

Chemical Analysis Report

WQAP-2017-10-25-03

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

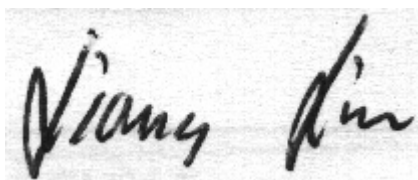
Event Description: **SMP 2017 kit_b/t/m PCR-FILTER/ GFD/BACR (977_Moore Branch)**
Request ID: **RQ-2017-09-25-28**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3560
Tallahassee, FL 32399-2400
Attn: Michael Eckles

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-NOV-2017 11:36

A handwritten signature in black ink, appearing to read "Liang Lin", is shown 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: Moore Branch @ Cody Church Rd

Collection Date/Time: 10/25/2017 10:00

Field ID: G1TLHR0041-2017-07

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1940027	EPA 8321B	Sucralose**	0.010	U	ug/L	P334158	
	USGS O-2060-01	2,4-D	0.0020	UQ	ug/L	P335526	
		Diuron	8.0E-04	U	ug/L	P334217	
		Fenuron	0.0080	U	ug/L	P334217	
		Imidacloprid	8.0E-04	U	ug/L	P334217	MS
		Bentazon	8.0E-04	UQ	ug/L	P335526	
		Linuron	0.0040	U	ug/L	P334217	
		Acetaminophen**	0.0080	UJ	ug/L	P334217	LCS
		MCP	0.0020	UQ	ug/L	P335526	
		Carbamazepine**	4.0E-04	U	ug/L	P334217	MS
		Triclopyr**	0.0040	UQ	ug/L	P335526	
		Primidone**	0.0040	U	ug/L	P334217	
		Fluridone**	4.0E-04	U	ug/L	P334217	

Ref. Method and Comment:

USGS O-2060-01: Sample required re-extraction beyond normal holding time due to reagent performance inconsistencies.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P334158

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P334217

Component	Result	Code	Units
Acetaminophen	0.0080	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
Primidone	0.0040	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P335526

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
MCP	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P334158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	85.0		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P334217

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetaminophen	151		F	30 - 150
Carbamazepine	143		P	40 - 150
Diuron	112		P	40 - 150
Fenuron	117		P	40 - 150
Fluridone	117		P	40 - 150
Imidacloprid	114		P	40 - 160
Linuron	116		P	40 - 150
Primidone	110		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
Bentazon	91.1		P	30 - 150
MCPP	91.5		P	40 - 150
Triclopyr	94.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P334158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939692	Sucralose	64.6	64.6	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P334217

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940229	Acetaminophen	97.1	103	P/P	30 - 150
1940229	Carbamazepine	136	154	P/F	40 - 150
1940229	Diuron	90.8	107	P/P	40 - 150
1940229	Fenuron	102	115	P/P	40 - 150
1940229	Fluridone	104	98.0	P/P	40 - 150
1940229	Imidacloprid	217	250	F/F	40 - 160
1940229	Linuron	108	118	P/P	40 - 150
1940229	Primidone	108	129	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P335526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940027	2,4-D	85.4	83.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P335526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1940027	Bentazon	87.2	86.7	P/P	30 - 150
1940027	MCP	71.8	66.5	P/P	40 - 150
1940027	Triclopyr	69.0	65.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P334158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939692	Sucralose	0.0	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P334217

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940229	Acetaminophen	6.23	Spike	P	0 - 30
1940229	Carbamazepine	13.1	Spike	P	0 - 30
1940229	Diuron	16.3	Spike	P	0 - 30
1940229	Fenuron	11.6	Spike	P	0 - 30
1940229	Fluridone	4.88	Spike	P	0 - 30
1940229	Imidacloprid	14.5	Spike	P	0 - 30
1940229	Linuron	8.92	Spike	P	0 - 30
1940229	Primidone	17.6	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P335526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1940027	2,4-D	2.07	Spike	P	0 - 30
1940027	Bentazon	0.633	Spike	P	0 - 30
1940027	MCP	7.60	Spike	P	0 - 30
1940027	Triclopyr	4.66	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: 1940027
 Field Sample ID: G1TLHR0041-2017-07

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	87.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	136	P	30 - 160
EPA 8321B	Diuron-d6	99.5	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1940027

Field Sample ID: G1TLHR0041-2017-07

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	40 - 160
USGS O-2060-01	2,4-D-d3	83.6	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	87.6	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	136	P	30 - 160
USGS O-2060-01	Diuron-d6	99.5	P	30 - 160
USGS O-2060-01	Primidone-d5	104	P	30 - 160
USGS O-2060-01	Sucralose-d6	102	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A79945

Included Lab Sample IDs: 1940027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	98.6	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A80386

Included Lab Sample IDs: 1940027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	104	99.8	P/P	50 - 150
Bentazon	119	121	P/P	50 - 150
MCP	107	106	P/P	50 - 150
Triclopyr	101	107	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A80401

Included Lab Sample IDs: 1940027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	127	124	P/P	60 - 150
Carbamazepine	135	132	P/P	60 - 150
Diuron	115	115	P/P	60 - 150
Fenuron	115	114	P/P	60 - 150
Fluridone	125	127	P/P	60 - 160
Imidacloprid	114	115	P/P	60 - 150
Linuron	125	128	P/P	60 - 150
Primidone	116	121	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	85.0	64.6	64.6			0.0
USGS O-2060-01	2,4-D	102	85.4	83.6			2.07
	Acetaminophen	151	97.1	103			6.23
	Bentazon	91.1	87.2	86.7			0.633
	Carbamazepine	143	136	154			13.1
	Diuron	112	90.8	107			16.3
	Fenuron	117	102	115			11.6
	Fluridone	117	104	98.0			4.88
	Imidacloprid	114	217	250			14.5
	Linuron	116	108	118			8.92
	MCP	91.5	71.8	66.5			7.60
	Primidone	110	108	129			17.6
	Triclopyr	94.8	69.0	65.9			4.66

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1940027
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1940027
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1940027

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/25/2017	10/30/2017	Juyoung Kim	10/30/2017	Juyoung Kim	1940027
USGS O-2060-01	10/25/2017	10/31/2017	Hoor Shaik	11/03/2017	Julie Michelle Frank	1940027
	10/25/2017	11/16/2017	Hoor Shaik	11/20/2017	Julie Michelle Frank	1940027