P	30 - 160
2231596	Fenuron	93.9	97.0	P/P	30 - 160
2231596	Fluridone	87.5	90.0	P/P	30 - 160
2231596	Hydrocodone	108	104	P/P	30 - 160
2231596	Ibuprofen	82.1	83.6	P/P	30 - 160
2231596	Imazapyr	118	113	P/P	30 - 160
2231596	Imidacloprid	137	135	P/P	30 - 160
2231596	Linuron	74.3	73.9	P/P	30 - 160
2231596	Mandestrobin	86.6	88.4	P/P	30 - 160
2231596	MCPP	107	112	P/P	30 - 160
2231596	Naproxen	73.6	80.1	P/P	30 - 160
2231596	Primidone	101	99.6	P/P	30 - 160
2231596	Pyraclostrobin	85.7	84.9	P/P	30 - 160
2231596	Thiamethoxam	135	126	P/P	30 - 160
2231596	Tolfenpyrad	58.0	59.2	P/P	30 - 160
2231596	Triclopyr	102	103	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P395125

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2231596	Acesulfame K	177	145	F/P	40 - 150
2231596	AMPA	120	127	P/P	40 - 150
2231596	Endothall	82.1	109	P/P	40 - 150
2231596	Glufosinate	134	135	P/P	40 - 150
2231596	Glyphosate	105	92.0	P/P	40 - 140
2231596	Sucralose	105	103	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P395071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231596	2,4-D	7.04	Spike	P	0 - 30
2231596	2,4,5-T	3.76	Spike	P	0 - 30
2231596	Acetaminophen	7.94	Spike	P	0 - 30
2231596	Acetamiprid	9.90	Spike	P	0 - 30
2231596	Afidopyropen	18.0	Spike	P	0 - 30
2231596	Bentazon	3.94	Spike	P	0 - 30
2231596	Benzovindiflupyr	3.90	Spike	P	0 - 30
2231596	Carbamazepine	3.55	Spike	P	0 - 30
2231596	Clothianidin	10.8	Spike	P	0 - 30
2231596	Dinotefuran	12.9	Spike	P	0 - 30
2231596	Diuron	3.40	Spike	P	0 - 30
2231596	Fenuron	3.30	Spike	P	0 - 30
2231596	Fluridone	2.78	Spike	P	0 - 30
2231596	Hydrocodone	4.03	Spike	P	0 - 30
2231596	Ibuprofen	1.90	Spike	P	0 - 30
2231596	Imazapyr	4.41	Spike	P	0 - 30
2231596	Imidacloprid	1.59	Spike	P	0 - 30
2231596	Linuron	0.482	Spike	P	0 - 30
2231596	Mandestrobin	2.10	Spike	P	0 - 30
2231596	MCPP	5.39	Spike	P	0 - 30
2231596	Naproxen	8.42	Spike	P	0 - 30
2231596	Primidone	1.68	Spike	P	0 - 30
2231596	Pyraclostrobin	0.919	Spike	P	0 - 30
2231596	Thiamethoxam	6.85	Spike	P	0 - 30
2231596	Tolfenpyrad	2.03	Spike	P	0 - 30
2231596	Triclopyr	1.54	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P395125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2231596	Acesulfame K	19.8	Spike	P	0 - 30
2231596	AMPA	6.11	Spike	P	0 - 30
2231596	Endothall	28.3	Spike	P	0 - 30
2231596	Glufosinate	0.981	Spike	P	0 - 30
2231596	Glyphosate	13.5	Spike	P	0 - 30
2231596	Sucralose	1.82	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2231610
Field Sample ID: G1SD0119

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	93.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.4	P	30 - 160
EPA 8321B	Diuron-d6	68.1	P	30 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	135	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	135	P	40 - 160
EPA 8321B	Ibuprofen-d3	80.4	P	30 - 160
EPA 8321B	Primidone-d5	94.9	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160
EPA 8321B	Sucralose-d6	118	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A104192
Included Lab Sample IDs: 2231610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	158	99.9	P/P	60 - 160
AMPA	122	121	P/P	60 - 160
Endothall	86.5	122	P/P	60 - 160
Glufosinate	117	115	P/P	60 - 160
Glyphosate	151	143	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A104272
Included Lab Sample IDs: 2231610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.7	101	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A104297
Included Lab Sample IDs: 2231610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	124	P/P	50 - 150
2,4,5-T	100	99.6	P/P	50 - 150
Acetaminophen	106	111	P/P	60 - 160
Acetamiprid	107	108	P/P	50 - 150
Afidopyropen	103	85.5	P/P	50 - 150
Bentazon	104	92.1	P/P	50 - 160
Benzovindiflupyr	115	114	P/P	50 - 160
Carbamazepine	104	106	P/P	60 - 150
Clothianidin	113	107	P/P	60 - 150
Dinotefuran	108	113	P/P	50 - 150
Diuron	107	109	P/P	60 - 160
Fenuron	105	104	P/P	60 - 150
Fluridone	101	105	P/P	60 - 160
Hydrocodone	114	111	P/P	60 - 150
Ibuprofen	117	89.1	P/P	50 - 160
Imazapyr	97.3	104	P/P	50 - 160
Imidacloprid	103	101	P/P	60 - 150
Linuron	97.2	102	P/P	60 - 150
Mandestrobin	108	107	P/P	50 - 150
MCPP	107	106	P/P	50 - 150
Naproxen	98.6	99.0	P/P	50 - 160
Primidone	97.1	98.8	P/P	60 - 150
Pyraclostrobin	110	108	P/P	60 - 150
Thiamethoxam	110	115	P/P	50 - 150
Tolfenpyrad	106	108	P/P	60 - 150
Triclopyr	117	94.6	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		
					LCS	SMP	MS
EPA 8321B	2,4-D	133	116	124			7.04
	2,4,5-T	103	98.9	103			3.76
	Acesulfame K	115	177	145			19.8
	Acetaminophen	92.2	94.8	103			7.94
	Acetamiprid	109	107	97.0			9.90
	Afidopyropen	79.1	78.5	65.5			18.0
	AMPA	104	120	127			6.11
	Bentazon	91.2	67.7	70.4			3.94
	Benzovindiflupyr	92.0	89.4	92.9			3.90
	Carbamazepine	105	95.3	91.9			3.55
	Clothianidin	103	113	101			10.8
	Dinotefuran	106	109	95.4			12.9
	Diuron	78.3	64.9	67.1			3.40
	Endothall	87.4	82.1	109			28.3
	Fenuron	107	93.9	97.0			3.30
	Fluridone	101	87.5	90.0			2.78
	Glufosinate	125	134	135			0.981
	Glyphosate	148	105	92.0			13.5
	Hydrocodone	105	108	104			4.03
	Ibuprofen	102	82.1	83.6			1.90
	Imazapyr	112	118	113			4.41
	Imidacloprid	112	137	135			1.59
	Linuron	85.5	74.3	73.9			0.482
	Mandestrobin	96.1	86.6	88.4			2.10
	MCPP	123	107	112			5.39
	Naproxen	56.1	73.6	80.1			8.42
	Primidone	99.7	101	99.6			1.68
	Pyraclostrobin	89.1	85.7	84.9			0.919
	Sucralose	93.5	105	103			1.82
	Thiamethoxam	110	135	126			6.85
	Tolfenpyrad	62.8	58.0	59.2			2.03
	Triclopyr	107	102	103			1.54

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2231610
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2231610

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/16/2021	03/18/2021 09:00	Hoor Shaik	03/26/2021 01:19	Juyoung Kim	2231610
	03/16/2021	03/18/2021 09:00	Hoor Shaik	03/26/2021 11:43	Juyoung Kim	2231610
	03/16/2021	03/18/2021 10:30	Rebecca Ware	03/18/2021 12:18	Rebecca Ware	2231610
	03/16/2021	03/18/2021 10:30	Rebecca Ware	03/18/2021 16:18	Rebecca Ware	2231610
	03/16/2021	03/18/2021 10:30	Rebecca Ware	03/19/2021 14:52	Rebecca Ware	2231610
	03/16/2021	03/18/2021 10:30	Rebecca Ware	03/24/2021 16:44	Rebecca Ware	2231610