

Chemical Analysis Report

WQAP-2017-07-26-04

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

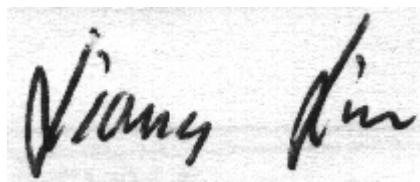
Event Description: **B/T/M only**
Request ID: **RQ-2017-04-17-32**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 14-AUG-2017 12:32

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: MT SANAI SLOUGH @ WEEPING WILLOW WAY

Collection Date/Time: 07/26/2017 12:30

Field ID: G1TLHR0076-2017-04

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1916660	EPA 8321B	Sucralose**	0.11		ug/L	P329067	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P329107	MS
		Diuron	8.0E-04	U	ug/L	P329107	
		Fenuron	0.0080	U	ug/L	P329107	
		Imidacloprid	0.0014	I	ug/L	P329107	
		Bentazon	8.0E-04	U	ug/L	P329107	MS
		Linuron	0.0040	U	ug/L	P329107	
		Acetaminophen**	0.0080	U	ug/L	P329107	
		MCP	0.0020	U	ug/L	P329107	
		Carbamazepine**	4.0E-04	U	ug/L	P329107	
		Triclopyr**	0.0040	U	ug/L	P329107	
		Primidone**	0.0040	U	ug/L	P329107	
		Fluridone**	4.0E-04	U	ug/L	P329107	MS, RPD

Ref. Method and Comment:

EPA 8321B: MS accuracy for sucralose could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P329067

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P329107

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	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	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: P329067

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	61.6		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P329107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
Acetaminophen	91.9		P	30 - 150
Bentazon	107		P	40 - 150
Carbamazepine	96.7		P	40 - 150
Diuron	116		P	40 - 150
Fenuron	112		P	40 - 150
Fluridone	94.1		P	40 - 150
Imidacloprid	102		P	40 - 160
Linuron	97.0		P	40 - 150
MCP	94.4		P	40 - 150
Primidone	116		P	40 - 150
Triclopyr	94.4		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P329107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1916003	2,4-D	150	148	F/P	40 - 150
1916003	Acetaminophen	95.9	124	P/P	30 - 150
1916003	Bentazon	38.5	32.7	F/F	40 - 150
1916003	Carbamazepine	104	97.1	P/P	40 - 150
1916003	Diuron	68.4	74.7	P/P	40 - 150
1916003	Fenuron	69.8	72.5	P/P	40 - 150
1916003	Fluridone	37.7	60.2	F/P	40 - 150
1916003	Imidacloprid	107	135	P/P	40 - 160
1916003	Linuron	70.9	81.7	P/P	40 - 150
1916003	MCP	123	127	P/P	40 - 150
1916003	Primidone	103	112	P/P	40 - 150
1916003	Triclopyr	108	128	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P329067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916053	Sucralose	8.70	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P329107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916003	2,4-D	0.772	Spike	P	0 - 30
1916003	Acetaminophen	19.0	Spike	P	0 - 30
1916003	Bentazon	7.55	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P329107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1916003	Carbamazepine	6.79	Spike	P	0 - 30
1916003	Diuron	8.46	Spike	P	0 - 30
1916003	Fenuron	3.82	Spike	P	0 - 30
1916003	Fluridone	41.3	Spike	F	0 - 30
1916003	Imidacloprid	7.60	Spike	P	0 - 30
1916003	Linuron	14.2	Spike	P	0 - 30
1916003	MCPP	3.20	Spike	P	0 - 30
1916003	Primidone	8.76	Spike	P	0 - 30
1916003	Triclopyr	17.3	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: 1916660
Field Sample ID: G1TLHR0076-2017-04

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	75.6	P	40 - 160
USGS O-2060-01	2,4-D-d3	97.0	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	113	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	104	P	30 - 160
USGS O-2060-01	Diuron-d6	85.9	P	30 - 160
USGS O-2060-01	Primidone-d5	85.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A78247
Included Lab Sample IDs: 1916660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	67.8	85.9	P/P	60 - 160

Reference Method: USGS O-2060-01
Run ID: A78250
Included Lab Sample IDs: 1916660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	73.4	73.7	P/P	50 - 150
Acetaminophen	87.8	93.7	P/P	60 - 150
Bentazon	122	106	P/P	50 - 150
Carbamazepine	89.6	88.2	P/P	60 - 150
Diuron	93.4	96.9	P/P	60 - 150
Fenuron	96.3	103	P/P	60 - 150
Fluridone	104	89.3	P/P	60 - 160
Imidacloprid	83.4	95.1	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A78250

Included Lab Sample IDs: 1916660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	88.7	98.1	P/P	60 - 150
MCP	82.7	78.0	P/P	50 - 150
Primidone	97.2	94.2	P/P	60 - 150
Triclopyr	84.2	72.9	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	Sucralose	61.6				8.70
USGS O-2060-01	2,4-D	105	150 148			0.772
	Acetaminophen	91.9	95.9 124			19.0
	Bentazon	107	38.5 32.7			7.55
	Carbamazepine	96.7	104 97.1			6.79
	Diuron	116	68.4 74.7			8.46
	Fenuron	112	69.8 72.5			3.82
	Fluridone	94.1	37.7 60.2			41.3
	Imidacloprid	102	107 135			7.60
	Linuron	97.0	70.9 81.7			14.2
	MCP	94.4	123 127			3.20
	Primidone	116	103 112			8.76
	Triclopyr	94.4	108 128			17.3

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1916660
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1916660
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1916660

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/26/2017	07/27/2017	Julie Michelle Frank	08/04/2017	Mohammad Ghaffari	1916660
USGS O-2060-01	07/26/2017	07/28/2017	Hoor Shaik	08/02/2017	Juyoung Kim	1916660