

Chemical Analysis Report

NW-DIST-2020-07-09-01

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

Event Description: **Wrights Creek (TREND)**

Request ID: **RQ-2020-07-06-49**

Customer: **NW-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
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Certified by: Colin Wright, Program Administrator

Date Certified: 17-JUL-2020 11:56

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed 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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Wrights Creek above Highway 177A

Collection Date/Time: 07/08/2020 14:05

Field ID: G3NW0444

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2181934	EPA 8321B	2,4-D	0.015		ug/L	P384331	
		Acesulfame K**	0.10	U	ug/L	P384329	
		AMPA**	0.10	U	ug/L	P384329	
		Sucralose**	0.012	I	ug/L	P384329	
		Acetaminophen**	0.0080	U	ug/L	P384331	
		Acetamiprid**	0.0020	U	ug/L	P384331	
		Endothall**	0.25	U	ug/L	P384329	
		Glufosinate**	0.10	U	ug/L	P384329	
		Glyphosate**	0.10	U	ug/L	P384329	
		Afidopyropen**	0.0020	U	ug/L	P384331	
		Bentazon	0.0071		ug/L	P384331	
		Benzovindiflupyr**	0.0020	U	ug/L	P384331	
		Carbamazepine**	8.0E-04	U	ug/L	P384331	
		Clothianidin**	0.0020	U	ug/L	P384331	
		Dinotefuran**	0.0020	U	ug/L	P384331	
		Diuron	0.0020	U	ug/L	P384331	
		Fenuron	0.016	U	ug/L	P384331	
		Fluridone**	8.0E-04	U	ug/L	P384331	
		Imazapyr**	0.0077	I	ug/L	P384331	
		Hydrocodone**	0.0020	U	ug/L	P384331	
		Ibuprofen**	0.020	U	ug/L	P384331	
		Imidacloprid	0.0028	I	ug/L	P384331	
		Linuron	0.0040	U	ug/L	P384331	
		Mandestrobin**	0.0020	U	ug/L	P384331	
		MCPP	0.0020	U	ug/L	P384331	
		Naproxen**	0.0080	U	ug/L	P384331	
		Primidone**	0.0040	U	ug/L	P384331	
		Pyraclostrobin**	0.0020	U	ug/L	P384331	
		Thiamethoxam**	0.0020	U	ug/L	P384331	
		Tolfenpyrad**	0.0020	U	ug/L	P384331	
		Triclopyr**	0.0040	U	ug/L	P384331	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon 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: P384329

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P384331

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	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
Mandestrobin	0.0020	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
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P384329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	61.3		P	40 - 150
AMPA	71.2		P	40 - 150
Endothall	101		P	40 - 150
Glufosinate	88.4		P	40 - 150
Glyphosate	86.3		P	40 - 140
Sucralose	85.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P384331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.4		P	30 - 160
Acetaminophen	78.5		P	30 - 160
Acetamiprid	75.3		P	30 - 160
Afidopyropen	75.1		P	30 - 160
Bentazon	54.6		P	30 - 160
Benzovindiflupyr	66.2		P	30 - 160
Carbamazepine	66.8		P	30 - 160
Clothianidin	78.9		P	30 - 160
Dinotefuran	94.2		P	30 - 160
Diuron	51.3		P	30 - 160
Fenuron	91.7		P	30 - 160
Fluridone	90.2		P	30 - 160
Hydrocodone	88.4		P	30 - 160
Ibuprofen	81.4		P	30 - 160
Imazapyr	66.6		P	30 - 160
Imidacloprid	94.5		P	30 - 160
Linuron	53.9		P	30 - 160
Mandestrobin	76.5		P	30 - 160
MCPP	90.2		P	30 - 160
Naproxen	54.3		P	30 - 160
Primidone	75.6		P	30 - 160
Pyraclostrobin	64.6		P	30 - 160
Thiamethoxam	89.1		P	30 - 160
Tolfenpyrad	47.3		P	30 - 160
Triclopyr	72.2		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P384329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181880	Acesulfame K	41.4	41.2	P/P	40 - 150
2181880	AMPA	82.0	77.8	P/P	40 - 150
2181880	Endothall	110	110	P/P	40 - 150
2181880	Glufosinate	84.9	80.0	P/P	40 - 150
2181880	Glyphosate	65.3	65.4	P/P	40 - 140
2181880	Sucralose	96.5	103	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P384331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2181914	2,4-D	82.2	74.0	P/P	30 - 160
2181914	Acetaminophen	81.7	78.6	P/P	30 - 160
2181914	Acetamiprid	70.7	71.6	P/P	30 - 160
2181914	Afidopyropen	72.3	65.4	P/P	30 - 160
2181914	Benzovindiflupyr	67.2	63.5	P/P	30 - 160
2181914	Carbamazepine	61.0	55.7	P/P	30 - 160
2181914	Clothianidin	71.7	68.4	P/P	30 - 160
2181914	Dinotefuran	88.2	84.9	P/P	30 - 160
2181914	Diuron	51.2	50.5	P/P	30 - 160
2181914	Fenuron	76.1	70.1	P/P	30 - 160
2181914	Fluridone	89.5	85.4	P/P	30 - 160
2181914	Hydrocodone	71.5	65.3	P/P	30 - 160
2181914	Ibuprofen	68.0	66.0	P/P	30 - 160
2181914	Imazapyr	81.9	73.0	P/P	30 - 160
2181914	Imidacloprid	113	107	P/P	30 - 160
2181914	Linuron	56.5	53.5	P/P	30 - 160
2181914	Mandestrobin	76.9	70.7	P/P	30 - 160
2181914	MCPP	86.8	81.7	P/P	30 - 160
2181914	Naproxen	70.1	58.0	P/P	30 - 160
2181914	Primidone	67.1	69.8	P/P	30 - 160
2181914	Pyraclostrobin	62.5	57.8	P/P	30 - 160
2181914	Thiamethoxam	86.8	83.3	P/P	30 - 160
2181914	Tolfenpyrad	41.5	43.8	P/P	30 - 160
2181914	Triclopyr	58.8	60.9	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P384329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2181880	Acesulfame K	0.514	Spike	P	0 - 30
2181880	AMPA	5.21	Spike	P	0 - 30
2181880	Endothall	0.582	Spike	P	0 - 30
2181880	Glufosinate	5.93	Spike	P	0 - 30
2181880	Glyphosate	0.211	Spike	P	0 - 30
2181880	Sucralose	6.30	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P384331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2181914	2,4-D	6.48	Spike	P	0 - 30
2181914	Acetaminophen	3.94	Spike	P	0 - 30
2181914	Acetamiprid	1.28	Spike	P	0 - 30
2181914	Afidopyropen	9.95	Spike	P	0 - 30
2181914	Bentazon	8.60	Spike	P	0 - 30
2181914	Benzovindiflupyr	5.73	Spike	P	0 - 30
2181914	Carbamazepine	9.04	Spike	P	0 - 30
2181914	Clothianidin	4.15	Spike	P	0 - 30
2181914	Dinotefuran	3.83	Spike	P	0 - 30
2181914	Diuron	1.16	Spike	P	0 - 30
2181914	Fenuron	8.17	Spike	P	0 - 30
2181914	Fluridone	3.56	Spike	P	0 - 30
2181914	Hydrocodone	8.98	Spike	P	0 - 30
2181914	Ibuprofen	3.08	Spike	P	0 - 30
2181914	Imazapyr	11.5	Spike	P	0 - 30
2181914	Imidacloprid	3.14	Spike	P	0 - 30
2181914	Linuron	5.34	Spike	P	0 - 30
2181914	Mandestrobin	8.38	Spike	P	0 - 30
2181914	MCP	6.04	Spike	P	0 - 30
2181914	Naproxen	19.0	Spike	P	0 - 30
2181914	Primidone	3.54	Spike	P	0 - 30
2181914	Pyraclostrobin	7.80	Spike	P	0 - 30
2181914	Thiamethoxam	3.60	Spike	P	0 - 30
2181914	Tolfenpyrad	5.59	Spike	P	0 - 30
2181914	Triclopyr	3.54	Spike	P	0 - 30

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2181934
Field Sample ID: G3NW0444

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	50.0	P	30 - 160
EPA 8321B	Diuron-d6	47.7	P	30 - 160
EPA 8321B	Endothall-d6	99.9	P	30 - 160
EPA 8321B	Endothall-d6	99.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	81.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	55.0	P	30 - 160
EPA 8321B	Primidone-d5	74.7	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A99830
Included Lab Sample IDs: 2181934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	66.2	68.0	P/P	60 - 160
Endothall	127	129	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A99846
Included Lab Sample IDs: 2181934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.0	94.0	P/P	50 - 150
Acetaminophen	110	113	P/P	60 - 160
Acetamiprid	107	108	P/P	50 - 150
Afidopyropen	121	118	P/P	50 - 150
Bentazon	113	117	P/P	50 - 160
Benzovindiflupyr	84.9	86.8	P/P	50 - 150
Carbamazepine	102	105	P/P	60 - 150
Clothianidin	100	94.9	P/P	60 - 150
Dinotefuran	105	101	P/P	50 - 150
Diuron	105	105	P/P	60 - 160
Fenuron	94.0	94.7	P/P	60 - 150
Fluridone	104	104	P/P	60 - 160
Hydrocodone	120	116	P/P	60 - 150
Ibuprofen	100	107	P/P	50 - 160
Imazapyr	76.6	86.1	P/P	50 - 150
Imidacloprid	96.0	97.4	P/P	60 - 150
Linuron	89.8	91.0	P/P	60 - 150
Mandestrobin	99.2	93.5	P/P	50 - 150
MCPP	88.4	95.1	P/P	50 - 150
Naproxen	97.8	98.6	P/P	50 - 160
Primidone	86.0	91.3	P/P	60 - 150
Pyraclostrobin	86.8	88.6	P/P	60 - 150
Thiamethoxam	116	117	P/P	50 - 150
Tolfenpyrad	102	108	P/P	60 - 150
Triclopyr	76.6	79.8	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A99851
Included Lab Sample IDs: 2181934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	72.8	74.6	P/P	60 - 160
Glufosinate	87.7	98.6	P/P	60 - 160
Glyphosate	91.6	96.0	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A99878
Included Lab Sample IDs: 2181934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	90.3	87.4	P/P	60 - 160

Quality Assurance Report

Calibration Verification

* 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	81.4	82.2	74.0		6.48
	Acesulfame K	61.3	41.4	41.2		0.514
	Acetaminophen	78.5	81.7	78.6		3.94
	Acetamiprid	75.3	70.7	71.6		1.28
	Afidopyropen	75.1	72.3	65.4		9.95
	AMPA	71.2	82.0	77.8		5.21
	Bentazon	54.6				8.60
	Benzovindiflupyr	66.2	67.2	63.5		5.73
	Carbamazepine	66.8	61.0	55.7		9.04
	Clothianidin	78.9	71.7	68.4		4.15
	Dinotefuran	94.2	88.2	84.9		3.83
	Diuron	51.3	51.2	50.5		1.16
	Endothall	101	110	110		0.582
	Fenuron	91.7	76.1	70.1		8.17
	Fluridone	90.2	89.5	85.4		3.56
	Glufosinate	88.4	84.9	80.0		5.93
	Glyphosate	86.3	65.3	65.4		0.211
	Hydrocodone	88.4	71.5	65.3		8.98
	Ibuprofen	81.4	68.0	66.0		3.08
	Imazapyr	66.6	81.9	73.0		11.5
	Imidacloprid	94.5	113	107		3.14
	Linuron	53.9	56.5	53.5		5.34
	Mandestrobin	76.5	76.9	70.7		8.38
	MCPP	90.2	86.8	81.7		6.04
	Naproxen	54.3	70.1	58.0		19.0
	Primidone	75.6	67.1	69.8		3.54
	Pyraclostrobin	64.6	62.5	57.8		7.80
	Sucralose	85.7	96.5	103		6.30
	Thiamethoxam	89.1	86.8	83.3		3.60
	Tolfenpyrad	47.3	41.5	43.8		5.59
	Triclopyr	72.2	58.8	60.9		3.54

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2181934
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2181934

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	07/09/2020	07/10/2020 09:15	Rebecca Ware	07/10/2020 14:50	Rebecca Ware	2181934
	07/09/2020	07/10/2020 09:15	Rebecca Ware	07/13/2020 15:23	Rebecca Ware	2181934
	07/09/2020	07/10/2020 09:15	Rebecca Ware	07/14/2020 23:50	Rebecca Ware	2181934
	07/09/2020	07/13/2020 08:30	Hoor Shaik	07/14/2020 05:55	Juyoung Kim	2181934