

Chemical Analysis Report

SO-DIST-2018-08-01-01

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-2018-07-23-13**
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: 27-AUG-2018 14:16

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 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: 07/31/2018 09:45

Field ID: G3SD0134

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2012351	EPA 8321B	2,4-D	0.0039	I	ug/L	P349361	MS
		Sucralose**	0.15		ug/L	P349535	
		Bentazon	8.0E-04	U	ug/L	P349361	
		MCP	0.0020	U	ug/L	P349361	
		Triclopyr**	0.0040	U	ug/L	P349361	
		Imidacloprid	0.013		ug/L	P349361	
		Diuron	0.014		ug/L	P349361	
		Pyraclostrobin**	0.0020	U	ug/L	P349361	
		Primidone**	0.0040	U	ug/L	P349361	
		Linuron	0.0040	U	ug/L	P349361	
		Acetaminophen**	0.0080	U	ug/L	P349361	
		Fenuron	0.016	U	ug/L	P349361	
		Imazapyr**	0.82		ug/L	P349361	
		Carbamazepine**	0.0014	I	ug/L	P349361	
		Fluridone**	0.0025		ug/L	P349361	
		Hydrocodone**	8.0E-04	U	ug/L	P349361	
		Naproxen**	0.0080	U	ug/L	P349361	
		Ibuprofen**	0.020	U	ug/L	P349361	

Sample Location: Whitaker @ Museum Pier

Collection Date/Time: 07/31/2018 10:20

Field ID: G3SD0105

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2012352	EPA 8321B	2,4-D	0.11		ug/L	P349361	MS
		Sucralose**	0.45		ug/L	P349535	
		Bentazon	0.013		ug/L	P349361	
		MCPD	0.018		ug/L	P349361	
		Triclopyr**	0.0040	U	ug/L	P349361	
		Imidacloprid	0.020		ug/L	P349361	
		Diuron	0.018		ug/L	P349361	
		Pyraclostrobin**	0.0020	U	ug/L	P349361	
		Primidone**	0.0040	U	ug/L	P349361	
		Linuron	0.0040	U	ug/L	P349361	
		Acetaminophen**	0.016	I	ug/L	P349361	
		Fenuron	0.016	U	ug/L	P349361	
		Imazapyr**	23		ug/L	P349361	
		Carbamazepine**	0.0022	I	ug/L	P349361	
		Fluridone**	0.023		ug/L	P349361	
		Hydrocodone**	8.0E-04	U	ug/L	P349361	
		Naproxen**	0.0080	U	ug/L	P349361	
		Ibuprofen**	0.020	U	ug/L	P349361	

Sample Location: Walker Creek @ 32nd St

Collection Date/Time: 07/31/2018 11:10

Field ID: G3SD0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2012353	EPA 8321B	2,4-D	0.13		ug/L	P349361	MS
		Sucralose**	0.73		ug/L	P349535	
		Bentazon	0.018		ug/L	P349361	
		MCP	0.015		ug/L	P349361	
		Triclopyr**	0.0040	U	ug/L	P349361	
		Imidacloprid	0.023		ug/L	P349361	
		Diuron	0.0071	I	ug/L	P349361	
		Pyraclostrobin**	0.0020	U	ug/L	P349361	
		Primidone**	0.0057	I	ug/L	P349361	
		Linuron	0.0040	U	ug/L	P349361	
		Acetaminophen**	0.0080	U	ug/L	P349361	
		Fenuron	0.016	U	ug/L	P349361	
		Imazapyr**	19		ug/L	P349361	
		Carbamazepine**	0.0036		ug/L	P349361	
		Fluridone**	0.023		ug/L	P349361	
		Hydrocodone**	8.0E-04	U	ug/L	P349361	
		Naproxen**	0.0080	U	ug/L	P349361	
		Ibuprofen**	0.020	U	ug/L	P349361	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P349361

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P349535

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P349361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	126		P	40 - 150
Acetaminophen	85.6		P	30 - 150
Bentazon	88.1		P	30 - 150
Carbamazepine	115		P	40 - 150
Diuron	90.5		P	40 - 150
Fenuron	105		P	40 - 150
Fluridone	105		P	40 - 150
Hydrocodone	98.0		P	40 - 150
Ibuprofen	112		P	40 - 150
Imazapyr	108		P	40 - 150
Imidacloprid	98.7		P	40 - 160
Linuron	80.2		P	40 - 150
MCP	126		P	40 - 150
Naproxen	120		P	40 - 150
Primidone	115		P	40 - 150
Pyraclostrobin	86.9		P	40 - 150
Triclopyr	133		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P349535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	114		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P349361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011588	2,4-D	124	153	P/F	40 - 150
2011588	Acetaminophen	81.1	88.4	P/P	30 - 150
2011588	Bentazon	46.6	45.3	P/P	30 - 150
2011588	Carbamazepine	71.8	68.5	P/P	40 - 150
2011588	Diuron	60.6	47.7	P/P	40 - 150
2011588	Fenuron	87.3	85.3	P/P	40 - 150
2011588	Fluridone	93.2	74.2	P/P	40 - 150
2011588	Hydrocodone	81.9	81.0	P/P	40 - 150
2011588	Ibuprofen	73.6	74.9	P/P	40 - 150
2011588	Imazapyr	101	88.9	P/P	40 - 150
2011588	Imidacloprid	134	149	P/P	40 - 160
2011588	Linuron	48.6	59.1	P/P	40 - 150
2011588	MCP	121	119	P/P	40 - 150
2011588	Naproxen	103	96.9	P/P	40 - 150
2011588	Primidone	87.6	82.0	P/P	40 - 150
2011588	Pyraclostrobin	75.3	75.1	P/P	40 - 150
2011588	Triclopyr	121	121	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P349535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2011995	Sucralose	111	109	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P349361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011588	2,4-D	14.7	Spike	P	0 - 30
2011588	Acetaminophen	8.52	Spike	P	0 - 30
2011588	Bentazon	2.31	Spike	P	0 - 30
2011588	Carbamazepine	4.61	Spike	P	0 - 30
2011588	Diuron	21.9	Spike	P	0 - 30
2011588	Fenuron	2.34	Spike	P	0 - 30
2011588	Fluridone	9.41	Spike	P	0 - 30
2011588	Hydrocodone	1.06	Spike	P	0 - 30
2011588	Ibuprofen	1.74	Spike	P	0 - 30
2011588	Imazapyr	4.03	Spike	P	0 - 30
2011588	Imidacloprid	6.51	Spike	P	0 - 30
2011588	Linuron	19.4	Spike	P	0 - 30
2011588	MCP	1.76	Spike	P	0 - 30
2011588	Naproxen	6.02	Spike	P	0 - 30
2011588	Primidone	6.60	Spike	P	0 - 30
2011588	Pyraclostrobin	0.342	Spike	P	0 - 30
2011588	Triclopyr	0.157	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P349535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2011995	Sucralose	1.55	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: 2012351
Field Sample ID: G3SD0134

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	98.0	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.1	P	30 - 160
EPA 8321B	Diuron-d6	49.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	64.3	P	30 - 160
EPA 8321B	Primidone-d5	93.7	P	30 - 160
EPA 8321B	Sucralose-d6	96.5	P	40 - 160

Lab Sample ID: 2012352
Field Sample ID: G3SD0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.6	P	30 - 160
EPA 8321B	Diuron-d6	52.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	75.6	P	30 - 160
EPA 8321B	Primidone-d5	90.3	P	30 - 160
EPA 8321B	Sucralose-d6	98.4	P	40 - 160

Lab Sample ID: 2012353
Field Sample ID: G3SD0094

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.4	P	30 - 160
EPA 8321B	Diuron-d6	58.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.2	P	30 - 160
EPA 8321B	Primidone-d5	90.2	P	30 - 160
EPA 8321B	Sucralose-d6	97.8	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A85787

Included Lab Sample IDs: 2012351, 2012352, 2012353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	106	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A85823

Included Lab Sample IDs: 2012351, 2012352, 2012353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	135	81.7	P/P	50 - 150
Acetaminophen	117	126	P/P	60 - 160
Bentazon	85.1	71.1	P/P	50 - 160
Carbamazepine	110	122	P/P	60 - 160
Diuron	99.6	120	P/P	60 - 150
Fenuron	95.5	104	P/P	60 - 150
Fluridone	98.7	119	P/P	60 - 160
Hydrocodone	94.1	112	P/P	60 - 150
Ibuprofen	129	149	P/P	50 - 160
Imazapyr	93.1	89.2	P/P	50 - 150
Imidacloprid	94.2	109	P/P	60 - 150
Linuron	97.9	114	P/P	60 - 150
MCPP	104	106	P/P	50 - 150
Naproxen	107	149	P/P	50 - 160
Primidone	115	105	P/P	60 - 150
Pyraclostrobin	94.3	101	P/P	60 - 150
Triclopyr	112	112	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A85929

Included Lab Sample IDs: 2012352, 2012353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	70.9	99.7	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	126	124	153		14.7
	Acetaminophen	85.6	81.1	88.4		8.52
	Bentazon	88.1	46.6	45.3		2.31
	Carbamazepine	115	71.8	68.5		4.61
	Diuron	90.5	60.6	47.7		21.9
	Fenuron	105	87.3	85.3		2.34
	Fluridone	105	93.2	74.2		9.41
	Hydrocodone	98.0	81.9	81.0		1.06
	Ibuprofen	112	73.6	74.9		1.74
	Imazapyr	108	101	88.9		4.03
	Imidacloprid	98.7	134	149		6.51
	Linuron	80.2	48.6	59.1		19.4
	MCP	126	121	119		1.76
	Naproxen	120	103	96.9		6.02
	Primidone	115	87.6	82.0		6.60
	Pyraclostrobin	86.9	75.3	75.1		0.342
	Sucralose	114	111	109		1.55
	Triclopyr	133	121	121		0.157

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2012351, 2012352, 2012353
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2012351, 2012352, 2012353

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/11/2018 04:33	Juyoung Kim	2012351
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/11/2018 05:08	Juyoung Kim	2012352
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/11/2018 05:42	Juyoung Kim	2012353
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/12/2018 15:44	Juyoung Kim	2012351
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/12/2018 16:19	Juyoung Kim	2012352
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/12/2018 16:53	Juyoung Kim	2012353
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/16/2018 05:13	Juyoung Kim	2012352
	08/01/2018	08/02/2018 09:00	Hoor Shaik	08/16/2018 05:47	Juyoung Kim	2012353
	08/01/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 07:23	Mohammad Ghaffari	2012351
	08/01/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 07:38	Mohammad Ghaffari	2012352
	08/01/2018	08/03/2018 09:00	Mohammad Ghaffari	08/09/2018 07:52	Mohammad Ghaffari	2012353