

Chemical Analysis Report

NW-DIST-2020-03-19-02

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-2020-03-16-20**

Customer: **NW-DIST**

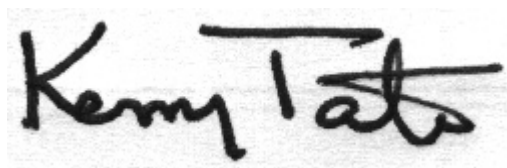
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 01-APR-2020 14:59

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: 03/18/2020 13:30

Field ID: G3NW0444

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2166972	EPA 8321B	2,4-D	0.0026	I	ug/L	P381156	
		Acesulfame K**	0.10	U	ug/L	P380955	
		AMPA**	0.10	U	ug/L	P380955	
		Sucralose**	0.010	U	ug/L	P380955	
		Acetaminophen**	0.0080	U	ug/L	P381156	
		Acetamiprid**	0.0020	U	ug/L	P381156	
		Endothall**	0.25	U	ug/L	P380955	
		Glufosinate**	0.10	U	ug/L	P380955	
		Glyphosate**	0.10	U	ug/L	P380955	
		Afidopyropen**	0.0020	UJ	ug/L	P381156	
		Bentazon	8.0E-04	U	ug/L	P381156	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P381156	
		Carbamazepine**	8.0E-04	U	ug/L	P381156	
		Clothianidin**	0.0020	U	ug/L	P381156	
		Dinotefuran**	0.0020	U	ug/L	P381156	
		Diuron	0.0020	U	ug/L	P381156	
		Fenuron	0.016	U	ug/L	P381156	
		Fluridone**	8.0E-04	U	ug/L	P381156	
		Imazapyr**	0.0059	I	ug/L	P381156	
		Hydrocodone**	0.0020	U	ug/L	P381156	
		Ibuprofen**	0.020	U	ug/L	P381156	
		Imidacloprid	0.0020	U	ug/L	P381156	
		Linuron	0.0040	U	ug/L	P381156	
		Mandestrobin**	0.0020	UJ	ug/L	P381156	
		MCPP	0.0020	U	ug/L	P381156	
		Naproxen**	0.0080	U	ug/L	P381156	
		Primidone**	0.0040	U	ug/L	P381156	
		Pyraclostrobin**	0.0020	U	ug/L	P381156	
		Thiamethoxam**	0.0020	U	ug/L	P381156	
		Tolfenpyrad**	0.0020	U	ug/L	P381156	
		Triclopyr**	0.0040	U	ug/L	P381156	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380955

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: P381156

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: P380955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	111		P	40 - 150
AMPA	99.1		P	40 - 150
Endothall	85.9		P	40 - 150
Glufosinate	118		P	40 - 150
Glyphosate	125		P	40 - 140
Sucralose	99.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P381156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	115		P	30 - 160
Acetaminophen	86.2		P	30 - 160
Acetamiprid	98.6		P	30 - 160
Afidopyropen	110		P	30 - 160
Bentazon	87.3		P	30 - 160
Benzovindiflupyr	82.6		P	30 - 160
Carbamazepine	118		P	30 - 160
Clothianidin	106		P	30 - 160
Dinotefuran	94.5		P	30 - 160
Diuron	105		P	30 - 160
Fenuron	110		P	30 - 160
Fluridone	88.9		P	30 - 160
Hydrocodone	94.4		P	30 - 160
Ibuprofen	89.9		P	30 - 160
Imazapyr	87.2		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	80.1		P	30 - 160
Mandestrobin	89.2		P	30 - 160
MCPP	137		P	30 - 160
Naproxen	71.5		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	76.9		P	30 - 160
Thiamethoxam	104		P	30 - 160
Tolfenpyrad	51.8		P	30 - 160
Triclopyr	104		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166972	Acesulfame K	140	139	P/P	40 - 150
2166972	AMPA	103	94.4	P/P	40 - 150
2166972	Endothall	101	97.2	P/P	40 - 150
2166972	Glufosinate	114	106	P/P	40 - 150
2166972	Glyphosate	113	117	P/P	40 - 140
2166972	Sucralose	87.8	92.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P381156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2166972	2,4-D	128	133	P/P	30 - 160
2166972	Acetaminophen	103	107	P/P	30 - 160
2166972	Acetamiprid	105	116	P/P	30 - 160
2166972	Afidopyropen	110	114	P/P	30 - 160
2166972	Bentazon	64.4	64.4	P/P	30 - 160
2166972	Benzovindiflupyr	83.4	77.5	P/P	30 - 160
2166972	Carbamazepine	105	102	P/P	30 - 160
2166972	Clothianidin	121	125	P/P	30 - 160
2166972	Dinotefuran	140	123	P/P	30 - 160
2166972	Diuron	96.7	97.9	P/P	30 - 160
2166972	Fenuron	81.4	85.4	P/P	30 - 160
2166972	Fluridone	88.0	86.0	P/P	30 - 160
2166972	Hydrocodone	122	118	P/P	30 - 160
2166972	Ibuprofen	86.1	78.5	P/P	30 - 160
2166972	Imazapyr	121	119	P/P	30 - 160
2166972	Imidacloprid	159	159	P/P	30 - 160
2166972	Linuron	78.2	77.0	P/P	30 - 160
2166972	Mandestrobin	86.5	86.6	P/P	30 - 160
2166972	MCP	143	147	P/P	30 - 160
2166972	Naproxen	73.9	89.0	P/P	30 - 160
2166972	Primidone	120	110	P/P	30 - 160
2166972	Pyraclostrobin	87.9	85.6	P/P	30 - 160
2166972	Thiamethoxam	157	160	P/P	30 - 160
2166972	Tolfenpyrad	55.1	56.8	P/P	30 - 160
2166972	Triclopyr	112	117	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166972	Acesulfame K	1.00	Spike	P	0 - 30
2166972	AMPA	9.02	Spike	P	0 - 30
2166972	Endothall	4.27	Spike	P	0 - 30
2166972	Glufosinate	6.73	Spike	P	0 - 30
2166972	Glyphosate	3.24	Spike	P	0 - 30
2166972	Sucralose	5.24	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P381156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2166972	2,4-D	3.67	Spike	P	0 - 30
2166972	Acetaminophen	4.10	Spike	P	0 - 30
2166972	Acetamiprid	9.98	Spike	P	0 - 30
2166972	Afidopyropen	3.77	Spike	P	0 - 30
2166972	Bentazon	0.0481	Spike	P	0 - 30
2166972	Benzovindiflupyr	7.35	Spike	P	0 - 30
2166972	Carbamazepine	3.35	Spike	P	0 - 30
2166972	Clothianidin	3.79	Spike	P	0 - 30
2166972	Dinotefuran	12.8	Spike	P	0 - 30
2166972	Diuron	1.20	Spike	P	0 - 30
2166972	Fenuron	4.84	Spike	P	0 - 30
2166972	Fluridone	2.35	Spike	P	0 - 30
2166972	Hydrocodone	2.96	Spike	P	0 - 30
2166972	Ibuprofen	9.28	Spike	P	0 - 30
2166972	Imazapyr	2.17	Spike	P	0 - 30
2166972	Imidacloprid	0.210	Spike	P	0 - 30
2166972	Linuron	1.58	Spike	P	0 - 30
2166972	Mandestrobin	0.120	Spike	P	0 - 30
2166972	MCPP	2.51	Spike	P	0 - 30
2166972	Naproxen	18.6	Spike	P	0 - 30
2166972	Primidone	8.45	Spike	P	0 - 30
2166972	Pyraclostrobin	2.56	Spike	P	0 - 30
2166972	Thiamethoxam	1.78	Spike	P	0 - 30
2166972	Tolfenpyrad	2.91	Spike	P	0 - 30
2166972	Triclopyr	4.17	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2166972
Field Sample ID: G3NW0444

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	117	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.9	P	30 - 160
EPA 8321B	Diuron-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	78.8	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	86.9	P	30 - 200
EPA 8321B	Sucralose-d6	86.9	P	30 - 200

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A98352
Included Lab Sample IDs: 2166972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	120	125	P/P	60 - 160
Endothall	106	106	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A98362
Included Lab Sample IDs: 2166972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	119	108	P/P	40 - 200
Glufosinate	126	118	P/P	40 - 200
Glyphosate	140	130	P/P	40 - 200

Reference Method: EPA 8321B
Run ID: A98487
Included Lab Sample IDs: 2166972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	82.5	95.0	P/P	40 - 200

Reference Method: EPA 8321B
Run ID: A98518
Included Lab Sample IDs: 2166972

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.8	98.0	P/P	50 - 150
Acetaminophen	103	99.4	P/P	60 - 160
Acetamiprid	107	106	P/P	50 - 150
Afidopyropen	109	99.7	P/P	50 - 150
Bentazon	109	116	P/P	50 - 160
Benzovindiflupyr	104	106	P/P	50 - 150
Carbamazepine	104	104	P/P	60 - 150
Clothianidin	103	103	P/P	60 - 150
Dinotefuran	103	106	P/P	50 - 150
Diuron	113	109	P/P	60 - 150
Fenuron	109	112	P/P	60 - 150
Fluridone	111	109	P/P	60 - 160
Hydrocodone	112	113	P/P	60 - 150
Ibuprofen	85.2	86.5	P/P	50 - 160
Imazapyr	107	93.1	P/P	50 - 150
Imidacloprid	98.2	103	P/P	60 - 150
Linuron	101	105	P/P	60 - 150
Mandestrobin	102	101	P/P	50 - 150
MCPP	104	102	P/P	50 - 150
Naproxen	78.8	89.8	P/P	50 - 160
Primidone	99.5	105	P/P	60 - 150
Pyraclostrobin	107	103	P/P	60 - 150
Thiamethoxam	105	110	P/P	50 - 150
Tolfenpyrad	99.0	102	P/P	60 - 150
Triclopyr	101	103	P/P	50 - 150

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	115	128	133		3.67
	Acesulfame K	111	140	139		1.00
	Acetaminophen	86.2	103	107		4.10
	Acetamiprid	98.6	105	116		9.98
	Afidopyropen	110	110	114		3.77
	AMPA	99.1	103	94.4		9.02
	Bentazon	87.3	64.4	64.4		0.0481
	Benzovindiflupyr	82.6	83.4	77.5		7.35
	Carbamazepine	118	105	102		3.35
	Clothianidin	106	121	125		3.79
	Dinotefuran	94.5	140	123		12.8
	Diuron	105	96.7	97.9		1.20
	Endothall	85.9	101	97.2		4.27
	Fenuron	110	81.4	85.4		4.84
	Fluridone	88.9	88.0	86.0		2.35
	Glufosinate	118	114	106		6.73
	Glyphosate	125	113	117		3.24
	Hydrocodone	94.4	122	118		2.96
	Ibuprofen	89.9	86.1	78.5		9.28
	Imazapyr	87.2	121	119		2.17
	Imidacloprid	107	159	159		0.210
	Linuron	80.1	78.2	77.0		1.58
	Mandestrobin	89.2	86.5	86.6		0.120
	MCPP	137	143	147		2.51
	Naproxen	71.5	73.9	89.0		18.6
	Primidone	103	120	110		8.45
	Pyraclostrobin	76.9	87.9	85.6		2.56
	Sucralose	99.0	87.8	92.5		5.24
	Thiamethoxam	104	157	160		1.78
	Tolfenpyrad	51.8	55.1	56.8		2.91
	Triclopyr	104	112	117		4.17

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2166972
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2166972

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	03/19/2020	03/20/2020 15:30	Mohammad Ghaffari	03/20/2020 18:47	Mohammad Ghaffari	2166972
	03/19/2020	03/20/2020 15:30	Mohammad Ghaffari	03/22/2020 18:54	Mohammad Ghaffari	2166972
	03/19/2020	03/20/2020 15:30	Mohammad Ghaffari	03/27/2020 09:15	Mohammad Ghaffari	2166972
	03/19/2020	03/24/2020 09:00	Hoor Shaik	03/26/2020 01:42	Mohammad Ghaffari	2166972