Chemical Analysis Report

TLH-ROC-2017-11-15-04

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

Event Description:	**SMP 2017 kit_b/t/m PCR-FILTER / PCR-HF183 / (811 Ocklawaha Creek)**
Request ID:	**RQ-2017-10-30-56**
Customer:	**TLH-ROC**
Project ID:	**SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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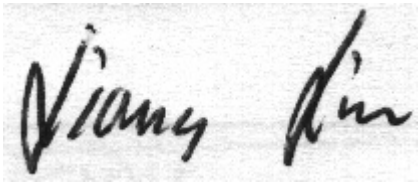
Certified by: Liang Lin, Environmental Administrator

Date Certified: 04-DEC-2017 17:27



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: WOODS CREEK @ OSTEEN RD. **Collection Date/Time: 11/15/2017 09:35**

Field ID: G1TLHR0067-2017-10 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1946636	EPA 8321B	Sucralose**	0.017	I	ug/L	P335617	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P335331	
		Diuron	8.0E-04	U	ug/L	P335331	MS
		Fenuron	0.0080	U	ug/L	P335331	
		Imidacloprid	8.0E-04	U	ug/L	P335331	
		Bentazon	8.0E-04	U	ug/L	P335331	
		Linuron	0.0040	U	ug/L	P335331	
		Acetaminophen**	0.0080	U	ug/L	P335331	
		MCPP	0.0020	U	ug/L	P335331	MS
		Carbamazepine**	4.0E-04	U	ug/L	P335331	
		Triclopyr**	0.0040	U	ug/L	P335331	MS
		Primidone**	0.0040	U	ug/L	P335331	
		Fluridone**	4.0E-04	U	ug/L	P335331	

Ref. Method and Comment:
USGS O-2060-01: Fenuron was detected in the method blank slightly above the MDL.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P335617

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P335331

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	8.0E-04	U	ug/L
Fenuron	0.023	I	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	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: P335617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	118		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P335331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	67.8	71.5	P/P	40 - 150
Acetaminophen	112	115	P/P	30 - 150
Bentazon	61.6	62.1	P/P	30 - 150
Carbamazepine	129	130	P/P	40 - 150
Diuron	105	104	P/P	40 - 150
Fenuron	115	119	P/P	40 - 150
Fluridone	129	133	P/P	40 - 150
Imidacloprid	101	106	P/P	40 - 160
Linuron	101	108	P/P	40 - 150
MCPP	71.6	76.1	P/P	40 - 150
Primidone	102	97.6	P/P	40 - 150
Triclopyr	72.4	79.7	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P335617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946711	Sucralose	110	113	P/P	40 - 150

Reference Method: USGS O-2060-01
Batch ID: P335331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1946407	2,4-D	52.7	52.8	P/P	40 - 150
1946407	Acetaminophen	54.3	50.8	P/P	30 - 150
1946407	Bentazon	39.8	34.5	P/P	30 - 150
1946407	Carbamazepine	40.3	40.0	P/P	40 - 150
1946407	Diuron	33.9	34.2	F/F	40 - 150
1946407	Fenuron	48.4	45.8	P/P	40 - 150
1946407	Fluridone	43.7	44.1	P/P	40 - 150
1946407	Imidacloprid	105	105	P/P	40 - 160
1946407	Linuron	49.0	49.4	P/P	40 - 150
1946407	MCPP	39.5	35.1	F/F	40 - 150
1946407	Primidone	47.9	52.9	P/P	40 - 150
1946407	Triclopyr	35.4	30.0	F/F	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P335617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946711	Sucralose	2.17	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: USGS O-2060-01
Batch ID: P335331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1946407	2,4-D	0.227	Spike	P	0 - 30
1946407	Acetaminophen	6.63	Spike	P	0 - 30
1946407	Bentazon	9.69	Spike	P	0 - 30
1946407	Carbamazepine	0.523	Spike	P	0 - 30
1946407	Diuron	0.910	Spike	P	0 - 30
1946407	Fenuron	5.69	Spike	P	0 - 30
1946407	Fluridone	0.645	Spike	P	0 - 30
1946407	Imidacloprid	0.0	Spike	P	0 - 30
1946407	Linuron	0.792	Spike	P	0 - 30
1946407	MCPP	11.7	Spike	P	0 - 30
1946407	Primidone	8.57	Spike	P	0 - 30
1946407	Triclopyr	16.4	Spike	P	0 - 30
LFB	2,4-D	5.28	LCS	P	0 - 30
LFB	Acetaminophen	3.13	LCS	P	0 - 30
LFB	Bentazon	0.816	LCS	P	0 - 30
LFB	Carbamazepine	0.134	LCS	P	0 - 30
LFB	Diuron	0.649	LCS	P	0 - 30
LFB	Fenuron	3.21	LCS	P	0 - 30
LFB	Fluridone	2.70	LCS	P	0 - 30
LFB	Imidacloprid	4.81	LCS	P	0 - 30
LFB	Linuron	6.36	LCS	P	0 - 30
LFB	MCPP	6.00	LCS	P	0 - 30
LFB	Primidone	3.98	LCS	P	0 - 30
LFB	Triclopyr	9.60	LCS	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: 1946636
Field Sample ID: G1TLHR0067-2017-10

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	73.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	89.9	P	30 - 160
EPA 8321B	Diuron-d6	68.3	P	30 - 160
EPA 8321B	Primidone-d5	69.0	P	30 - 160
EPA 8321B	Sucralose-d6	89.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	45.9	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	73.1	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	89.9	P	30 - 160
USGS O-2060-01	Diuron-d6	68.3	P	30 - 160
USGS O-2060-01	Primidone-d5	69.0	P	30 - 160
USGS O-2060-01	Sucralose-d6	89.6	P	40 - 160

Quality Assurance Report
Calibration Verification

Quality Assurance Report
Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A80485
Included Lab Sample IDs: 1946636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.1	83.1	P/P	50 - 150
Acetaminophen	91.8	77.0	P/P	60 - 150
Bentazon	114	115	P/P	50 - 150
Carbamazepine	102	92.1	P/P	60 - 150
Diuron	93.0	87.5	P/P	60 - 150
Fenuron	82.6	75.6	P/P	60 - 150
Fluridone	112	96.0	P/P	60 - 160
Imidacloprid	83.8	74.2	P/P	60 - 150
Linuron	100	82.3	P/P	60 - 150
MCPP	97.8	89.5	P/P	50 - 150
Primidone	88.4	81.5	P/P	60 - 150
Triclopyr	95.6	91.9	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A80568
Included Lab Sample IDs: 1946636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	107	100	P/P	60 - 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		
						LCS	SMP	MS
EPA 8321B	Sucralose	118		110	113			2.17
USGS O-2060-01	2,4-D	67.8	71.5	52.7	52.8	5.28		0.227
	Acetaminophen	112	115	54.3	50.8	3.13		6.63
	Bentazon	61.6	62.1	39.8	34.5	0.816		9.69
	Carbamazepine	129	130	40.3	40.0	0.134		0.523
	Diuron	105	104	33.9	34.2	0.649		0.910
	Fenuron	115	119	48.4	45.8	3.21		5.69
	Fluridone	129	133	43.7	44.1	2.70		0.645
	Imidacloprid	101	106	105	105	4.81		0.0
	Linuron	101	108	49.0	49.4	6.36		0.792
	MCPP	71.6	76.1	39.5	35.1	6.00		11.7
	Primidone	102	97.6	47.9	52.9	3.98		8.57
	Triclopyr	72.4	79.7	35.4	30.0	9.60		16.4

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1946636
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1946636
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1946636

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	11/15/2017	11/22/2017	Mohammad Ghaffari	11/29/2017	Mohammad Ghaffari	1946636
USGS O-2060-01	11/15/2017	11/17/2017	Hoor Shaik	11/21/2017	Mohammad Ghaffari	1946636