

Chemical Analysis Report

TLH-ROC-2018-10-22-01

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

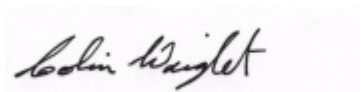
Event Description: **Marianna-Chipola River II**
Request ID: **RQ-2018-10-15-67**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 22-OCT-2018 11:26

A handwritten signature in black ink, appearing to read "Colin Wright", is shown on a light-colored 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: Chipola Site 1

Collection Date/Time: 10/20/2018 11:11

Field ID: G2WA00014

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034672	EPA 8321B	2,4-D	0.012		ug/L	P353404	
		Bentazon	8.0E-04	U	ug/L	P353404	
		MCP	0.0020	U	ug/L	P353404	
		Triclopyr**	0.0040	U	ug/L	P353404	
		Imidacloprid	0.0040	I	ug/L	P353404	
		Diuron	0.0021	I	ug/L	P353404	
		Pyraclostrobin**	0.0020	U	ug/L	P353404	
		Primidone**	0.0040	U	ug/L	P353404	
		Linuron	0.0040	U	ug/L	P353404	
		Acetaminophen**	0.0080	U	ug/L	P353404	
		Fenuron	0.019	I	ug/L	P353404	
		Imazapyr**	0.056		ug/L	P353404	
		Carbamazepine**	8.0E-04	U	ug/L	P353404	
		Fluridone**	5.4E-04	I	ug/L	P353404	
		Hydrocodone**	8.0E-04	U	ug/L	P353404	
		Naproxen**	0.0080	U	ug/L	P353404	
		Ibuprofen**	0.020	U	ug/L	P353404	
		Sucralose**	0.32		ug/L	P353403	
		Acesulfame K**	0.10	U	ug/L	P353403	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Chipola Site 2

Collection Date/Time: 10/20/2018 13:10

Field ID: G2WA00015

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034673	EPA 8321B	2,4-D	0.0087		ug/L	P353404	
		Bentazon	8.0E-04	U	ug/L	P353404	
		MCP	0.0020	U	ug/L	P353404	
		Triclopyr**	0.0040	U	ug/L	P353404	
		Imidacloprid	0.0039	I	ug/L	P353404	
		Diuron	0.0020	U	ug/L	P353404	
		Pyraclostrobin**	0.0020	U	ug/L	P353404	
		Primidone**	0.0040	U	ug/L	P353404	
		Linuron	0.0040	U	ug/L	P353404	
		Acetaminophen**	0.0080	U	ug/L	P353404	
		Fenuron	0.016	U	ug/L	P353404	
		Imazapyr**	0.027		ug/L	P353404	
		Carbamazepine**	8.0E-04	U	ug/L	P353404	
		Fluridone**	4.0E-04	U	ug/L	P353404	
		Hydrocodone**	8.0E-04	U	ug/L	P353404	
		Naproxen**	0.0080	U	ug/L	P353404	
		Ibuprofen**	0.020	U	ug/L	P353404	
		Sucralose**	0.032	I	ug/L	P353403	
		Acesulfame K**	0.10	U	ug/L	P353403	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Sample Location: Chipola Site 3

Collection Date/Time: 10/20/2018 14:25

Field ID: G2WA00016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034674	EPA 8321B	2,4-D	0.0085		ug/L	P353404	
		Bentazon	8.0E-04	U	ug/L	P353404	
		MCP	0.0020	U	ug/L	P353404	
		Triclopyr**	0.0040	U	ug/L	P353404	
		Imidacloprid	0.0032	I	ug/L	P353404	
		Diuron	0.0020	U	ug/L	P353404	
		Pyraclostrobin**	0.0020	U	ug/L	P353404	
		Primidone**	0.0040	U	ug/L	P353404	
		Linuron	0.0040	U	ug/L	P353404	
		Acetaminophen**	0.0080	U	ug/L	P353404	
		Fenuron	0.021	I	ug/L	P353404	
		Imazapyr**	0.037		ug/L	P353404	
		Carbamazepine**	8.0E-04	U	ug/L	P353404	
		Fluridone**	4.0E-04	U	ug/L	P353404	
		Hydrocodone**	8.0E-04	U	ug/L	P353404	
		Naproxen**	0.0080	U	ug/L	P353404	
		Ibuprofen**	0.020	U	ug/L	P353404	
		Sucralose**	0.041		ug/L	P353403	
		Acesulfame K**	0.10	U	ug/L	P353403	

Ref. Method and Comment:

EPA 8321B: Insufficient sample to perform matrix spikes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P353403

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

Reference Method: EPA 8321B
Batch ID: P353404

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: P353403

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	73.9		P	40 - 150
Sucralose	79.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104	86.0	P/P	40 - 150
Acetaminophen	121	116	P/P	30 - 150
Bentazon	87.0	80.7	P/P	30 - 150
Carbamazepine	86.4	81.9	P/P	40 - 150
Diuron	83.2	79.6	P/P	40 - 150
Fenuron	123	125	P/P	40 - 150
Fluridone	98.3	96.0	P/P	40 - 150
Hydrocodone	114	111	P/P	40 - 150
Ibuprofen	85.7	84.5	P/P	40 - 150
Imazapyr	101	98.3	P/P	40 - 150
Imidacloprid	98.0	101	P/P	40 - 160
Linuron	79.0	72.1	P/P	40 - 150
MCPP	99.1	93.2	P/P	40 - 150
Naproxen	84.9	88.2	P/P	40 - 150
Primidone	97.8	103	P/P	40 - 150
Pyraclostrobin	78.2	80.6	P/P	40 - 150
Triclopyr	91.9	88.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P353403

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2034674	Acesulfame K	110	106	P/P	40 - 150
2034674	Sucralose	89.8	87.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P353403

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034674	Acesulfame K	3.41	Spike	P	0 - 30
2034674	Sucralose	2.11	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P353404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	2,4-D	18.7	LCS	P	0 - 30
LFB	Acetaminophen	3.49	LCS	P	0 - 30
LFB	Bentazon	7.45	LCS	P	0 - 30
LFB	Carbamazepine	5.36	LCS	P	0 - 30
LFB	Diuron	4.45	LCS	P	0 - 30
LFB	Fenuron	1.01	LCS	P	0 - 30
LFB	Fluridone	2.31	LCS	P	0 - 30
LFB	Hydrocodone	3.28	LCS	P	0 - 30
LFB	Ibuprofen	1.40	LCS	P	0 - 30
LFB	Imazapyr	2.66	LCS	P	0 - 30
LFB	Imidacloprid	3.04	LCS	P	0 - 30
LFB	Linuron	9.12	LCS	P	0 - 30
LFB	MCP	6.13	LCS	P	0 - 30
LFB	Naproxen	3.90	LCS	P	0 - 30
LFB	Primidone	5.21	LCS	P	0 - 30
LFB	Pyraclostrobin	3.01	LCS	P	0 - 30
LFB	Triclopyr	4.38	LCS	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: 2034672
Field Sample ID: G2WA00014

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	130	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.5	P	30 - 160
EPA 8321B	Diuron-d6	60.8	P	30 - 160
EPA 8321B	Endothall-d6	76.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	93.3	P	30 - 160
EPA 8321B	Primidone-d5	88.7	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	40 - 160

Lab Sample ID: 2034673
Field Sample ID: G2WA00015

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	119	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	53.0	P	30 - 160
EPA 8321B	Diuron-d6	49.5	P	30 - 160
EPA 8321B	Endothall-d6	86.5	P	40 - 160
EPA 8321B	Ibuprofen-d3	92.8	P	30 - 160
EPA 8321B	Primidone-d5	81.0	P	30 - 160
EPA 8321B	Sucralose-d6	135	P	40 - 160

Lab Sample ID: 2034674
Field Sample ID: G2WA00016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	128	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.4	P	30 - 160
EPA 8321B	Diuron-d6	49.5	P	30 - 160
EPA 8321B	Endothall-d6	83.3	P	40 - 160
EPA 8321B	Ibuprofen-d3	93.0	P	30 - 160
EPA 8321B	Primidone-d5	80.7	P	30 - 160
EPA 8321B	Sucralose-d6	122	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A87176

Included Lab Sample IDs: 2034672, 2034673, 2034674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	71.3	76.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87183

Included Lab Sample IDs: 2034672, 2034673, 2034674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	72.8	83.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87184

Included Lab Sample IDs: 2034672, 2034673, 2034674

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	129	96.2	P/P	50 - 150
Acetaminophen	126	108	P/P	60 - 160
Bentazon	105	109	P/P	50 - 160
Carbamazepine	118	115	P/P	60 - 160
Diuron	125	114	P/P	60 - 150
Fenuron	118	110	P/P	60 - 150
Fluridone	114	115	P/P	60 - 160
Hydrocodone	118	113	P/P	60 - 150
Ibuprofen	86.4	72.4	P/P	50 - 160
Imazapyr	112	102	P/P	50 - 150
Imidacloprid	110	105	P/P	60 - 150
Linuron	113	108	P/P	60 - 150
MCPP	91.3	93.4	P/P	50 - 150
Naproxen	87.3	85.1	P/P	50 - 160
Primidone	120	110	P/P	60 - 150
Pyraclostrobin	108	104	P/P	60 - 150
Triclopyr	104	96.3	P/P	50 - 160

* 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	MS
							SMP	
EPA 8321B	2,4-D	104	86.0			18.7		
	Acesulfame K	73.9		110	106			3.41
	Acetaminophen	121	116			3.49		
	Bentazon	87.0	80.7			7.45		
	Carbamazepine	86.4	81.9			5.36		
	Diuron	83.2	79.6			4.45		
	Fenuron	123	125			1.01		
	Fluridone	98.3	96.0			2.31		
	Hydrocodone	114	111			3.28		
	Ibuprofen	85.7	84.5			1.40		
	Imazapyr	101	98.3			2.66		
	Imidacloprid	98.0	101			3.04		
	Linuron	79.0	72.1			9.12		
	MCPP	99.1	93.2			6.13		
	Naproxen	84.9	88.2			3.90		
	Primidone	97.8	103			5.21		
	Pyraclostrobin	78.2	80.6			3.01		
	Sucralose	79.0		89.8	87.9			2.11
	Triclopyr	91.9	88.0			4.38		

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2034672, 2034673, 2034674

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/20/2018 21:38	Mohammad Ghaffari	2034672
	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/20/2018 21:52	Mohammad Ghaffari	2034673
	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/20/2018 22:07	Mohammad Ghaffari	2034674
	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/21/2018 12:23	Mohammad Ghaffari	2034672
	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/21/2018 12:38	Mohammad Ghaffari	2034673
	10/20/2018	10/20/2018 20:15	Mohammad Ghaffari	10/21/2018 12:52	Mohammad Ghaffari	2034674
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 17:46	Juyoung Kim	2034674
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 18:21	Juyoung Kim	2034672
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 18:55	Juyoung Kim	2034673
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 21:48	Juyoung Kim	2034674
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 22:23	Juyoung Kim	2034672
	10/20/2018	10/21/2018 12:00	Hoor Shaik	10/21/2018 22:58	Juyoung Kim	2034673