

Chemical Analysis Report

TLH-ROC-2018-10-04-04

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

Event Description: **G1 Run 4**
Request ID: **RQ-2018-09-10-57**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 24-OCT-2018 15:05



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: MULE CREEK @ SR12

Collection Date/Time: 10/04/2018 10:20

Field ID: G1TLHR0063

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2031652	EPA 8321B	2,4-D	0.0020	U	ug/L	P352686	
		Bentazon	8.0E-04	U	ug/L	P352686	
		MCP	0.0020	U	ug/L	P352686	
		Triclopyr**	0.0040	U	ug/L	P352686	
		Imidacloprid	0.0020	U	ug/L	P352686	MS
		Diuron	0.0020	U	ug/L	P352686	
		Pyraclostrobin**	0.0020	U	ug/L	P352686	
		Primidone**	0.0040	U	ug/L	P352686	
		Linuron	0.0040	U	ug/L	P352686	
		Acetaminophen**	0.0080	U	ug/L	P352686	
		Fenuron	0.016	U	ug/L	P352686	MS
		Imazapyr**	0.012	I	ug/L	P352686	
		Carbamazepine**	8.0E-04	U	ug/L	P352686	
		Fluridone**	4.0E-04	U	ug/L	P352686	
		Hydrocodone**	8.0E-04	U	ug/L	P352686	
		Naproxen**	0.0080	U	ug/L	P352686	
		Ibuprofen**	0.020	U	ug/L	P352686	
		Sucralose**	0.010	U	ug/L	P352677	
		Acesulfame K**	0.10	U	ug/L	P352677	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P352677

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P352686

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	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P352677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
Sucralose	97.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P352686

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	90.3		P	40 - 150
Acetaminophen	102		P	30 - 150
Bentazon	91.1		P	30 - 150
Carbamazepine	86.7		P	40 - 150
Diuron	79.5		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	109		P	40 - 150
Hydrocodone	104		P	40 - 150
Ibuprofen	77.7		P	40 - 150
Imazapyr	84.5		P	40 - 150
Imidacloprid	108		P	40 - 160
Linuron	76.5		P	40 - 150
MCPP	96.8		P	40 - 150
Naproxen	83.7		P	40 - 150
Primidone	92.9		P	40 - 150
Pyraclostrobin	73.0		P	40 - 150
Triclopyr	95.6		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P352677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2030560	Acesulfame K	130	119	P/P	40 - 150
2030560	Sucralose	98.2	97.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P352686

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2031728	2,4-D	129	124	P/P	40 - 150
2031728	Acetaminophen	130	131	P/P	30 - 150
2031728	Bentazon	47.0	44.0	P/P	30 - 150
2031728	Carbamazepine	70.5	71.8	P/P	40 - 150
2031728	Diuron	51.6	63.1	P/P	40 - 150
2031728	Fenuron	38.4	41.6	F/P	40 - 150
2031728	Fluridone	109	115	P/P	40 - 150
2031728	Hydrocodone	113	109	P/P	40 - 150
2031728	Ibuprofen	74.7	81.3	P/P	40 - 150
2031728	Imazapyr	93.3	101	P/P	40 - 150
2031728	Imidacloprid	182	183	F/F	40 - 160
2031728	Linuron	67.0	68.1	P/P	40 - 150
2031728	MCP	140	136	P/P	40 - 150
2031728	Naproxen	90.6	78.0	P/P	40 - 150
2031728	Primidone	89.7	92.7	P/P	40 - 150
2031728	Pyraclostrobin	74.5	74.3	P/P	40 - 150
2031728	Triclopyr	122	134	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P352677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2030560	Acesulfame K	8.26	Spike	P	0 - 30
2030560	Sucralose	0.735	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P352686

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2031728	2,4-D	3.36	Spike	P	0 - 30
2031728	Acetaminophen	0.832	Spike	P	0 - 30
2031728	Bentazon	6.44	Spike	P	0 - 30
2031728	Carbamazepine	1.78	Spike	P	0 - 30
2031728	Diuron	20.1	Spike	P	0 - 30
2031728	Fenuron	3.39	Spike	P	0 - 30
2031728	Fluridone	5.27	Spike	P	0 - 30
2031728	Hydrocodone	3.92	Spike	P	0 - 30
2031728	Ibuprofen	8.40	Spike	P	0 - 30
2031728	Imazapyr	8.23	Spike	P	0 - 30
2031728	Imidacloprid	0.486	Spike	P	0 - 30
2031728	Linuron	1.62	Spike	P	0 - 30
2031728	MCP	2.89	Spike	P	0 - 30
2031728	Naproxen	14.9	Spike	P	0 - 30
2031728	Primidone	3.23	Spike	P	0 - 30
2031728	Pyraclostrobin	0.274	Spike	P	0 - 30
2031728	Triclopyr	9.32	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: 2031652

Field Sample ID: G1TLHR0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	127	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	76.5	P	30 - 160
EPA 8321B	Diuron-d6	65.9	P	30 - 160
EPA 8321B	Endothall-d6	113	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.0	P	30 - 160
EPA 8321B	Primidone-d5	82.3	P	30 - 160
EPA 8321B	Sucralose-d6	114	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A86953
Included Lab Sample IDs: 2031652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	134	157	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A86996
Included Lab Sample IDs: 2031652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.6	98.8	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A87117
Included Lab Sample IDs: 2031652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.4	101	P/P	50 - 150
Bentazon	95.9	85.2	P/P	50 - 160
Ibuprofen	89.3	101	P/P	50 - 160
MCP	86.5	96.0	P/P	50 - 150
Naproxen	83.1	85.4	P/P	50 - 160
Triclopyr	95.0	107	P/P	50 - 160

Reference Method: EPA 8321B
Run ID: A87121
Included Lab Sample IDs: 2031652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	126	98.5	P/P	60 - 160
Carbamazepine	106	111	P/P	60 - 160
Diuron	114	117	P/P	60 - 150
Fenuron	106	111	P/P	60 - 150
Fluridone	117	115	P/P	60 - 160
Hydrocodone	112	118	P/P	60 - 150
Imazapyr	101	96.1	P/P	50 - 150
Imidacloprid	99.5	92.3	P/P	60 - 150
Linuron	112	110	P/P	60 - 150
Primidone	102	113	P/P	60 - 150
Pyraclostrobin	103	102	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		Precision SMP	MS
			LCS			
EPA 8321B	2,4-D	90.3	129	124		3.36
	Acesulfame K	122	130	119		8.26
	Acetaminophen	102	131	130		0.832
	Bentazon	91.1	47.0	44.0		6.44
	Carbamazepine	86.7	70.5	71.8		1.78
	Diuron	79.5	51.6	63.1		20.1
	Fenuron	114	41.6	38.4		3.39
	Fluridone	109	109	115		5.27
	Hydrocodone	104	109	113		3.92
	Ibuprofen	77.7	74.7	81.3		8.40
	Imazapyr	84.5	93.3	101		8.23
	Imidacloprid	108	183	182		0.486
	Linuron	76.5	67.0	68.1		1.62
	MCP	96.8	140	136		2.89
	Naproxen	83.7	90.6	78.0		14.9
	Primidone	92.9	92.7	89.7		3.23
	Pyraclostrobin	73.0	74.5	74.3		0.274
	Sucralose	97.2	98.2	97.4		0.735
	Triclopyr	95.6	122	134		9.32

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2031652

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/04/2018	10/05/2018 08:00	Mohammad Ghaffari	10/05/2018 13:44	Mohammad Ghaffari	2031652
	10/04/2018	10/05/2018 08:00	Mohammad Ghaffari	10/08/2018 20:15	Mohammad Ghaffari	2031652
	10/04/2018	10/05/2018 13:00	Hoor Shaik	10/06/2018 18:10	Juyoung Kim	2031652
	10/04/2018	10/05/2018 13:00	Hoor Shaik	10/07/2018 23:01	Juyoung Kim	2031652