

Chemical Analysis Report

SO-DIST-2018-04-05-02

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

Event Description: **D.T. Sara**
Request ID: **RQ-2018-04-02-68**
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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 03-MAY-2018 15:35

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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 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: DrainToHudson @ShadeAve

Collection Date/Time: 04/04/2018 10:05

Field ID: G3SD0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981729	EPA 8321B	2,4-D	0.25		ug/L	P342880	
		Sucralose**	0.13	I	ug/L	P342827	
		Bentazon	8.0E-04	U	ug/L	P342880	
		MCP	0.060		ug/L	P342880	
		Triclopyr**	0.0040	U	ug/L	P342880	
		Imidacloprid	0.058		ug/L	P342880	MS
		Diuron	0.0024	I	ug/L	P342880	
		Pyraclostrobin**	0.0020	U	ug/L	P342880	
		Primidone**	0.0040	U	ug/L	P342880	
		Linuron	0.0040	U	ug/L	P342880	
		Acetaminophen**	0.0080	U	ug/L	P342880	MS
		Fenuron	0.016	U	ug/L	P342880	
		Imazapyr**	1.2		ug/L	P342880	
		Carbamazepine**	4.0E-04	U	ug/L	P342880	
		Fluridone**	8.0E-04	U	ug/L	P342880	
		Hydrocodone**	8.0E-04	U	ug/L	P342880	

Sample Location: Whitaker @ Museum Pier

Collection Date/Time: 04/04/2018 10:50

Field ID: G3SD0105

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981730	EPA 8321B	2,4-D	0.0020	U	ug/L	P342880	
		Sucralose**	0.12	I	ug/L	P342827	
		Bentazon	0.0035		ug/L	P342880	
		MCP	0.0020	U	ug/L	P342880	
		Triclopyr**	0.0040	U	ug/L	P342880	
		Imidacloprid	0.0027	I	ug/L	P342880	MS
		Diuron	0.0030	I	ug/L	P342880	
		Pyraclostrobin**	0.0020	U	ug/L	P342880	
		Primidone**	0.0040	U	ug/L	P342880	
		Linuron	0.0040	U	ug/L	P342880	
		Acetaminophen**	0.0080	U	ug/L	P342880	MS
		Fenuron	0.016	U	ug/L	P342880	
		Imazapyr**	0.088		ug/L	P342880	
		Carbamazepine**	5.2E-04	I	ug/L	P342880	
		Fluridone**	0.0017	I	ug/L	P342880	
		Hydrocodone**	8.0E-04	U	ug/L	P342880	

Sample Location: Walker Creek @ 32nd St

Collection Date/Time: 04/04/2018 11:15

Field ID: G3SD0094

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981731	EPA 8321B	2,4-D	0.0040	I	ug/L	P342880	
		Sucralose**	0.22	I	ug/L	P342827	

Field ID: G3SD0094

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1981731	EPA 8321B	Bentazon	0.020		ug/L	P342880	
		MCP	0.0030	I	ug/L	P342880	
		Triclopyr**	0.0040	U	ug/L	P342880	
		Imidacloprid	0.023		ug/L	P342880	MS
		Diuron	0.0061	I	ug/L	P342880	
		Pyraclorobin**	0.0020	U	ug/L	P342880	
		Primidone**	0.0069	I	ug/L	P342880	
		Linuron	0.0040	U	ug/L	P342880	
		Acetaminophen**	0.0080	U	ug/L	P342880	MS
		Fenuron	0.016	U	ug/L	P342880	
		Imazapyr**	0.59		ug/L	P342880	
		Carbamazepine**	0.0035		ug/L	P342880	
		Fluridone**	0.011		ug/L	P342880	
		Hydrocodone**	8.0E-04	U	ug/L	P342880	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P342827

Component	Result	Code	Units
Sucralose	0.11	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P342880

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.021	I	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclorobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P342827

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	115		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P342880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	100		P	40 - 150
Acetaminophen	120		P	30 - 150
Bentazon	109		P	30 - 150
Carbamazepine	84.9		P	40 - 150
Diuron	65.1		P	40 - 150
Fenuron	124		P	40 - 150
Fluridone	60.3		P	40 - 150
Hydrocodone	112		P	40 - 150
Imazapyr	88.7		P	40 - 150
Imidacloprid	115		P	40 - 160
Linuron	78.1		P	40 - 150
MCP	92.3		P	40 - 150
Primidone	108		P	40 - 150
Pyraclostrobin	70.8		P	40 - 150
Triclopyr	91.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P342827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1981709	Sucralose	51.2	49.6	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P342880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1983038	2,4-D	103	106	P/P	40 - 150
1983038	Acetaminophen	162	156	F/F	30 - 150
1983038	Bentazon	36.3	30.2	P/P	30 - 150
1983038	Carbamazepine	105	108	P/P	40 - 150
1983038	Diuron	73.9	71.7	P/P	40 - 150
1983038	Fenuron	110	104	P/P	40 - 150
1983038	Fluridone	47.2	56.1	P/P	40 - 150
1983038	Hydrocodone	123	116	P/P	40 - 150
1983038	Imazapyr	109	92.7	P/P	40 - 150
1983038	Imidacloprid	248	233	F/F	40 - 160
1983038	Linuron	82.0	91.2	P/P	40 - 150
1983038	MCP	75.1	83.1	P/P	40 - 150
1983038	Primidone	108	113	P/P	40 - 150
1983038	Pyraclostrobin	53.9	65.6	P/P	40 - 150
1983038	Triclopyr	78.5	83.4	P/P	40 - 150

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P342827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1981709	Sucralose	1.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P342880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1983038	2,4-D	2.47	Spike	P	0 - 30
1983038	Acetaminophen	3.67	Spike	P	0 - 30
1983038	Bentazon	16.4	Spike	P	0 - 30
1983038	Carbamazepine	3.18	Spike	P	0 - 30
1983038	Diuron	0.849	Spike	P	0 - 30
1983038	Fenuron	6.05	Spike	P	0 - 30
1983038	Fluridone	17.3	Spike	P	0 - 30
1983038	Hydrocodone	6.02	Spike	P	0 - 30
1983038	Imazapyr	14.2	Spike	P	0 - 30
1983038	Imidacloprid	6.33	Spike	P	0 - 30
1983038	Linuron	10.7	Spike	P	0 - 30
1983038	MCPP	10.1	Spike	P	0 - 30
1983038	Primidone	4.90	Spike	P	0 - 30
1983038	Pyraclostrobin	19.5	Spike	P	0 - 30
1983038	Triclopyr	5.98	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1981729
Field Sample ID: G3SD0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	119	P	30 - 160
EPA 8321B	Acetaminophen-d4	125	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	77.1	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	62.4	P	40 - 160

Lab Sample ID: 1981730
Field Sample ID: G3SD0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	59.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.2	P	30 - 160
EPA 8321B	Diuron-d6	74.0	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1981731
Field Sample ID: G3SD0094

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	143	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	76.1	P	30 - 160
EPA 8321B	Primidone-d5	145	P	30 - 160
EPA 8321B	Sucralose-d6	62.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A83192
Included Lab Sample IDs: 1981729, 1981730, 1981731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	78.2	P/P	60 - 130
Sucralose	78.2	106	P/P	60 - 130

Reference Method: EPA 8321B
Run ID: A83283
Included Lab Sample IDs: 1981729, 1981730, 1981731

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.6	85.4	P/P	50 - 150
Acetaminophen	105	99.5	P/P	60 - 150
Bentazon	88.0	82.9	P/P	50 - 150
Carbamazepine	106	104	P/P	60 - 150
Diuron	114	106	P/P	60 - 150
Fenuron	109	110	P/P	60 - 150
Fluridone	99.5	98.9	P/P	60 - 160
Hydrocodone	98.8	113	P/P	60 - 150
Imazapyr	87.5	99.1	P/P	50 - 150
Imazapyr	89.4	87.5	P/P	50 - 150
Imidacloprid	94.8	108	P/P	60 - 150
Linuron	110	104	P/P	60 - 150
MCPP	102	94.2	P/P	50 - 150
Primidone	102	105	P/P	60 - 150
Pyraclostrobin	111	113	P/P	60 - 150
Triclopyr	90.9	95.7	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	LCS	Precision SMP	MS
EPA 8321B	2,4-D	100	103	106		2.47
	Acetaminophen	120	162	156		3.67

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Bentazon	109	36.3	30.2		16.4
	Carbamazepine	84.9	108	105		3.18
	Diuron	65.1	73.9	71.7		0.849
	Fenuron	124	110	104		6.05
	Fluridone	60.3	56.1	47.2		17.3
	Hydrocodone	112	123	116		6.02
	Imazapyr	88.7	109	92.7		14.2
	Imidacloprid	115	248	233		6.33
	Linuron	78.1	82.0	91.2		10.7
	MCPP	92.3	75.1	83.1		10.1
	Primidone	108	108	113		4.90
	Pyraclostrobin	70.8	53.9	65.6		19.5
	Sucralose	115	51.2	49.6		1.53
	Triclopyr	91.0	78.5	83.4		5.98

Reference Method Descriptions

Method / DoH Cert

EPA 8321B / E31780
EPA 8321B / E31780

Description

Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
Water soluble organic compounds by HPLC/MS/MS

Associated Samples

1981729, 1981730, 1981731
1981729, 1981730, 1981731

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	04/05/2018	04/09/2018 11:30	Julie Michelle Frank	04/11/2018 11:11	Julie Michelle Frank	1981729
	04/05/2018	04/09/2018 11:30	Julie Michelle Frank	04/11/2018 11:27	Julie Michelle Frank	1981730
	04/05/2018	04/09/2018 11:30	Julie Michelle Frank	04/11/2018 11:58	Julie Michelle Frank	1981731
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 04:03	Julie Michelle Frank	1981729
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 04:38	Julie Michelle Frank	1981730
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 05:13	Julie Michelle Frank	1981731
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 12:42	Julie Michelle Frank	1981729
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 20:12	Julie Michelle Frank	1981729
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 20:47	Julie Michelle Frank	1981730
	04/05/2018	04/11/2018 09:00	Hoor Shaik	04/13/2018 21:21	Julie Michelle Frank	1981731