

Chemical Analysis Report

NW-DIST-2020-05-27-02

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

Event Description: **Laurel Hill Run**
Request ID: **RQ-2020-05-25-23**
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: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 05-JUN-2020 11:03

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: Pond Creek in McCloud Bay upstream of Hwy 393 **Collection Date/Time: 05/26/2020 12:00**

Field ID: G4NW0349

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2173323	EPA 8321B	2,4-D	0.0020	U	ug/L	P382647	
		Acesulfame K**	0.10	U	ug/L	P382632	
		AMPA**	0.10	U	ug/L	P382632	
		Sucralose**	0.16		ug/L	P382632	
		Acetaminophen**	0.0080	U	ug/L	P382647	
		Acetamiprid**	0.0020	U	ug/L	P382647	
		Endothall**	0.25	U	ug/L	P382632	
		Glufosinate**	0.10	U	ug/L	P382632	
		Glyphosate**	0.10	U	ug/L	P382632	
		Afidopyropen**	0.0020	U	ug/L	P382647	
		Bentazon	8.0E-04	U	ug/L	P382647	
		Benzovindiflupyr**	0.0020	U	ug/L	P382647	
		Carbamazepine**	0.0013	I	ug/L	P382647	
		Clothianidin**	0.0020	U	ug/L	P382647	
		Dinotefuran**	0.0020	U	ug/L	P382647	
		Diuron	0.0021	I	ug/L	P382647	
		Fenuron	0.016	U	ug/L	P382647	
		Fluridone**	8.0E-04	U	ug/L	P382647	
		Imazapyr**	0.0040	U	ug/L	P382647	
		Hydrocodone**	0.0020	U	ug/L	P382647	
		Ibuprofen**	0.020	U	ug/L	P382647	
		Imidacloprid	0.0021	I J	ug/L	P382647	MS
		Linuron	0.0040	U	ug/L	P382647	
		Mandestrobin**	0.0020	U	ug/L	P382647	
		MCPP	0.0020	U	ug/L	P382647	
		Naproxen**	0.0080	U	ug/L	P382647	
		Primidone**	0.0040	U	ug/L	P382647	
		Pyraclostrobin**	0.0020	U	ug/L	P382647	
		Thiamethoxam**	0.0020	U	ug/L	P382647	
		Tolfenpyrad**	0.0020	U	ug/L	P382647	
		Triclopyr**	0.0040	U	ug/L	P382647	

Ref. Method and Comment:

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P382632

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: P382647

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: P382632

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	93.8		P	40 - 150
AMPA	91.1		P	40 - 150
Endothall	100		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	111		P	40 - 140
Sucralose	101		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P382647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	116		P	30 - 160
Acetaminophen	84.4		P	30 - 160
Acetamiprid	83.0		P	30 - 160
Afidopyropen	82.5		P	30 - 160
Bentazon	63.2		P	30 - 160
Benzovindiflupyr	83.3		P	30 - 160
Carbamazepine	73.6		P	30 - 160
Clothianidin	91.9		P	30 - 160
Dinotefuran	89.6		P	30 - 160
Diuron	60.7		P	30 - 160
Fenuron	93.7		P	30 - 160
Fluridone	90.8		P	30 - 160
Hydrocodone	82.5		P	30 - 160
Ibuprofen	98.0		P	30 - 160
Imazapyr	76.1		P	30 - 160
Imidacloprid	102		P	30 - 160
Linuron	63.0		P	30 - 160
Mandestrobin	98.7		P	30 - 160
MCPP	130		P	30 - 160
Naproxen	97.3		P	30 - 160
Primidone	93.1		P	30 - 160
Pyraclostrobin	89.1		P	30 - 160
Thiamethoxam	82.9		P	30 - 160
Tolfenpyrad	56.2		P	30 - 160
Triclopyr	92.8		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P382632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2173323	Acesulfame K	107	114	P/P	40 - 150
2173323	AMPA	110	116	P/P	40 - 150
2173323	Endothall	106	118	P/P	40 - 150
2173323	Glufosinate	105	95.5	P/P	40 - 150
2173323	Glyphosate	76.1	88.8	P/P	40 - 140
2173323	Sucralose	83.8	85.7	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P382647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2173323	2,4-D	126	127	P/P	30 - 160
2173323	Acetaminophen	101	99.2	P/P	30 - 160
2173323	Acetamiprid	80.4	83.6	P/P	30 - 160
2173323	Afidopyropen	87.3	87.5	P/P	30 - 160
2173323	Bentazon	59.0	56.8	P/P	30 - 160
2173323	Benzovindiflupyr	79.2	79.4	P/P	30 - 160
2173323	Carbamazepine	72.1	69.5	P/P	30 - 160
2173323	Clothianidin	114	107	P/P	30 - 160
2173323	Dinotefuran	109	104	P/P	30 - 160
2173323	Diuron	56.7	54.4	P/P	30 - 160
2173323	Fenuron	81.2	78.6	P/P	30 - 160
2173323	Fluridone	87.4	85.6	P/P	30 - 160
2173323	Hydrocodone	78.8	72.9	P/P	30 - 160
2173323	Ibuprofen	101	89.9	P/P	30 - 160
2173323	Imazapyr	113	112	P/P	30 - 160
2173323	Imidacloprid	161	154	F/P	30 - 160
2173323	Linuron	65.2	65.1	P/P	30 - 160
2173323	Mandestrobin	93.8	90.9	P/P	30 - 160
2173323	MCP	126	126	P/P	30 - 160
2173323	Naproxen	83.1	89.5	P/P	30 - 160
2173323	Primidone	97.3	103	P/P	30 - 160
2173323	Pyraclostrobin	94.3	90.1	P/P	30 - 160
2173323	Thiamethoxam	102	99.0	P/P	30 - 160
2173323	Tolfenpyrad	59.4	61.4	P/P	30 - 160
2173323	Triclopyr	106	103	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P382632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2173323	Acesulfame K	5.85	Spike	P	0 - 30
2173323	AMPA	5.53	Spike	P	0 - 30
2173323	Endothall	10.4	Spike	P	0 - 30
2173323	Glufosinate	9.52	Spike	P	0 - 30
2173323	Glyphosate	15.4	Spike	P	0 - 30
2173323	Sucralose	2.09	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P382647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2173323	2,4-D	1.01	Spike	P	0 - 30
2173323	Acetaminophen	1.83	Spike	P	0 - 30
2173323	Acetamiprid	3.96	Spike	P	0 - 30
2173323	Afidopyropen	0.199	Spike	P	0 - 30
2173323	Bentazon	3.78	Spike	P	0 - 30
2173323	Benzovindiflupyr	0.304	Spike	P	0 - 30
2173323	Carbamazepine	3.42	Spike	P	0 - 30
2173323	Clothianidin	6.50	Spike	P	0 - 30
2173323	Dinotefuran	4.92	Spike	P	0 - 30
2173323	Diuron	3.90	Spike	P	0 - 30
2173323	Fenuron	3.32	Spike	P	0 - 30
2173323	Fluridone	2.10	Spike	P	0 - 30
2173323	Hydrocodone	7.78	Spike	P	0 - 30
2173323	Ibuprofen	11.5	Spike	P	0 - 30
2173323	Imazapyr	1.55	Spike	P	0 - 30
2173323	Imidacloprid	4.71	Spike	P	0 - 30
2173323	Linuron	0.161	Spike	P	0 - 30
2173323	Mandestrobin	3.21	Spike	P	0 - 30
2173323	MCP	0.183	Spike	P	0 - 30
2173323	Naproxen	7.45	Spike	P	0 - 30
2173323	Primidone	5.25	Spike	P	0 - 30
2173323	Pyraclostrobin	4.58	Spike	P	0 - 30
2173323	Thiamethoxam	2.47	Spike	P	0 - 30
2173323	Tolfenpyrad	3.45	Spike	P	0 - 30
2173323	Triclopyr	2.74	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2173323

Field Sample ID: G4NW0349

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	112	P	30 - 160
EPA 8321B	Acetaminophen-d4	93.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.4	P	30 - 160
EPA 8321B	Diuron-d6	57.3	P	30 - 160
EPA 8321B	Endothall-d6	131	P	30 - 160
EPA 8321B	Endothall-d6	131	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	120	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	120	P	30 - 160
EPA 8321B	Ibuprofen-d3	90.4	P	30 - 160
EPA 8321B	Primidone-d5	88.4	P	30 - 160
EPA 8321B	Sucralose-d6	86.2	P	30 - 160
EPA 8321B	Sucralose-d6	86.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A99122
 Included Lab Sample IDs: 2173323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	100	96.7	P/P	30 - 200
Glufosinate	102	97.7	P/P	30 - 200
Glyphosate	109	107	P/P	30 - 200

Reference Method: EPA 8321B
 Run ID: A99129
 Included Lab Sample IDs: 2173323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	97.2	72.5	P/P	30 - 200
Endothall	110	99.8	P/P	30 - 200

Reference Method: EPA 8321B
 Run ID: A99145
 Included Lab Sample IDs: 2173323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.0	99.3	P/P	50 - 150
Acetaminophen	101	105	P/P	60 - 160
Acetamiprid	119	122	P/P	50 - 150
Afidopyropen	121	99.8	P/P	50 - 150
Bentazon	104	102	P/P	50 - 160
Benzovindiflupyr	116	113	P/P	50 - 150
Carbamazepine	110	113	P/P	60 - 150
Clothianidin	91.4	113	P/P	60 - 150
Dinotefuran	96.2	101	P/P	50 - 150
Diuron	101	100	P/P	60 - 160
Fenuron	110	112	P/P	60 - 150
Fluridone	114	109	P/P	60 - 160
Hydrocodone	112	111	P/P	60 - 150
Ibuprofen	102	113	P/P	50 - 160
Imazapyr	83.5	86.3	P/P	50 - 150
Imidacloprid	106	108	P/P	60 - 150
Linuron	106	98.7	P/P	60 - 150
Mandestrobin	118	125	P/P	50 - 150
MCPP	85.4	105	P/P	50 - 150
Naproxen	92.7	123	P/P	50 - 160
Primidone	101	105	P/P	60 - 150
Pyraclostrobin	119	120	P/P	60 - 150
Thiamethoxam	111	112	P/P	50 - 150
Tolfenpyrad	123	122	P/P	60 - 150
Triclopyr	86.4	79.2	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A99164
 Included Lab Sample IDs: 2173323

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.8	92.0	P/P	30 - 200

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	116	126	127		1.01
	Acesulfame K	93.8	107	114		5.85
	Acetaminophen	84.4	101	99.2		1.83
	Acetamiprid	83.0	80.4	83.6		3.96
	Afidopyropen	82.5	87.3	87.5		0.199
	AMPA	91.1	110	116		5.53
	Bentazon	63.2	59.0	56.8		3.78
	Benzovindiflupyr	83.3	79.2	79.4		0.304
	Carbamazepine	73.6	72.1	69.5		3.42
	Clothianidin	91.9	114	107		6.50
	Dinotefuran	89.6	109	104		4.92
	Diuron	60.7	56.7	54.4		3.90
	Endothall	100	106	118		10.4
	Fenuron	93.7	81.2	78.6		3.32
	Fluridone	90.8	87.4	85.6		2.10
	Glufosinate	109	105	95.5		9.52
	Glyphosate	111	76.1	88.8		15.4
	Hydrocodone	82.5	78.8	72.9		7.78
	Ibuprofen	98.0	101	89.9		11.5
	Imazapyr	76.1	113	112		1.55
	Imidacloprid	102	161	154		4.71
	Linuron	63.0	65.2	65.1		0.161
	Mandestrobin	98.7	93.8	90.9		3.21
	MCPP	130	126	126		0.183
	Naproxen	97.3	83.1	89.5		7.45
	Primidone	93.1	97.3	103		5.25
	Pyraclostrobin	89.1	94.3	90.1		4.58
	Sucralose	101	83.8	85.7		2.09
	Thiamethoxam	82.9	102	99.0		2.47
	Tolfenpyrad	56.2	59.4	61.4		3.45
	Triclopyr	92.8	106	103		2.74

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2173323
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2173323

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	05/27/2020	05/29/2020 10:45	Rebecca Ware	05/29/2020 15:58	Rebecca Ware	2173323
	05/27/2020	05/29/2020 10:45	Rebecca Ware	06/01/2020 13:35	Rebecca Ware	2173323
	05/27/2020	05/29/2020 10:45	Rebecca Ware	06/03/2020 21:21	Rebecca Ware	2173323
	05/27/2020	06/02/2020 09:00	Hoor Shaik	06/02/2020 18:27	Juyoung Kim	2173323