

Chemical Analysis Report

WQAP-2017-06-22-03

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

Event Description: **Run 4**
Request ID: **RQ-2017-06-19-30**
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: 14-JUL-2017 15:30

A handwritten signature in black ink, appearing to read "Colin Wright", is written on a light-colored 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: McKay Creek

Collection Date/Time: 06/21/2017 11:50

Field ID: G5SW0126

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1908271	EPA 8321B	Sucralose**	0.76		ug/L	P327309	
	USGS O-2060-01	2,4-D	0.014		ug/L	P327329	
		Diuron	0.0014	I	ug/L	P327329	
		Fenuron	0.0080	U	ug/L	P327329	RPD
		Imidacloprid	0.017		ug/L	P327329	MS
		Bentazon	0.015		ug/L	P327329	
		Linuron	0.0040	U	ug/L	P327329	
		Acetaminophen**	0.0080	U	ug/L	P327329	
		MCP	0.0037	I	ug/L	P327329	
		Carbamazepine**	0.0013	I	ug/L	P327329	
		Triclopyr**	0.0040	U	ug/L	P327329	
		Primidone**	0.0040	U	ug/L	P327329	RPD
		Fluridone**	0.96		ug/L	P327329	

Ref. Method and Comment:

EPA 8321B: 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: P327309

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01

Batch ID: P327329

Component	Result	Code	Units
2,4-D	8.0E-04	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: P327309

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	83.0		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P327329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	77.0		P	40 - 150
Acetaminophen	71.4		P	30 - 150
Bentazon	96.4		P	40 - 150
Carbamazepine	82.2		P	40 - 150
Diuron	91.6		P	40 - 150
Fenuron	92.2		P	40 - 150
Fluridone	96.2		P	40 - 150
Imidacloprid	74.2		P	40 - 160
Linuron	76.2		P	40 - 150
MCP	71.6		P	40 - 150
Primidone	90.8		P	40 - 150
Triclopyr	74.0		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P327329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1908457	2,4-D	113	87.6	P/P	40 - 150
1908457	Acetaminophen	75.6	92.6	P/P	30 - 150
1908457	Bentazon	93.8	75.6	P/P	40 - 150
1908457	Carbamazepine	114	111	P/P	40 - 150
1908457	Diuron	79.4	79.0	P/P	40 - 150
1908457	Fenuron	110	78.4	P/P	40 - 150
1908457	Fluridone	56.0	53.8	P/P	40 - 150
1908457	Imidacloprid	171	160	F/P	40 - 160
1908457	Linuron	60.8	62.6	P/P	40 - 150
1908457	MCP	78.2	75.0	P/P	40 - 150
1908457	Primidone	102	42.8	P/P	40 - 150
1908457	Triclopyr	89.8	82.0	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P327309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908246	Sucralose	4.67	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P327329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908457	2,4-D	11.4	Spike	P	0 - 30
1908457	Acetaminophen	20.2	Spike	P	0 - 30
1908457	Bentazon	16.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
 Batch ID: P327329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1908457	Carbamazepine	2.49	Spike	P	0 - 30
1908457	Diuron	0.304	Spike	P	0 - 30
1908457	Fenuron	33.2	Spike	F	0 - 30
1908457	Fluridone	2.77	Spike	P	0 - 30
1908457	Imidacloprid	3.72	Spike	P	0 - 30
1908457	Linuron	2.92	Spike	P	0 - 30
1908457	MCPP	3.71	Spike	P	0 - 30
1908457	Primidone	81.9	Spike	F	0 - 30
1908457	Triclopyr	9.08	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: 1908271
 Field Sample ID: G5SW0126

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	89.0	P	40 - 160
USGS O-2060-01	2,4-D-d3	107	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	66.0	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	109	P	30 - 160
USGS O-2060-01	Diuron-d6	68.3	P	30 - 160
USGS O-2060-01	Primidone-d5	78.5	P	30 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A77414
 Included Lab Sample IDs: 1908271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	75.0	104	P/P	60 - 160

Reference Method: USGS O-2060-01
 Run ID: A77687
 Included Lab Sample IDs: 1908271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.0	91.6	P/P	50 - 150
Acetaminophen	84.4	68.8	P/P	60 - 150
Bentazon	111	102	P/P	50 - 150
Carbamazepine	83.2	82.4	P/P	60 - 150
Diuron	110	101	P/P	60 - 150
Fenuron	84.0	76.4	P/P	60 - 150
Fluridone	132	111	P/P	60 - 160
Imidacloprid	87.6	77.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
 Run ID: A77687
 Included Lab Sample IDs: 1908271

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	90.8	79.6	P/P	60 - 150
MCP	72.4	80.4	P/P	50 - 150
Primidone	64.0	64.0	P/P	60 - 150
Triclopyr	79.2	81.6	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	83.0				4.67
USGS O-2060-01	2,4-D	77.0	113 87.6			11.4
	Acetaminophen	71.4	75.6 92.6			20.2
	Bentazon	96.4	93.8 75.6			16.6
	Carbamazepine	82.2	114 111			2.49
	Diuron	91.6	79.4 79.0			0.304
	Fenuron	92.2	110 78.4			33.2
	Fluridone	96.2	56.0 53.8			2.77
	Imidacloprid	74.2	171 160			3.72
	Linuron	76.2	60.8 62.6			2.92
	MCP	71.6	78.2 75.0			3.71
	Primidone	90.8	102 42.8			81.9
	Triclopyr	74.0	89.8 82.0			9.08

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1908271
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1908271
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1908271

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/22/2017	06/28/2017	Mohammad Ghaffari	06/28/2017	Mohammad Ghaffari	1908271
USGS O-2060-01	06/22/2017	06/27/2017	Fe-Val Siddell	07/08/2017	Juyoung Kim	1908271
	06/22/2017	06/27/2017	Fe-Val Siddell	07/09/2017	Juyoung Kim	1908271