

Chemical Analysis Report

WQAP-2017-05-23-02

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

Event Description: **Pinellas LR5**
Request ID: **RQ-2017-05-22-20**
Customer: **WQAP**
Project ID: **SMP**

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

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: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 06-JUN-2017 11:00



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: Joes Creek

Collection Date/Time: 05/22/2017 08:59

Field ID: G5SW0139

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1900679	EPA 8321B	Sucralose**	0.23		ug/L	P325364	
	USGS O-2060-01	2,4-D	0.014		ug/L	P325543	
		Diuron	0.0073		ug/L	P325543	
		Fenuron	0.0040	U	ug/L	P325543	MS
		Imidacloprid	0.14		ug/L	P325543	
		Bentazon	0.0092		ug/L	P325543	MS
		Linuron	0.0040	U	ug/L	P325543	
		Acetaminophen**	0.0080	U	ug/L	P325543	RPD
		MCP	0.0070	I	ug/L	P325543	
		Carbamazepine**	9.6E-04	I	ug/L	P325543	
		Triclopyr**	0.0040	U	ug/L	P325543	
		Primidone**	0.0040	U	ug/L	P325543	
		Fluridone**	8.0E-04	I	ug/L	P325543	

Sample Location: Joes Creek

Collection Date/Time: 05/22/2017 10:03

Field ID: G5SW0138

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1900680	EPA 8321B	Sucralose**	0.086		ug/L	P325364	
	USGS O-2060-01	2,4-D	0.21		ug/L	P325543	
		Diuron	0.038		ug/L	P325543	
		Fenuron	0.0040	U	ug/L	P325543	MS
		Imidacloprid	0.066		ug/L	P325543	
		Bentazon	0.0062		ug/L	P325543	MS
		Linuron	0.0040	U	ug/L	P325543	
		Acetaminophen**	0.0080	U	ug/L	P325543	RPD
		MCP	0.017		ug/L	P325543	
		Carbamazepine**	4.0E-04	U	ug/L	P325543	
		Triclopyr**	0.0040	U	ug/L	P325543	
		Primidone**	0.0040	U	ug/L	P325543	
		Fluridone**	0.0048		ug/L	P325543	

Sample Location: Joes Creek

Collection Date/Time: 05/22/2017 13:47

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1900681	EPA 8321B	Sucralose**	0.14		ug/L	P325364	
	USGS O-2060-01	2,4-D	0.15		ug/L	P325543	
		Diuron	0.026		ug/L	P325543	
		Fenuron	0.0040	U	ug/L	P325543	MS
		Imidacloprid	0.082		ug/L	P325543	
		Bentazon	0.0062		ug/L	P325543	MS
		Linuron	0.0040	U	ug/L	P325543	
		Acetaminophen**	0.0080	U	ug/L	P325543	RPD

Field ID: G5SW0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1900681	USGS O-2060-01	MCP	0.015		ug/L	P325543	
		Carbamazepine**	4.8E-04	I	ug/L	P325543	
		Triclopyr**	0.0040	U	ug/L	P325543	
		Primidone**	0.0040	U	ug/L	P325543	
		Fluridone**	0.063		ug/L	P325543	

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
 Batch ID: P325364

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: USGS O-2060-01
 Batch ID: P325543

Component	Result	Code	Units
2,4-D	8.00E-04	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.00E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0040	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.00200	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.00400	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P325364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	74.4		P	40 - 140

Reference Method: USGS O-2060-01
 Batch ID: P325543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	70.2		P	40 - 140
Acetaminophen	92.6		P	40 - 140
Bentazon	66.0		P	40 - 140
Carbamazepine	85.6		P	40 - 140
Diuron	87.0		P	40 - 140
Fenuron	78.2		P	40 - 140
Fluridone	82.4		P	40 - 140
Imidacloprid	75.4		P	40 - 160
Linuron	76.4		P	40 - 140

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
 Batch ID: P325543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
MCP	83.6		P	40 - 140
Primidone	72.4		P	40 - 140
Triclopyr	76.6		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P325364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899694	Sucralose	84.2	77.1	P/P	40 - 140

Reference Method: USGS O-2060-01
 Batch ID: P325543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1899967	2,4-D	67.8	69.4	P/P	40 - 140
1899967	Acetaminophen	57.4	79.2	P/P	40 - 140
1899967	Bentazon	30.0	28.6	F/F	40 - 140
1899967	Carbamazepine	52.6	55.6	P/P	40 - 140
1899967	Diuron	47.0	40.8	P/P	40 - 140
1899967	Fenuron	40.2	37.8	P/F	40 - 140
1899967	Fluridone	53.4	58.2	P/P	40 - 140
1899967	Imidacloprid	99.4	101	P/P	40 - 160
1899967	Linuron	60.6	67.4	P/P	40 - 140
1899967	MCP	54.0	59.6	P/P	40 - 140
1899967	Primidone	52.8	63.0	P/P	40 - 140
1899967	Triclopyr	60.2	66.8	P/P	40 - 140

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P325364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899694	Sucralose	8.67	Spike	P	0 - 30

Reference Method: USGS O-2060-01
 Batch ID: P325543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899967	2,4-D	2.33	Spike	P	0 - 30
1899967	Acetaminophen	31.9	Spike	F	0 - 30
1899967	Bentazon	4.78	Spike	P	0 - 30
1899967	Carbamazepine	5.55	Spike	P	0 - 30
1899967	Diuron	14.1	Spike	P	0 - 30
1899967	Fenuron	6.15	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P325543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1899967	Fluridone	8.60	Spike	P	0 - 30
1899967	Imidacloprid	1.60	Spike	P	0 - 30
1899967	Linuron	10.6	Spike	P	0 - 30
1899967	MCP	9.86	Spike	P	0 - 30
1899967	Primidone	17.6	Spike	P	0 - 30
1899967	Triclopyr	10.4	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: 1900679
Field Sample ID: G5SW0139

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	92.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	73.0	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	84.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	62.1	P	30 - 160
USGS O-2060-01	Diuron-d6	55.6	P	30 - 150
USGS O-2060-01	Primidone-d5	66.2	P	30 - 150

Lab Sample ID: 1900680
Field Sample ID: G5SW0138

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	85.0	P	40 - 150
USGS O-2060-01	2,4-D-d3	80.7	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	90.3	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	71.6	P	30 - 160
USGS O-2060-01	Diuron-d6	53.0	P	30 - 150
USGS O-2060-01	Primidone-d5	82.5	P	30 - 150

Lab Sample ID: 1900681
Field Sample ID: G5SW0137

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	82.5	P	40 - 150
USGS O-2060-01	2,4-D-d3	81.7	P	30 - 150
USGS O-2060-01	Acetaminophen-d4	110	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	82.4	P	30 - 160
USGS O-2060-01	Diuron-d6	62.3	P	30 - 150
USGS O-2060-01	Primidone-d5	88.3	P	30 - 150

Quality Assurance Report Calibration Verification

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A76673

Included Lab Sample IDs: 1900679, 1900680, 1900681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	87.2	87.6	P/P	50 - 150
Acetaminophen	95.2	97.6	P/P	60 - 150
Bentazon	88.4	91.6	P/P	50 - 150
Carbamazepine	90.8	97.6	P/P	60 - 150
Diuron	92.0	92.8	P/P	60 - 150
Fenuron	96.4	100	P/P	60 - 150
Fluridone	97.2	102	P/P	60 - 160
Imidacloprid	89.6	97.6	P/P	60 - 150
Linuron	92.4	95.2	P/P	60 - 150
MCP	97.6	95.2	P/P	50 - 150
Primidone	87.2	84.4	P/P	60 - 150
Triclopyr	95.6	92.4	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A76745

Included Lab Sample IDs: 1900679, 1900680, 1900681

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	89.5	83.9	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	LCS	Precision SMP	MS
EPA 8321B	Sucralose	74.4	84.2 77.1			8.67
USGS O-2060-01	2,4-D	70.2	69.4 67.8			2.33
	Acetaminophen	92.6	57.4 79.2			31.9
	Bentazon	66.0	28.6 30.0			4.78
	Carbamazepine	85.6	52.6 55.6			5.55
	Diuron	87.0	47.0 40.8			14.1
	Fenuron	78.2	40.2 37.8			6.15
	Fluridone	82.4	53.4 58.2			8.60
	Imidacloprid	75.4	99.4 101			1.60
	Linuron	76.4	60.6 67.4			10.6
	MCP	83.6	54.0 59.6			9.86
	Primidone	72.4	52.8 63.0			17.6
	Triclopyr	76.6	60.2 66.8			10.4

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1900679, 1900680, 1900681
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1900679, 1900680, 1900681
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1900679, 1900680, 1900681

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/23/2017	05/27/2017	Mohammad Ghaffari	05/27/2017	Mohammad Ghaffari	1900679, 1900680, 1900681
USGS O-2060-01	05/23/2017	05/24/2017	Hoor Shaik	05/26/2017	Juyoung Kim	1900679, 1900680, 1900681