

Chemical Analysis Report

CEN-DIST-2019-08-08-02

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

Event Description: **Rose / Spruce / Strickland / UnBranch / Groover**
Request ID: **RQ-2019-03-18-32**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Michael Linger

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 23-AUG-2019 13:15

A handwritten signature in black ink, appearing to read "Colin Wright", is shown 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: Unnamed Branch @ Bear Creek Path

Collection Date/Time: 08/07/2019 10:50

Field ID: G5CE0032

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109765	EPA 8321B	2,4-D	0.0070	I	ug/L	P368497	
		Acesulfame K**	0.10	U	ug/L	P368684	
		AMPA**	0.32	I	ug/L	P368684	
		Sucralose**	0.17		ug/L	P368684	
		Acetaminophen**	0.0080	U	ug/L	P368497	
		Endothall**	0.25	U	ug/L	P368684	
		Acetamiprid**	0.0020	U	ug/L	P368497	
		Glufosinate**	0.10	U	ug/L	P368684	
		Glyphosate**	1.4		ug/L	P368684	
		Afidopyropen**	0.0020	UJ	ug/L	P368497	
		Bentazon	0.29		ug/L	P368497	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P368497	
		Carbamazepine**	8.0E-04	U	ug/L	P368497	
		Clothianidin**	0.011		ug/L	P368497	
		Dinotefuran**	0.0020	U	ug/L	P368497	
		Diuron	0.0026	I	ug/L	P368497	
		Fenuron	0.016	U	ug/L	P368497	
		Fluridone**	0.039		ug/L	P368497	
		Imazapyr**	0.19		ug/L	P368497	MS
		Hydrocodone**	0.0020	U	ug/L	P368497	
		Ibuprofen**	0.020	U	ug/L	P368497	
		Imidacloprid	0.026		ug/L	P368497	MS
		Linuron	0.0040	U	ug/L	P368497	
		Mandestrobin**	0.0020	UJ	ug/L	P368497	
		MCPP	0.0020	U	ug/L	P368497	MS
		Naproxen**	0.0080	U	ug/L	P368497	
		Primidone**	0.0040	U	ug/L	P368497	
		Pyraclostrobin**	0.0020	U	ug/L	P368497	
		Thiamethoxam**	0.0020	U	ug/L	P368497	MS
		Tolfenpyrad**	0.0020	U	ug/L	P368497	
		Triclopyr**	0.0040	U	ug/L	P368497	

Ref. Method and Comment:

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

Sample Location: Unnamed Branch @ 60m upstream of Airport Road

Collection Date/Time: 08/07/2019 11:05

Field ID: G5CE0084

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2109766	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P368684	
		2,4-D	0.0061	IJ	ug/L	P368677	MS
		AMPA**	0.22	I	ug/L	P368684	
		Sucralose**	0.17		ug/L	P368684	
		Acetaminophen**	0.0080	U	ug/L	P368677	
		Endothall**	0.25	U	ug/L	P368684	
		Acetamiprid**	0.0020	U	ug/L	P368677	
		Glufosinate**	0.10	U	ug/L	P368684	
		Glyphosate**	0.88		ug/L	P368684	
		Afidopyropen**	0.0020	UJ	ug/L	P368677	
		Bentazon	0.29		ug/L	P368677	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P368677	
		Carbamazepine**	8.0E-04	U	ug/L	P368677	
		Clothianidin**	0.0077	I	ug/L	P368677	
		Dinotefuran**	0.0020	U	ug/L	P368677	
		Diuron	0.0020	U	ug/L	P368677	
		Fenuron	0.016	U	ug/L	P368677	
		Fluridone**	0.024		ug/L	P368677	
		Imazapyr**	0.23		ug/L	P368677	
		Hydrocodone**	0.0020	U	ug/L	P368677	
		Ibuprofen**	0.020	U	ug/L	P368677	
		Imidacloprid	0.030		ug/L	P368677	
		Linuron	0.0040	U	ug/L	P368677	
		Mandestrobin**	0.0020	UJ	ug/L	P368677	
		MCP	0.0020	UJ	ug/L	P368677	MS
		Naproxen**	0.0080	U	ug/L	P368677	
		Primidone**	0.0040	U	ug/L	P368677	
		Pyraclostrobin**	0.0020	UJ	ug/L	P368677	RPD
		Thiamethoxam**	0.0020	U	ug/L	P368677	
		Tolfenpyrad**	0.0020	UJ	ug/L	P368677	MS, RPD
		Triclopyr**	0.0040	U	ug/L	P368677	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P368497

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

Reference Method: EPA 8321B

Batch ID: P368677

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P368677

Component	Result	Code	Units
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P368684

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P368497

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	101		P	40 - 160
Acetaminophen	76.9		P	30 - 160
Acetamiprid	86.8		P	40 - 160
Afidopyropen	72.0		P	40 - 160
Bentazon	144		P	30 - 160
Benzovindiflupyr	75.7		P	40 - 160
Carbamazepine	94.5		P	40 - 160
Clothianidin	88.9		P	40 - 160
Dinotefuran	88.8		P	40 - 160
Diuron	77.9		P	40 - 160
Fenuron	102		P	40 - 160
Fluridone	86.7		P	40 - 160
Hydrocodone	90.3		P	40 - 160
Ibuprofen	82.9		P	30 - 160
Imazapyr	100		P	40 - 160
Imidacloprid	88.8		P	40 - 160
Linuron	71.3		P	40 - 160
Mandestrobin	85.3		P	40 - 160
MCPP	115		P	40 - 160
Naproxen	99.4		P	40 - 160
Primidone	67.6		P	40 - 160
Pyraclostrobin	72.9		P	30 - 160
Thiamethoxam	86.4		P	40 - 160
Tolfenpyrad	47.3		P	40 - 160
Triclopyr	92.8		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P368677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	110		P	40 - 160
Acetaminophen	77.5		P	30 - 160
Acetamiprid	83.8		P	40 - 160
Afidopyropen	69.5		P	40 - 160
Bentazon	73.4		P	30 - 160
Benzovindiflupyr	84.5		P	40 - 160
Carbamazepine	88.7		P	40 - 160
Clothianidin	85.8		P	40 - 160
Dinotefuran	83.7		P	40 - 160
Diuron	85.7		P	40 - 160
Fenuron	93.7		P	40 - 160
Fluridone	90.0		P	40 - 160
Hydrocodone	88.2		P	40 - 160
Ibuprofen	85.9		P	30 - 160
Imazapyr	88.6		P	40 - 160
Imidacloprid	91.5		P	40 - 160
Linuron	72.1		P	40 - 160
Mandestrobin	90.9		P	40 - 160
MCPP	115		P	40 - 160
Naproxen	90.1		P	40 - 160
Primidone	79.7		P	40 - 160
Pyraclostrobin	86.9		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P368677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	90.7		P	40 - 160
Tolfenpyrad	52.4		P	40 - 160
Triclopyr	83.5		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P368684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	96.2		P	40 - 150
AMPA	95.1		P	40 - 150
Endothall	131		P	40 - 150
Glufosinate	114		P	40 - 150
Glyphosate	101		P	40 - 140
Sucralose	105		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P368497

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109232	2,4-D	143	150	P/P	40 - 160
2109232	Acetaminophen	92.4	95.9	P/P	30 - 160
2109232	Acetamiprid	113	134	P/P	40 - 160
2109232	Afidopyropen	108	119	P/P	40 - 160
2109232	Bentazon	106	106	P/P	30 - 160
2109232	Benzovindiflupyr	87.0	93.9	P/P	40 - 160
2109232	Carbamazepine	111	132	P/P	40 - 160
2109232	Clothianidin	111	130	P/P	40 - 160
2109232	Dinotefuran	123	138	P/P	40 - 160
2109232	Diuron	90.0	103	P/P	40 - 160
2109232	Fenuron	105	124	P/P	40 - 160
2109232	Fluridone	90.6	108	P/P	40 - 160
2109232	Hydrocodone	116	134	P/P	40 - 160
2109232	Ibuprofen	96.6	113	P/P	30 - 160
2109232	Imazapyr	161	181	F/F	40 - 160
2109232	Imidacloprid	155	183	P/F	40 - 160
2109232	Linuron	76.8	91.8	P/P	40 - 160
2109232	Mandestrobin	88.6	108	P/P	40 - 160
2109232	MCCP	169	175	F/F	40 - 160
2109232	Naproxen	90.6	109	P/P	40 - 160
2109232	Primidone	96.8	121	P/P	40 - 160
2109232	Pyraclostrobin	85.8	88.2	P/P	30 - 160
2109232	Thiamethoxam	144	168	P/F	40 - 160
2109232	Tolfenpyrad	51.8	48.4	P/P	40 - 160
2109232	Triclopyr	122	104	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P368677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109766	2,4-D	152	166	P/F	40 - 160
2109766	Acetaminophen	71.2	77.1	P/P	30 - 160
2109766	Acetamiprid	110	90.9	P/P	40 - 160
2109766	Afidopyropen	73.8	80.7	P/P	40 - 160
2109766	Benzovindiflupyr	66.9	79.6	P/P	40 - 160
2109766	Carbamazepine	86.8	84.4	P/P	40 - 160
2109766	Clothianidin	90.2	93.5	P/P	40 - 160
2109766	Dinotefuran	110	111	P/P	40 - 160
2109766	Diuron	77.7	71.2	P/P	40 - 160
2109766	Fenuron	81.6	83.0	P/P	40 - 160
2109766	Fluridone	72.5	90.4	P/P	40 - 160
2109766	Hydrocodone	87.1	92.1	P/P	40 - 160
2109766	Ibuprofen	95.5	102	P/P	30 - 160
2109766	Imidacloprid	160	158	P/P	40 - 160
2109766	Linuron	70.0	66.3	P/P	40 - 160
2109766	Mandestrobin	80.7	76.0	P/P	40 - 160
2109766	MCCP	194	190	F/F	40 - 160
2109766	Naproxen	108	124	P/P	40 - 160
2109766	Primidone	94.0	91.4	P/P	40 - 160
2109766	Pyraclostrobin	59.0	82.5	P/P	30 - 160
2109766	Thiamethoxam	133	129	P/P	40 - 160
2109766	Tolfenpyrad	15.9	41.4	F/P	40 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P368677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109766	Triclopyr	119	125	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P368684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2109647	Acesulfame K	109	101	P/P	40 - 150
2109647	AMPA	116	107	P/P	40 - 150
2109647	Endothall	143	143	P/P	40 - 150
2109647	Glufosinate	123	118	P/P	40 - 150
2109647	Glyphosate	114	126	P/P	40 - 140
2109647	Sucralose	101	105	P/P	40 - 150

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P368497

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109232	2,4-D	5.08	Spike	P	0 - 30
2109232	Acetaminophen	3.74	Spike	P	0 - 30
2109232	Acetamiprid	16.4	Spike	P	0 - 30
2109232	Afidopyropen	9.65	Spike	P	0 - 30
2109232	Bentazon	0.515	Spike	P	0 - 30
2109232	Benzovindiflupyr	7.56	Spike	P	0 - 30
2109232	Carbamazepine	15.8	Spike	P	0 - 30
2109232	Clothianidin	15.6	Spike	P	0 - 30
2109232	Dinotefuran	11.3	Spike	P	0 - 30
2109232	Diuron	12.6	Spike	P	0 - 30
2109232	Fenuron	17.2	Spike	P	0 - 30
2109232	Fluridone	16.4	Spike	P	0 - 30
2109232	Hydrocodone	14.2	Spike	P	0 - 30
2109232	Ibuprofen	15.8	Spike	P	0 - 30
2109232	Imazapyr	11.6	Spike	P	0 - 30
2109232	Imidacloprid	16.0	Spike	P	0 - 30
2109232	Linuron	17.8	Spike	P	0 - 30
2109232	Mandestrobin	19.5	Spike	P	0 - 30
2109232	MCP	3.28	Spike	P	0 - 30
2109232	Naproxen	18.2	Spike	P	0 - 30
2109232	Primidone	22.4	Spike	P	0 - 30
2109232	Pyraclostrobin	2.80	Spike	P	0 - 30
2109232	Thiamethoxam	14.9	Spike	P	0 - 30
2109232	Tolfenpyrad	6.75	Spike	P	0 - 30
2109232	Triclopyr	15.7	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P368677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109766	2,4-D	8.39	Spike	P	0 - 30
2109766	Acetaminophen	8.00	Spike	P	0 - 30
2109766	Acetamiprid	19.4	Spike	P	0 - 30
2109766	Afidopyropen	8.96	Spike	P	0 - 30
2109766	Benzovindiflupyr	17.3	Spike	P	0 - 30
2109766	Carbamazepine	2.72	Spike	P	0 - 30
2109766	Clothianidin	3.19	Spike	P	0 - 30
2109766	Dinotefuran	0.517	Spike	P	0 - 30
2109766	Diuron	8.74	Spike	P	0 - 30
2109766	Fenuron	1.68	Spike	P	0 - 30
2109766	Fluridone	8.89	Spike	P	0 - 30
2109766	Hydrocodone	5.66	Spike	P	0 - 30
2109766	Ibuprofen	6.62	Spike	P	0 - 30
2109766	Imazapyr	15.1	Spike	P	0 - 30
2109766	Imidacloprid	0.687	Spike	P	0 - 30
2109766	Linuron	5.49	Spike	P	0 - 30
2109766	Mandestrobin	6.03	Spike	P	0 - 30
2109766	MCP	2.23	Spike	P	0 - 30
2109766	Naproxen	13.8	Spike	P	0 - 30
2109766	Primidone	2.79	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P368677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109766	Pyraclostrobin	33.2	Spike	F	0 - 30
2109766	Thiamethoxam	3.37	Spike	P	0 - 30
2109766	Tolfenpyrad	89.1	Spike	F	0 - 30
2109766	Triclopyr	4.28	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P368684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2109647	Acesulfame K	7.61	Spike	P	0 - 30
2109647	AMPA	8.20	Spike	P	0 - 30
2109647	Endothall	0.0838	Spike	P	0 - 30
2109647	Glufosinate	3.98	Spike	P	0 - 30
2109647	Glyphosate	10.1	Spike	P	0 - 30
2109647	Sucralose	4.44	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: 2109765
Field Sample ID: G5CE0032

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	139	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.1	P	30 - 160
EPA 8321B	Diuron-d6	68.0	P	30 - 160
EPA 8321B	Endothall-d6	137	P	30 - 160
EPA 8321B	Endothall-d6	137	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	102	P	30 - 160
EPA 8321B	Primidone-d5	86.7	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160
EPA 8321B	Sucralose-d6	96.0	P	30 - 160

Lab Sample ID: 2109766
Field Sample ID: G5CE0084

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	147	P	30 - 160
EPA 8321B	Acetaminophen-d4	79.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.8	P	30 - 160
EPA 8321B	Diuron-d6	77.1	P	30 - 160
EPA 8321B	Endothall-d6	139	P	30 - 160
EPA 8321B	Endothall-d6	139	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	102	P	30 - 160
EPA 8321B	Ibuprofen-d3	107	P	30 - 160
EPA 8321B	Primidone-d5	95.0	P	30 - 160
EPA 8321B	Sucralose-d6	97.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.1	P	30 - 160

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8321B

Run ID: A93483

Included Lab Sample IDs: 2109765, 2109766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	122	P/P	50 - 150
2,4-D	122	106	P/P	50 - 150
Acetaminophen	77.1	76.2	P/P	60 - 160
Acetaminophen	85.7	77.1	P/P	60 - 160
Acetamiprid	86.4	88.2	P/P	50 - 150
Acetamiprid	89.4	86.4	P/P	50 - 150
Afidopyropen	79.5	83.9	P/P	50 - 150
Afidopyropen	83.9	68.1	P/P	50 - 150
Bentazon	63.8	158	P/P	50 - 160
Benzovindiflupyr	84.4	77.8	P/P	50 - 150
Benzovindiflupyr	87.8	84.4	P/P	50 - 150
Carbamazepine	90.2	91.0	P/P	60 - 150
Carbamazepine	91.0	84.3	P/P	60 - 150
Clothianidin	81.6	69.4	P/P	60 - 150
Clothianidin	85.1	81.6	P/P	60 - 150
Dinotefuran	90.5	86.7	P/P	50 - 150
Dinotefuran	94.0	90.5	P/P	50 - 150
Diuron	85.9	88.2	P/P	60 - 150
Diuron	88.2	82.4	P/P	60 - 150
Fenuron	89.9	92.4	P/P	60 - 150
Fenuron	89.9	89.9	P/P	60 - 150
Fluridone	88.7	86.5	P/P	60 - 160
Fluridone	90.0	88.7	P/P	60 - 160
Hydrocodone	86.9	81.9	P/P	60 - 150
Hydrocodone	87.3	86.9	P/P	60 - 150
Ibuprofen	76.8	91.4	P/P	50 - 160
Ibuprofen	91.4	82.2	P/P	50 - 160
Imazapyr	92.9	94.9	P/P	50 - 150
Imazapyr	94.9	118	P/P	50 - 150
Imidacloprid	87.7	87.9	P/P	60 - 150
Imidacloprid	87.9	71.0	P/P	60 - 150
Linuron	82.5	77.0	P/P	60 - 150
Linuron	82.6	82.5	P/P	60 - 150
Mandestrobin	87.0	86.2	P/P	50 - 150
Mandestrobin	87.6	87.0	P/P	50 - 150
MCPP	101	89.9	P/P	50 - 150
MCPP	94.1	101	P/P	50 - 150
Naproxen	109	98.4	P/P	50 - 160
Naproxen	128	109	P/P	50 - 160
Primidone	83.2	87.3	P/P	60 - 150
Primidone	87.3	81.8	P/P	60 - 150
Pyraclostrobin	81.0	74.5	P/P	60 - 150
Pyraclostrobin	81.4	81.0	P/P	60 - 150
Thiamethoxam	92.7	74.6	P/P	50 - 150
Thiamethoxam	94.6	92.7	P/P	50 - 150
Tolfenpyrad	109	112	P/P	60 - 150
Tolfenpyrad	82.9	66.3	P/P	60 - 150
Triclopyr	101	101	P/P	50 - 150
Triclopyr	101	98.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A93508

Included Lab Sample IDs: 2109765, 2109766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	68.0	94.7	P/P	60 - 160
Endothall	136	144	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93512

Included Lab Sample IDs: 2109765, 2109766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	110	110	P/P	60 - 160
Glufosinate	120	121	P/P	60 - 160
Glyphosate	110	127	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A93637

Included Lab Sample IDs: 2109765, 2109766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	96.4	107	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	101	143	150		5.08
	2,4-D	110	152	166		8.39
	Acesulfame K	96.2	109	101		7.61
	Acetaminophen	76.9	92.4	95.9		3.74
	Acetaminophen	77.5	71.2	77.1		8.00
	Acetamiprid	86.8	113	134		16.4
	Acetamiprid	83.8	110	90.9		19.4
	Afidopyropen	72.0	108	119		9.65
	Afidopyropen	69.5	73.8	80.7		8.96
	AMPA	95.1	116	107		8.20
	Bentazon	144	106	106		0.515
	Bentazon	73.4				
	Benzovindiflupyr	75.7	87.0	93.9		7.56
	Benzovindiflupyr	84.5	66.9	79.6		17.3
	Carbamazepine	94.5	111	132		15.8
	Carbamazepine	88.7	86.8	84.4		2.72
	Clothianidin	88.9	111	130		15.6
	Clothianidin	85.8	90.2	93.5		3.19
	Dinotefuran	88.8	123	138		11.3
	Dinotefuran	83.7	110	111		0.517
	Diuron	77.9	90.0	103		12.6
	Diuron	85.7	77.7	71.2		8.74
	Endothall	131	143	143		0.0838
	Fenuron	102	105	124		17.2
	Fenuron	93.7	81.6	83.0		1.68
	Fluridone	86.7	90.6	108		16.4
	Fluridone	90.0	72.5	90.4		8.89
	Glufosinate	114	123	118		3.98
	Glyphosate	101	114	126		10.1
	Hydrocodone	90.3	116	134		14.2
	Hydrocodone	88.2	87.1	92.1		5.66
	Ibuprofen	82.9	96.6	113		15.8
	Ibuprofen	85.9	95.5	102		6.62
	Imazapyr	100	161	181		11.6
	Imazapyr	88.6				15.1
	Imidacloprid	88.8	155	183		16.0
	Imidacloprid	91.5	160	158		0.687
	Linuron	71.3	76.8	91.8		17.8
	Linuron	72.1	70.0	66.3		5.49
	Mandestrobin	85.3	88.6	108		19.5
	Mandestrobin	90.9	80.7	76.0		6.03
	MCPP	115	169	175		3.28
	MCPP	115	194	190		2.23
	Naproxen	99.4	90.6	109		18.2
	Naproxen	90.1	108	124		13.8
	Primidone	67.6	96.8	121		22.4
	Primidone	79.7	94.0	91.4		2.79
	Pyraclostrobin	72.9	85.8	88.2		2.80
	Pyraclostrobin	86.9	59.0	82.5		33.2
	Sucralose	105	101	105		4.44
	Thiamethoxam	86.4	144	168		14.9
	Thiamethoxam	90.7	133	129		3.37
	Tolfenpyrad	47.3	51.8	48.4		6.75
	Tolfenpyrad	52.4	15.9	41.4		89.1

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
EPA 8321B	Triclopyr	92.8	122	104		15.7
	Triclopyr	83.5	119	125		4.28

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2109765, 2109766
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2109765, 2109766

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/13/2019 13:23	Rebecca Ware	2109765
	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/13/2019 13:37	Rebecca Ware	2109766
	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/13/2019 19:42	Rebecca Ware	2109765
	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/13/2019 19:52	Rebecca Ware	2109766
	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/19/2019 20:59	Rebecca Ware	2109765
	08/08/2019	08/08/2019 15:30	Rebecca Ware	08/19/2019 21:11	Rebecca Ware	2109766
	08/08/2019	08/09/2019 12:00	Fe-Val Siddell	08/14/2019 07:52	Juyoung Kim	2109765
	08/08/2019	08/09/2019 12:00	Fe-Val Siddell	08/14/2019 14:13	Juyoung Kim	2109765
	08/08/2019	08/12/2019 10:00	Fe-Val Siddell	08/14/2019 11:20	Juyoung Kim	2109766
	08/08/2019	08/12/2019 10:00	Fe-Val Siddell	08/14/2019 15:22	Juyoung Kim	2109766