

Chemical Analysis Report

WQAP-2017-06-15-06

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-2017-05-22-41**
Customer: **WQAP**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
MS #3525
Tallahassee, FL 32399-2400
Attn: Michael Eckles

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 11-JUL-2017 16:12

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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: POLK CREEK

Collection Date/Time: 06/15/2017 13:55

Field ID: G1TLHR0055-2017-02

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1906735	EPA 8321B	Sucralose**	0.010	U	ug/L	P327044	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326835	
		Diuron	8.0E-04	U	ug/L	P326835	
		Fenuron	0.0080	U	ug/L	P326835	
		Imidacloprid	8.0E-04	U	ug/L	P326835	MS
		Bentazon	8.0E-04	U	ug/L	P326835	MS
		Linuron	0.0040	U	ug/L	P326835	
		Acetaminophen**	0.0080	U	ug/L	P326835	
		MCP	0.0020	U	ug/L	P326835	
		Carbamazepine**	4.0E-04	U	ug/L	P326835	
		Triclopyr**	0.0040	U	ug/L	P326835	
		Primidone**	0.0040	U	ug/L	P326835	
		Fluridone**	4.0E-04	U	ug/L	P326835	

Sample Location: HARVEY CREEK @ HWY 20

Collection Date/Time: 06/15/2017 14:15

Field ID: G1TLHR0058-2017-03

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1906736	EPA 8321B	Sucralose**	0.010	U	ug/L	P327044	
	USGS O-2060-01	2,4-D	8.0E-04	U	ug/L	P326835	
		Diuron	8.0E-04	U	ug/L	P326835	
		Fenuron	0.0080	U	ug/L	P326835	
		Imidacloprid	8.0E-04	U	ug/L	P326835	MS
		Bentazon	8.0E-04	U	ug/L	P326835	MS
		Linuron	0.0040	U	ug/L	P326835	
		Acetaminophen**	0.0080	U	ug/L	P326835	
		MCP	0.0020	U	ug/L	P326835	
		Carbamazepine**	4.0E-04	U	ug/L	P326835	
		Triclopyr**	0.0040	U	ug/L	P326835	
		Primidone**	0.0040	U	ug/L	P326835	
		Fluridone**	4.0E-04	U	ug/L	P326835	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P327044

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
Batch ID: P326835

Component	Result	Code	Units
2,4-D	8.0E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: USGS O-2060-01
 Batch ID: P326835

Component	Result	Code	Units
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
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: P327044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	89.5		P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P326835

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	70.8		P	40 - 150
Acetaminophen	30.4		P	30 - 150
Bentazon	62.4		P	40 - 150
Carbamazepine	115		P	40 - 150
Diuron	112		P	40 - 150
Fenuron	116		P	40 - 150
Fluridone	101		P	40 - 150
Imidacloprid	100		P	40 - 160
Linuron	107		P	40 - 150
MCPP	84.2		P	40 - 150
Primidone	115		P	40 - 150
Triclopyr	87.8		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P327044

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906947	Sucralose	111	93.6	P/P	40 - 150

Reference Method: USGS O-2060-01
 Batch ID: P326835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906079	2,4-D	73.2	72.2	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P326835

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1906079	Acetaminophen	119	115	P/P	40 - 150
1906079	Bentazon	30.0	31.2	F/F	40 - 150
1906079	Carbamazepine	92.0	96.8	P/P	40 - 150
1906079	Diuron	75.2	80.2	P/P	40 - 150
1906079	Fenuron	76.4	82.2	P/P	40 - 150
1906079	Fluridone	58.0	59.6	P/P	40 - 150
1906079	Imidacloprid	157	161	P/F	40 - 160
1906079	Linuron	110	101	P/P	40 - 150
1906079	MCP	59.6	61.4	P/P	40 - 150
1906079	Primidone	88.8	88.0	P/P	40 - 150
1906079	Triclopyr	69.4	64.4	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P327044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1906947	Sucralose	16.7	Spike	P	0 - 30

Reference Method: USGS O-2060-01
Batch ID: P326835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1906079	2,4-D	1.38	Spike	P	0 - 30
1906079	Acetaminophen	3.43	Spike	P	0 - 30
1906079	Bentazon	2.70	Spike	P	0 - 30
1906079	Carbamazepine	5.08	Spike	P	0 - 30
1906079	Diuron	6.44	Spike	P	0 - 30
1906079	Fenuron	7.31	Spike	P	0 - 30
1906079	Fluridone	2.72	Spike	P	0 - 30
1906079	Imidacloprid	2.77	Spike	P	0 - 30
1906079	Linuron	8.71	Spike	P	0 - 30
1906079	MCP	2.98	Spike	P	0 - 30
1906079	Primidone	0.905	Spike	P	0 - 30
1906079	Triclopyr	7.47	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: 1906735
Field Sample ID: G1TLHR0055-2017-02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	140	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1906735

Field Sample ID: G1TLHR0055-2017-02

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	2,4-D-d3	79.7	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	105	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	102	P	30 - 160
USGS O-2060-01	Diuron-d6	79.1	P	30 - 160
USGS O-2060-01	Primidone-d5	84.9	P	30 - 150

Lab Sample ID: 1906736

Field Sample ID: G1TLHR0058-2017-03

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	80.1	P	40 - 160
USGS O-2060-01	2,4-D-d3	71.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	102	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	90.1	P	30 - 160
USGS O-2060-01	Diuron-d6	77.8	P	30 - 160
USGS O-2060-01	Primidone-d5	84.4	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A77276

Included Lab Sample IDs: 1906735, 1906736

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	119	129	P/P	60 - 160
Sucralose	129	116	P/P	60 - 160

Reference Method: USGS O-2060-01

Run ID: A77371

Included Lab Sample IDs: 1906735, 1906736

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.0	86.8	P/P	50 - 150
Acetaminophen	107	107	P/P	60 - 150
Bentazon	88.4	91.2	P/P	50 - 150
Carbamazepine	112	108	P/P	60 - 150
Diuron	111	105	P/P	60 - 150
Fenuron	108	104	P/P	60 - 150
Fluridone	103	99.6	P/P	60 - 160
Imidacloprid	97.2	99.6	P/P	60 - 150
Linuron	101	103	P/P	60 - 150
MCP	88.8	89.2	P/P	50 - 150
Primidone	112	103	P/P	60 - 150
Triclopyr	88.8	90.8	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		Precision	
					LCS	SMP
EPA 8321B	Sucralose	89.5	111	93.6		16.7
USGS O-2060-01	2,4-D	70.8	73.2	72.2		1.38
	Acetaminophen	30.4	119	115		3.43
	Bentazon	62.4	30.0	31.2		2.70
	Carbamazepine	115	92.0	96.8		5.08
	Diuron	112	75.2	80.2		6.44
	Fenuron	116	76.4	82.2		7.31
	Fluridone	101	58.0	59.6		2.72
	Imidacloprid	100	157	161		2.77
	Linuron	107	110	101		8.71
	MCP	84.2	59.6	61.4		2.98
	Primidone	115	88.8	88.0		0.905
	Triclopyr	87.8	69.4	64.4		7.47

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1906735, 1906736
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1906735, 1906736
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1906735, 1906736

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/15/2017	06/19/2017	Mohammad Ghaffari	06/20/2017	Mohammad Ghaffari	1906735, 1906736
USGS O-2060-01	06/15/2017	06/19/2017	Hoor Shaik	06/25/2017	Juyoung Kim	1906735, 1906736