

Chemical Analysis Report

SO-DIST-2018-06-22-01

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

Event Description: **3240M : Stroud Creek**
Request ID: **RQ-2018-06-04-79**
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: 13-JUL-2018 11:12

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: Stroud Creek @ SR78 Up Side

Collection Date/Time: 06/21/2018 09:27

Field ID: AD78487

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002844	EPA 8321B	2,4-D	0.0020	U	ug/L	P347238	
		Bentazon	0.0027	I	ug/L	P347238	
		MCP	0.0030	I	ug/L	P347238	
		Triclopyr**	0.0040	U	ug/L	P347238	
		Imidacloprid	0.0025	I	ug/L	P347238	
		Diuron	0.0039	I	ug/L	P347238	
		Pyraclostrobin**	0.0020	U	ug/L	P347238	
		Primidone**	0.0040	U	ug/L	P347238	
		Linuron	0.0040	U	ug/L	P347238	
		Acetaminophen**	0.0080	U	ug/L	P347238	
		Fenuron	0.016	U	ug/L	P347238	
		Imazapyr**	0.042		ug/L	P347238	
		Carbamazepine**	4.3E-04	I	ug/L	P347238	
		Fluridone**	0.0095		ug/L	P347238	
		Hydrocodone**	8.0E-04	U	ug/L	P347238	
		Sucralose**	0.44		ug/L	P347344	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347238

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	0.016	U	ug/L
Fluridone	4.0E-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
MCPP	0.0020	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: P347344

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P347238

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	40 - 150
Acetaminophen	108		P	30 - 150
Bentazon	111		P	30 - 150
Carbamazepine	92.3		P	40 - 150
Diuron	85.7		P	40 - 150
Fenuron	106		P	40 - 150
Fluridone	89.0		P	40 - 150
Hydrocodone	101		P	40 - 150
Imazapyr	90.5		P	40 - 150
Imidacloprid	97.2		P	40 - 160
Linuron	63.6		P	40 - 150
MCPP	118		P	40 - 150
Primidone	91.4		P	40 - 150
Pyraclostrobin	87.4		P	40 - 150
Triclopyr	113		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P347344

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	71.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P347238

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003323	2,4-D	109	108	P/P	40 - 150
2003323	Acetaminophen	80.3	82.9	P/P	30 - 150
2003323	Bentazon	39.3	40.8	P/P	30 - 150
2003323	Carbamazepine	62.4	65.7	P/P	40 - 150
2003323	Diuron	59.4	62.2	P/P	40 - 150
2003323	Fenuron	70.3	71.6	P/P	40 - 150
2003323	Fluridone	79.7	77.6	P/P	40 - 150
2003323	Hydrocodone	80.5	80.8	P/P	40 - 150
2003323	Imazapyr	99.3	113	P/P	40 - 150
2003323	Imidacloprid	129	141	P/P	40 - 160
2003323	Linuron	57.2	51.2	P/P	40 - 150
2003323	MCPP	128	132	P/P	40 - 150
2003323	Primidone	79.5	74.8	P/P	40 - 150
2003323	Pyraclostrobin	77.7	82.2	P/P	40 - 150
2003323	Triclopyr	117	132	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002654	Sucralose	44.2	45.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P347238

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003323	2,4-D	0.495	Spike	P	0 - 30
2003323	Acetaminophen	3.25	Spike	P	0 - 30
2003323	Bentazon	2.66	Spike	P	0 - 30
2003323	Carbamazepine	4.22	Spike	P	0 - 30
2003323	Diuron	4.60	Spike	P	0 - 30
2003323	Fenuron	1.74	Spike	P	0 - 30
2003323	Fluridone	2.55	Spike	P	0 - 30
2003323	Hydrocodone	0.333	Spike	P	0 - 30
2003323	Imazapyr	2.32	Spike	P	0 - 30
2003323	Imidacloprid	7.45	Spike	P	0 - 30
2003323	Linuron	11.1	Spike	P	0 - 30
2003323	MCP	2.77	Spike	P	0 - 30
2003323	Primidone	5.66	Spike	P	0 - 30
2003323	Pyraclostrobin	5.60	Spike	P	0 - 30
2003323	Triclopyr	11.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002654	Sucralose	2.16	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: 2002844
Field Sample ID: AD78487

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	70.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.8	P	30 - 160
EPA 8321B	Diuron-d6	48.0	P	30 - 160
EPA 8321B	Primidone-d5	64.9	P	30 - 160
EPA 8321B	Sucralose-d6	78.6	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A84826
 Included Lab Sample IDs: 2002844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	70.3	105	P/P	60 - 160

Reference Method: EPA 8321B
 Run ID: A84988
 Included Lab Sample IDs: 2002844

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	121	108	P/P	50 - 150
Acetaminophen	119	103	P/P	60 - 160
Bentazon	141	142	P/P	50 - 150
Carbamazepine	111	99.4	P/P	60 - 160
Diuron	111	98.1	P/P	60 - 150
Fenuron	105	96.6	P/P	60 - 150
Fluridone	106	100	P/P	60 - 160
Hydrocodone	106	97.7	P/P	60 - 150
Imazapyr	92.8	89.1	P/P	50 - 150
Imidacloprid	93.3	96.7	P/P	60 - 150
Linuron	95.8	80.8	P/P	60 - 150
MCPP	124	116	P/P	50 - 150
Primidone	96.8	86.5	P/P	60 - 150
Pyraclostrobin	107	97.6	P/P	60 - 150
Triclopyr	113	117	P/P	50 - 160

* 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	MS		
EPA 8321B	2,4-D	104	109	108		0.495
	Acetaminophen	108	82.9	80.3		3.25
	Bentazon	111	39.3	40.8		2.66
	Carbamazepine	92.3	65.7	62.4		4.22
	Diuron	85.7	62.2	59.4		4.60
	Fenuron	106	71.6	70.3		1.74
	Fluridone	89.0	77.6	79.7		2.55
	Hydrocodone	101	80.8	80.5		0.333
	Imazapyr	90.5	113	99.3		2.32
	Imidacloprid	97.2	141	129		7.45
	Linuron	63.6	51.2	57.2		11.1
	MCPP	118	128	132		2.77
	Primidone	91.4	74.8	79.5		5.66
	Pyraclostrobin	87.4	82.2	77.7		5.60
	Sucralose	71.0	44.2	45.2		2.16
	Triclopyr	113	117	132		11.9

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2002844

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/22/2018	06/25/2018 09:15	Mohammad Ghaffari	06/26/2018 03:02	Mohammad Ghaffari	2002844
	06/22/2018	06/27/2018 08:30	Hoor Shaik	07/02/2018 16:15	Juyoung Kim	2002844
	06/22/2018	06/27/2018 08:30	Hoor Shaik	07/03/2018 03:47	Juyoung Kim	2002844