

Chemical Analysis Report

WQAP-2017-09-07-02

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

Event Description: **Simms Branch**
Request ID: **RQ-2017-09-04-31**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Tampa, FL 33637
Attn: Judy Ashton

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Certified by: Colin Wright, Program Administrator

Date Certified: 28-SEP-2017 12:41

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned on a light gray rectangular 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: Sims Branch

Collection Date/Time: 09/06/2017 10:15

Field ID: G1SW0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1928598	EPA 8321B	Sucralose**	13		ug/L	P331348	
	USGS O-2060-01	2,4-D	0.015		ug/L	P331347	
		Diuron	0.015		ug/L	P331347	
		Fenuron	0.0080	U	ug/L	P331347	
		Imidacloprid	0.037		ug/L	P331347	MS
		Bentazon	0.0088		ug/L	P331347	
		Linuron	0.0040	U	ug/L	P331347	
		Acetaminophen**	0.0080	U	ug/L	P331347	
		MCP	0.016		ug/L	P331347	
		Carbamazepine**	0.059	J	ug/L	P331347	SUR
		Triclopyr**	0.0040	U	ug/L	P331347	
		Primidone**	0.11	J	ug/L	P331347	SUR
		Fluridone**	0.0039		ug/L	P331347	

Ref. Method and Comment:

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes. Carbamazepine-d10 and primidone-d5 surrogate spike recovery exceeding the control limits. Results confirmed.

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P331348

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P331347

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: P331348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	44.1		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P331347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.6		P	40 - 150
Acetaminophen	130		P	30 - 150
Bentazon	105		P	40 - 150
Carbamazepine	109		P	40 - 150
Diuron	113		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	122		P	40 - 150
Imidacloprid	97.0		P	40 - 160
Linuron	101		P	40 - 150
MCP	78.3		P	40 - 150
Primidone	105		P	40 - 150
Triclopyr	92.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P331348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927987	Sucralose	62.4	55.8	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P331347

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1927989	2,4-D	123	122	P/P	40 - 150
1927989	Acetaminophen	134	132	P/P	30 - 150
1927989	Bentazon	59.3	43.3	P/P	40 - 150
1927989	Carbamazepine	106	102	P/P	40 - 150
1927989	Diuron	81.6	76.0	P/P	40 - 150
1927989	Fenuron	75.2	72.7	P/P	40 - 150
1927989	Fluridone	79.3	81.3	P/P	40 - 150
1927989	Imidacloprid	222	215	F/F	40 - 160
1927989	Linuron	83.4	91.3	P/P	40 - 150
1927989	MCP	117	118	P/P	40 - 150
1927989	Primidone	99.3	97.6	P/P	40 - 150
1927989	Triclopyr	108	101	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P331348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927987	Sucralose	7.37	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P331347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1927989	2,4-D	0.208	Spike	P	0 - 30
1927989	Acetaminophen	1.19	Spike	P	0 - 30
1927989	Bentazon	9.60	Spike	P	0 - 30
1927989	Carbamazepine	3.80	Spike	P	0 - 30
1927989	Diuron	7.21	Spike	P	0 - 30
1927989	Fenuron	3.49	Spike	P	0 - 30
1927989	Fluridone	2.52	Spike	P	0 - 30
1927989	Imidacloprid	3.26	Spike	P	0 - 30
1927989	Linuron	9.09	Spike	P	0 - 30
1927989	MCP	0.649	Spike	P	0 - 30
1927989	Primidone	1.81	Spike	P	0 - 30
1927989	Triclopyr	7.05	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: 1928598
Field Sample ID: G1SW0056

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	112	P	30 - 160
EPA 8321B	Carbamazepine-d10	186	F	30 - 160
EPA 8321B	Diuron-d6	143	P	30 - 160
EPA 8321B	Primidone-d5	177	F	30 - 160
EPA 8321B	Sucralose-d6	116	P	40 - 160
USGS O-2060-01	2,4-D-d3	100	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	112	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	186	F	30 - 160
USGS O-2060-01	Diuron-d6	143	P	30 - 160
USGS O-2060-01	Primidone-d5	177	F	30 - 160
USGS O-2060-01	Sucralose-d6	116	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A78939
Included Lab Sample IDs: 1928598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	104	119	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A79060
Included Lab Sample IDs: 1928598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A79060
Included Lab Sample IDs: 1928598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.7	98.1	P/P	50 - 150
Acetaminophen	104	102	P/P	60 - 150
Bentazon	97.4	102	P/P	50 - 150
Carbamazepine	119	122	P/P	60 - 150
Diuron	97.9	102	P/P	60 - 150
Fenuron	102	102	P/P	60 - 150
Fluridone	104	106	P/P	60 - 160
Imidacloprid	91.8	99.1	P/P	60 - 150
Linuron	97.4	100	P/P	60 - 150
MCP	98.5	96.9	P/P	50 - 150
Primidone	94.9	98.6	P/P	60 - 150
Triclopyr	105	100	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	44.1	62.4 55.8			7.37
USGS O-2060-01	2,4-D	89.6	123 122			0.208
	Acetaminophen	130	134 132			1.19
	Bentazon	105	59.3 43.3			9.60
	Carbamazepine	109	106 102			3.80
	Diuron	113	81.6 76.0			7.21
	Fenuron	111	75.2 72.7			3.49
	Fluridone	122	79.3 81.3			2.52
	Imidacloprid	97.0	222 215			3.26
	Linuron	101	83.4 91.3			9.09
	MCP	78.3	117 118			0.649
	Primidone	105	99.3 97.6			1.81
	Triclopyr	92.1	108 101			7.05

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1928598
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1928598
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1928598

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/07/2017	09/07/2017	Hoor Shaik	09/15/2017	Julie Michelle Frank	1928598
USGS O-2060-01	09/07/2017	09/07/2017	Hoor Shaik	09/20/2017	Julie Michelle Frank	1928598