

Chemical Analysis Report

SO-DIST-2018-02-13-01

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

Event Description: **D.T. Sara: Walker, Whitaker, Hudson**
Request ID: **RQ-2018-02-12-28**
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: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 26-FEB-2018 14:26



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: Walker Creek @ 32nd St

Collection Date/Time: 02/12/2018 10:15

Field ID: G3SD0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1966685	EPA 8321B	2,4-D	0.0020	U	ug/L	P339874	MS
		Sucralose**	0.90		ug/L	P339742	
		Bentazon	0.0033		ug/L	P339874	MS
		MCP	0.0033	I	ug/L	P339874	MS
		Triclopyr**	0.0040	U	ug/L	P339874	MS
		Imidacloprid	0.011		ug/L	P339874	
		Diuron	0.0042	I	ug/L	P339874	
		Primidone**	0.012	I	ug/L	P339874	
		Linuron	0.0040	U	ug/L	P339874	
		Acetaminophen**	0.0080	U	ug/L	P339874	
		Fenuron	0.0080	U	ug/L	P339874	
		Carbamazepine**	0.0046		ug/L	P339874	
		Fluridone**	0.057		ug/L	P339874	

Sample Location: Whitaker @ Museum Pier

Collection Date/Time: 02/12/2018 10:45

Field ID: G3SD0105

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1966686	EPA 8321B	2,4-D	0.0020	U	ug/L	P339874	MS
		Sucralose**	0.11		ug/L	P339742	
		Bentazon	0.0010	I	ug/L	P339874	MS
		MCP	0.0020	U	ug/L	P339874	MS
		Triclopyr**	0.0040	U	ug/L	P339874	MS
		Imidacloprid	0.0020	U	ug/L	P339874	
		Diuron	0.0046	I	ug/L	P339874	
		Primidone**	0.0040	U	ug/L	P339874	
		Linuron	0.0040	U	ug/L	P339874	
		Acetaminophen**	0.0080	U	ug/L	P339874	
		Fenuron	0.0080	U	ug/L	P339874	
		Carbamazepine**	4.0E-04	I	ug/L	P339874	
		Fluridone**	0.0072		ug/L	P339874	

Sample Location: Drain to Hudson @ US41

Collection Date/Time: 02/12/2018 11:25

Field ID: G3SD0104

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1966687	EPA 8321B	2,4-D	0.0020	U	ug/L	P339874	MS
		Sucralose**	0.34		ug/L	P339742	
		Bentazon	8.0E-04	U	ug/L	P339874	MS
		MCP	0.0020	U	ug/L	P339874	MS
		Triclopyr**	0.0040	U	ug/L	P339874	MS
		Imidacloprid	0.020		ug/L	P339874	
		Diuron	0.0031	I	ug/L	P339874	
		Primidone**	0.0040	U	ug/L	P339874	

Field ID: G3SD0104

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1966687	EPA 8321B	Linuron	0.0040	U	ug/L	P339874	
		Acetaminophen**	0.0080	U	ug/L	P339874	
		Fenuron	0.0080	U	ug/L	P339874	
		Carbamazepine**	7.9E-04	I	ug/L	P339874	
		Fluridone**	0.0017		ug/L	P339874	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P339742

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
 Batch ID: P339874

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	0.0080	U	ug/L
Fluridone	4.0E-04	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
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P339742

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

Reference Method: EPA 8321B
 Batch ID: P339874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	63.5		P	40 - 150
Acetaminophen	92.8		P	30 - 150
Bentazon	73.9		P	30 - 150
Carbamazepine	73.3		P	40 - 150
Diuron	76.0		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	72.9		P	40 - 150
Imidacloprid	87.8		P	40 - 160
Linuron	75.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P339874

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
MCPP	70.6		P	40 - 150
Primidone	88.3		P	40 - 150
Triclopyr	65.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P339742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1966475	Sucralose	143	145	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P339874

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1966576	2,4-D	38.1	40.6	F/P	40 - 150
1966576	Acetaminophen	120	114	P/P	30 - 150
1966576	Bentazon	24.8	29.5	F/F	30 - 150
1966576	Carbamazepine	71.5	71.1	P/P	40 - 150
1966576	Diuron	58.3	62.4	P/P	40 - 150
1966576	Fenuron	88.5	83.6	P/P	40 - 150
1966576	Fluridone	60.2	60.1	P/P	40 - 150
1966576	Imidacloprid	135	131	P/P	40 - 160
1966576	Linuron	70.9	64.7	P/P	40 - 150
1966576	MCPP	32.2	40.5	F/P	40 - 150
1966576	Primidone	102	103	P/P	40 - 150
1966576	Triclopyr	34.8	38.5	F/F	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P339742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1966475	Sucralose	1.74	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P339874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1966576	2,4-D	6.21	Spike	P	0 - 30
1966576	Acetaminophen	5.14	Spike	P	0 - 30
1966576	Bentazon	13.8	Spike	P	0 - 30
1966576	Carbamazepine	0.575	Spike	P	0 - 30
1966576	Diuron	5.78	Spike	P	0 - 30
1966576	Fenuron	5.73	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339874

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1966576	Fluridone	0.141	Spike	P	0 - 30
1966576	Imidacloprid	2.68	Spike	P	0 - 30
1966576	Linuron	9.16	Spike	P	0 - 30
1966576	MCPP	22.8	Spike	P	0 - 30
1966576	Primidone	1.10	Spike	P	0 - 30
1966576	Triclopyr	10.1	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: 1966685
Field Sample ID: G3SD0094

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	57.6	P	30 - 160
EPA 8321B	Acetaminophen-d4	139	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.6	P	30 - 160
EPA 8321B	Diuron-d6	73.5	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	126	P	40 - 160

Lab Sample ID: 1966686
Field Sample ID: G3SD0105

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	56.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.8	P	30 - 160
EPA 8321B	Diuron-d6	84.2	P	30 - 160
EPA 8321B	Primidone-d5	99.8	P	30 - 160
EPA 8321B	Sucralose-d6	82.4	P	40 - 160

Lab Sample ID: 1966687
Field Sample ID: G3SD0104

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	65.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	132	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.4	P	30 - 160
EPA 8321B	Diuron-d6	77.0	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	96.6	P	40 - 160

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A82157

Included Lab Sample IDs: 1966685, 1966686, 1966687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	110	110	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A82205

Included Lab Sample IDs: 1966685, 1966686, 1966687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.2	85.0	P/P	50 - 150
Acetaminophen	116	113	P/P	60 - 150
Acetaminophen	117	116	P/P	60 - 150
Bentazon	94.8	111	P/P	50 - 150
Carbamazepine	92.9	95.7	P/P	60 - 150
Carbamazepine	95.7	101	P/P	60 - 150
Diuron	116	122	P/P	60 - 150
Diuron	122	118	P/P	60 - 150
Fenuron	116	116	P/P	60 - 150
Fenuron	116	116	P/P	60 - 150
Fluridone	98.9	117	P/P	60 - 160
Fluridone	99.3	98.9	P/P	60 - 160
Imidacloprid	104	96.0	P/P	60 - 150
Imidacloprid	106	104	P/P	60 - 150
Linuron	108	117	P/P	60 - 150
Linuron	94.6	108	P/P	60 - 150
MCPP	99.0	96.0	P/P	50 - 150
Primidone	126	112	P/P	60 - 150
Primidone	95.8	126	P/P	60 - 150
Triclopyr	97.3	107	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	63.5	38.1 40.6			6.21
	Acetaminophen	92.8	120 114			5.14
	Bentazon	73.9	24.8 29.5			13.8
	Carbamazepine	73.3	71.5 71.1			0.575
	Diuron	76.0	58.3 62.4			5.78
	Fenuron	103	88.5 83.6			5.73
	Fluridone	72.9	60.2 60.1			0.141
	Imidacloprid	87.8	135 131			2.68
	Linuron	75.5	70.9 64.7			9.16
	MCPP	70.6	32.2 40.5			22.8
	Primidone	88.3	102 103			1.10
	Sucralose	111	143 145			1.74
	Triclopyr	65.5	34.8 38.5			10.1

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1966685, 1966686, 1966687
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1966685, 1966686, 1966687

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/13/2018	02/14/2018	Hoor Shaik	02/15/2018	Julie Michelle Frank	1966685, 1966686, 1966687
	02/13/2018	02/14/2018	Hoor Shaik	02/16/2018	Julie Michelle Frank	1966685, 1966686, 1966687
	02/13/2018	02/15/2018	Julie Michelle Frank	02/16/2018	Juyoung Kim	1966685, 1966686, 1966687