

Chemical Analysis Report

TLH-ROC-2018-10-19-01

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

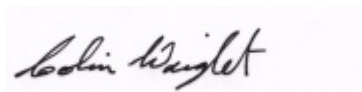
Event Description: **Marianna-Chipola River**
Request ID: **RQ-2018-10-15-66**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
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Certified by: Colin Wright, Program Administrator

Date Certified: 22-OCT-2018 11:00

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 River @ SR 166

Collection Date/Time: 10/18/2018 16:50

Field ID: Chipola River @ SR 166

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034381	EPA 8321B	2,4-D	0.010		ug/L	P353085	
		Bentazon	8.0E-04	U	ug/L	P353085	
		MCP	0.0020	U	ug/L	P353085	
		Triclopyr**	0.0040	U	ug/L	P353085	
		Imidacloprid	0.0042	I	ug/L	P353085	
		Diuron	0.0020	U	ug/L	P353085	
		Pyraclostrobin**	0.0020	U	ug/L	P353085	
		Primidone**	0.0040	U	ug/L	P353085	
		Linuron	0.0040	U	ug/L	P353085	
		Acetaminophen**	0.0080	U	ug/L	P353085	
		Fenuron	0.016	U	ug/L	P353085	
		Imazapyr**	0.048		ug/L	P353085	
		Carbamazepine**	8.0E-04	U	ug/L	P353085	
		Fluridone**	4.0E-04	U	ug/L	P353085	
		Hydrocodone**	8.0E-04	U	ug/L	P353085	
		Naproxen**	0.0080	U	ug/L	P353085	
		Ibuprofen**	0.020	U	ug/L	P353085	
		Sucralose**	0.055		ug/L	P353322	
		Acesulfame K**	0.10	U	ug/L	P353322	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon, and accuracy for fluridone and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Chipola River @ Magnolia

Collection Date/Time: 10/18/2018 17:20

Field ID: Chipola River @ Magnolia

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2034382	EPA 8321B	2,4-D	0.011		ug/L	P353085	
		Bentazon	8.0E-04	U	ug/L	P353085	
		MCP	0.0020	U	ug/L	P353085	
		Triclopyr**	0.0040	U	ug/L	P353085	
		Imidacloprid	0.0038	I	ug/L	P353085	
		Diuron	0.0020	U	ug/L	P353085	
		Pyraclostrobin**	0.0020	U	ug/L	P353085	
		Primidone**	0.0040	U	ug/L	P353085	
		Linuron	0.0040	U	ug/L	P353085	
		Acetaminophen**	0.0080	U	ug/L	P353085	
		Fenuron	0.016	U	ug/L	P353085	
		Imazapyr**	0.035		ug/L	P353085	
		Carbamazepine**	8.0E-04	U	ug/L	P353085	
		Fluridone**	4.0E-04	U	ug/L	P353085	
		Hydrocodone**	8.0E-04	U	ug/L	P353085	
		Naproxen**	0.0080	U	ug/L	P353085	
		Ibuprofen**	0.020	U	ug/L	P353085	
		Sucralose**	0.060		ug/L	P353322	
		Acesulfame K**	0.10	U	ug/L	P353322	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon, and accuracy for fluridone and imazapyr 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: P353085

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
MCP	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

Reference Method: EPA 8321B
Batch ID: P353322

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P353085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	83.9		P	40 - 150
Acetaminophen	79.3		P	30 - 150
Bentazon	99.5		P	30 - 150
Carbamazepine	70.3		P	40 - 150
Diuron	64.8		P	40 - 150
Fenuron	87.2		P	40 - 150
Fluridone	89.3		P	40 - 150
Hydrocodone	80.9		P	40 - 150
Ibuprofen	57.7		P	40 - 150
Imazapyr	78.9		P	40 - 150
Imidacloprid	69.2		P	40 - 160
Linuron	63.2		P	40 - 150
MCPP	85.2		P	40 - 150
Naproxen	76.2		P	40 - 150
Primidone	80.1		P	40 - 150
Pyraclostrobin	60.5		P	40 - 150
Triclopyr	78.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353322

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	70.3		P	40 - 150
Sucralose	73.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P353085

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2033413	2,4-D	115	128	P/P	40 - 150
2033413	Acetaminophen	78.5	81.9	P/P	30 - 150
2033413	Carbamazepine	57.9	58.0	P/P	40 - 150
2033413	Diuron	55.6	51.8	P/P	40 - 150
2033413	Fenuron	72.7	71.5	P/P	40 - 150
2033413	Hydrocodone	75.9	74.2	P/P	40 - 150
2033413	Ibuprofen	73.2	55.1	P/P	40 - 150
2033413	Imidacloprid	128	126	P/P	40 - 160
2033413	Linuron	52.4	47.9	P/P	40 - 150
2033413	MCP	127	139	P/P	40 - 150
2033413	Naproxen	88.9	99.4	P/P	40 - 150
2033413	Primidone	75.1	74.2	P/P	40 - 150
2033413	Pyraclostrobin	69.1	71.3	P/P	40 - 150
2033413	Triclopyr	128	139	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P353322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2034382	Acesulfame K	105	102	P/P	40 - 150
2034382	Sucralose	98.6	84.9	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P353085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2033413	2,4-D	8.17	Spike	P	0 - 30
2033413	Acetaminophen	4.22	Spike	P	0 - 30
2033413	Carbamazepine	0.176	Spike	P	0 - 30
2033413	Diuron	5.94	Spike	P	0 - 30
2033413	Fenuron	1.78	Spike	P	0 - 30
2033413	Fluridone	2.62	Spike	P	0 - 30
2033413	Hydrocodone	2.32	Spike	P	0 - 30
2033413	Ibuprofen	28.3	Spike	P	0 - 30
2033413	Imazapyr	8.77	Spike	P	0 - 30
2033413	Imidacloprid	0.864	Spike	P	0 - 30
2033413	Linuron	9.10	Spike	P	0 - 30
2033413	MCP	8.51	Spike	P	0 - 30
2033413	Naproxen	11.2	Spike	P	0 - 30
2033413	Primidone	1.14	Spike	P	0 - 30
2033413	Pyraclostrobin	3.06	Spike	P	0 - 30
2033413	Triclopyr	8.06	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P353322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2034382	Acesulfame K	2.99	Spike	P	0 - 30
2034382	Sucralose	14.6	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: 2034381

Field Sample ID: Chipola River @ SR 166

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	115	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.7	P	30 - 160
EPA 8321B	Diuron-d6	44.5	P	30 - 160
EPA 8321B	Endothall-d6	88.0	P	40 - 160
EPA 8321B	Ibuprofen-d3	72.1	P	30 - 160
EPA 8321B	Primidone-d5	79.5	P	30 - 160
EPA 8321B	Sucralose-d6	129	P	40 - 160

Lab Sample ID: 2034382

Field Sample ID: Chipola River @ Magnolia

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.8	P	30 - 160
EPA 8321B	Diuron-d6	46.1	P	30 - 160
EPA 8321B	Endothall-d6	84.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	79.4	P	30 - 160
EPA 8321B	Primidone-d5	73.5	P	30 - 160
EPA 8321B	Sucralose-d6	136	P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A87172

Included Lab Sample IDs: 2034381, 2034382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.0	95.7	P/P	50 - 150
Acetaminophen	95.9	101	P/P	60 - 160
Bentazon	159	137	P/P	50 - 160
Carbamazepine	87.2	102	P/P	60 - 160
Diuron	112	104	P/P	60 - 150
Fenuron	103	97.4	P/P	60 - 150
Fluridone	101	109	P/P	60 - 160
Hydrocodone	96.1	100	P/P	60 - 150
Ibuprofen	80.6	106	P/P	50 - 160
Imazapyr	97.2	119	P/P	50 - 150
Imidacloprid	92.1	88.7	P/P	60 - 150
Linuron	105	94.6	P/P	60 - 150
MCP	93.2	90.5	P/P	50 - 150
Naproxen	101	104	P/P	50 - 160
Primidone	89.2	98.2	P/P	60 - 150
Pyraclostrobin	97.1	109	P/P	60 - 150
Triclopyr	91.3	98.2	P/P	50 - 160

Reference Method: EPA 8321B

Run ID: A87174

Included Lab Sample IDs: 2034381, 2034382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	80.6	88.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A87176

Included Lab Sample IDs: 2034381, 2034382

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.3	70.0	P/P	60 - 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		Precision SMP	MS
			LCS			
EPA 8321B	2,4-D	83.9	115	128		8.17
	Acesulfame K	70.3	105	102		2.99
	Acetaminophen	79.3	78.5	81.9		4.22
	Bentazon	99.5				
	Carbamazepine	70.3	57.9	58.0		0.176
	Diuron	64.8	55.6	51.8		5.94
	Fenuron	87.2	72.7	71.5		1.78
	Fluridone	89.3				2.62
	Hydrocodone	80.9	75.9	74.2		2.32
	Ibuprofen	57.7	73.2	55.1		28.3
	Imazapyr	78.9				8.77
	Imidacloprid	69.2	128	126		0.864
	Linuron	63.2	52.4	47.9		9.10
	MCP	85.2	127	139		8.51
	Naproxen	76.2	88.9	99.4		11.2
	Primidone	80.1	75.1	74.2		1.14
	Pyraclostrobin	60.5	69.1	71.3		3.06
	Sucralose	73.1	98.6	84.9		14.6
	Triclopyr	78.2	128	139		8.06

Reference Method Descriptions

Method / DoH Cert #
EPA 8321B / E31780

Description
Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS

Associated Samples
2034381, 2034382

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/18/2018	10/19/2018 10:00	Hoor Shaik	10/19/2018 14:12	Juyoung Kim	2034381
	10/18/2018	10/19/2018 10:00	Hoor Shaik	10/19/2018 16:11	Juyoung Kim	2034382
	10/18/2018	10/19/2018 10:00	Hoor Shaik	10/19/2018 16:46	Juyoung Kim	2034381
	10/18/2018	10/19/2018 10:00	Hoor Shaik	10/19/2018 17:21	Juyoung Kim	2034382
	10/18/2018	10/19/2018 10:27	Rebecca Ware	10/19/2018 12:07	Mohammad Ghaffari	2034381
	10/18/2018	10/19/2018 10:27	Rebecca Ware	10/19/2018 12:36	Mohammad Ghaffari	2034382
	10/18/2018	10/19/2018 10:27	Rebecca Ware	10/20/2018 15:46	Mohammad Ghaffari	2034381
	10/18/2018	10/19/2018 10:27	Rebecca Ware	10/20/2018 16:00	Mohammad Ghaffari	2034382