

Chemical Analysis Report

SO-DIST-2018-02-14-01

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-2018-02-05-51**
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: Maryann Dugan

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-FEB-2018 16:22



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: OWL CREEK @ SR78; UPSTREAM SIDE

Collection Date/Time: 02/13/2018 11:10

Field ID: AD66567

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1967545	EPA 8321B	2,4-D	0.0020	U	ug/L	P339934	
		Sucralose**	0.091		ug/L	P340020	
		Bentazon	8.0E-04	U	ug/L	P339934	
		MCP	0.0020	U	ug/L	P339934	
		Triclopyr**	0.0040	U	ug/L	P339934	
		Imidacloprid	0.0020	U	ug/L	P339934	MS
		Diuron	0.0020	U	ug/L	P339934	
		Primidone**	0.0040	U	ug/L	P339934	
		Linuron	0.0040	U	ug/L	P339934	
		Acetaminophen**	0.0080	U	ug/L	P339934	
		Fenuron	0.0080	U	ug/L	P339934	
		Carbamazepine**	4.0E-04	U	ug/L	P339934	
		Fluridone**	0.0013	I	ug/L	P339934	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P339934

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

Reference Method: EPA 8321B

Batch ID: P340020

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P339934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.9		P	40 - 150
Acetaminophen	105		P	30 - 150
Bentazon	90.9		P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P339934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbamazepine	77.0		P	40 - 150
Diuron	83.4		P	40 - 150
Fenuron	107		P	40 - 150
Fluridone	86.1		P	40 - 150
Imidacloprid	95.3		P	40 - 160
Linuron	84.5		P	40 - 150
MCPP	76.4		P	40 - 150
Primidone	128		P	40 - 150
Triclopyr	72.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340020

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	93.5		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P339934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967518	2,4-D	63.5	52.3	P/P	40 - 150
1967518	Acetaminophen	140	121	P/P	30 - 150
1967518	Bentazon	58.7	45.3	P/P	30 - 150
1967518	Carbamazepine	77.6	71.5	P/P	40 - 150
1967518	Diuron	71.9	65.5	P/P	40 - 150
1967518	Fenuron	92.4	86.6	P/P	40 - 150
1967518	Fluridone	59.7	64.7	P/P	40 - 150
1967518	Imidacloprid	221	200	F/F	40 - 160
1967518	Linuron	89.9	82.3	P/P	40 - 150
1967518	MCPP	64.9	54.8	P/P	40 - 150
1967518	Primidone	122	93.6	P/P	40 - 150
1967518	Triclopyr	59.2	61.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P340020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1967545	Sucralose	124	125	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967518	2,4-D	19.3	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P339934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967518	Acetaminophen	14.5	Spike	P	0 - 30
1967518	Bentazon	24.7	Spike	P	0 - 30
1967518	Carbamazepine	7.81	Spike	P	0 - 30
1967518	Diuron	9.30	Spike	P	0 - 30
1967518	Fenuron	6.47	Spike	P	0 - 30
1967518	Fluridone	8.07	Spike	P	0 - 30
1967518	Imidacloprid	10.1	Spike	P	0 - 30
1967518	Linuron	8.84	Spike	P	0 - 30
1967518	MCP	16.9	Spike	P	0 - 30
1967518	Primidone	16.9	Spike	P	0 - 30
1967518	Triclopyr	3.57	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P340020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1967545	Sucralose	0.858	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: 1967545
Field Sample ID: AD66567

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	59.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	138	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.6	P	30 - 160
EPA 8321B	Diuron-d6	88.3	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	132	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A82167
Included Lab Sample IDs: 1967545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	87.9	91.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A82205
Included Lab Sample IDs: 1967545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	101	P/P	50 - 150
Acetaminophen	119	118	P/P	60 - 150
Bentazon	124	129	P/P	50 - 150
Carbamazepine	98.7	104	P/P	60 - 150
Diuron	140	137	P/P	60 - 150
Fenuron	117	120	P/P	60 - 150
Fluridone	113	115	P/P	60 - 160
Imidacloprid	111	119	P/P	60 - 150
Linuron	127	122	P/P	60 - 150
MCP	110	110	P/P	50 - 150
Primidone	131	131	P/P	60 - 150
Triclopyr	111	111	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	MS
						SMP	
EPA 8321B	2,4-D	67.9	63.5	52.3			19.3
	Acetaminophen	105	140	121			14.5
	Bentazon	90.9	58.7	45.3			24.7
	Carbamazepine	77.0	77.6	71.5			7.81
	Diuron	83.4	71.9	65.5			9.30
	Fenuron	107	92.4	86.6			6.47
	Fluridone	86.1	59.7	64.7			8.07
	Imidacloprid	95.3	221	200			10.1
	Linuron	84.5	89.9	82.3			8.84
	MCP	76.4	64.9	54.8			16.9
	Primidone	128	122	93.6			16.9
	Sucralose	93.5	124	125			0.858
	Triclopyr	72.4	59.2	61.4			3.57

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1967545
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1967545

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/14/2018	02/15/2018	Hoor Shaik	02/17/2018	Julie Michelle Frank	1967545
	02/14/2018	02/15/2018	Hoor Shaik	02/18/2018	Julie Michelle Frank	1967545
	02/14/2018	02/15/2018	Juyoung Kim	02/17/2018	Juyoung Kim	1967545