

Chemical Analysis Report

SO-DIST-2019-09-24-02

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

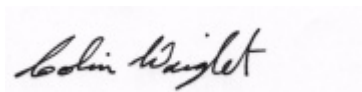
Event Description: **Collier County Tracer Study**
Request ID: **RQ-2019-03-25-23**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
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FLDEP South District Office
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Certified by: Colin Wright, Program Administrator

Date Certified: 02-OCT-2019 16:19

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: SAPPHIRE LAKE

Collection Date/Time: 09/23/2019 11:51

Field ID: SAPPHIRE LAKE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122018	EPA 8321B	2,4-D	0.52		ug/L	P371346	
		Acesulfame K**	0.10	U	ug/L	P371269	
		AMPA**	0.69		ug/L	P371269	
		Sucralose**	1.3		ug/L	P371269	
		Acetaminophen**	0.0080	U	ug/L	P371346	
		Endothall**	0.25	U	ug/L	P371269	
		Glufosinate**	0.10	U	ug/L	P371269	
		Glyphosate**	0.10	U	ug/L	P371269	
		Bentazon	0.097		ug/L	P371346	
		Carbamazepine**	0.013		ug/L	P371346	
		Diuron	0.0020	U	ug/L	P371346	
		Fenuron	0.016	U	ug/L	P371346	
		Fluridone**	0.20		ug/L	P371346	
		Imazapyr**	0.15		ug/L	P371346	
		Hydrocodone**	0.0020	U	ug/L	P371346	
		Ibuprofen**	0.020	U	ug/L	P371346	
		Imidacloprid	0.0094		ug/L	P371346	MS
		Linuron	0.0040	U	ug/L	P371346	
		MCPP	0.0020	U	ug/L	P371346	MS
		Naproxen**	0.0080	U	ug/L	P371346	
		Primidone**	0.0040	U	ug/L	P371346	
		Pyraclostrobin**	0.0020	U	ug/L	P371346	
		Triclopyr**	0.0040	U	ug/L	P371346	

Ref. Method and Comment:

EPA 8321B: MS accuracy for bentazon and fluridone could not be assessed due to high concentration of parameter in the spiked sample. The surrogate 2,4-D-d3 recovery could not be assessed due to an elevated level of 2,4-D in the sample matrix.

Sample Location: HORSE CREEK

Collection Date/Time: 09/23/2019 12:57

Field ID: HORSE CREEK

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122019	EPA 8321B	2,4-D	0.096		ug/L	P371346	
		Acesulfame K**	0.10	U	ug/L	P371269	
		AMPA**	0.37	I	ug/L	P371269	
		Sucralose**	0.22		ug/L	P371269	
		Acetaminophen**	0.0080	U	ug/L	P371346	
		Endothall**	0.25	U	ug/L	P371269	
		Glufosinate**	0.10	U	ug/L	P371269	
		Glyphosate**	0.10	U	ug/L	P371269	
		Bentazon	0.43		ug/L	P371346	
		Carbamazepine**	0.0012	I	ug/L	P371346	
		Diuron	0.0020	I	ug/L	P371346	
		Fenuron	0.016	U	ug/L	P371346	
		Fluridone**	0.070		ug/L	P371346	
		Imazapyr**	0.52		ug/L	P371346	
		Hydrocodone**	0.0020	U	ug/L	P371346	
		Ibuprofen**	0.020	U	ug/L	P371346	
		Imidacloprid	0.056		ug/L	P371346	MS
		Linuron	0.0040	U	ug/L	P371346	
		MCPP	0.011		ug/L	P371346	MS
		Naproxen**	0.0080	U	ug/L	P371346	
		Primidone**	0.0040	U	ug/L	P371346	
		Pyraclostrobin**	0.0020	U	ug/L	P371346	
		Triclopyr**	0.0040	U	ug/L	P371346	

Ref. Method and Comment:

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

Sample Location: COACH HOUSE

Collection Date/Time: 09/23/2019 13:33

Field ID: COACH HOUSE

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122020	EPA 8321B	2,4-D	0.011		ug/L	P371346	
		Acesulfame K**	0.10	U	ug/L	P371269	
		AMPA**	0.22	I	ug/L	P371269	
		Sucralose**	0.29		ug/L	P371269	
		Acetaminophen**	0.0080	U	ug/L	P371346	
		Endothall**	0.25	U	ug/L	P371269	
		Glufosinate**	0.10	U	ug/L	P371269	
		Glyphosate**	0.10	U	ug/L	P371269	
		Bentazon	0.10		ug/L	P371346	
		Carbamazepine**	8.0E-04	U	ug/L	P371346	
		Diuron	0.0020	U	ug/L	P371346	
		Fenuron	0.016	U	ug/L	P371346	
		Fluridone**	0.017		ug/L	P371346	
		Imazapyr**	0.017		ug/L	P371346	
		Hydrocodone**	0.0020	U	ug/L	P371346	
		Ibuprofen**	0.020	U	ug/L	P371346	
		Imidacloprid	0.0020	U	ug/L	P371346	MS
		Linuron	0.0040	U	ug/L	P371346	
		MCPP	0.0020	U	ug/L	P371346	MS
		Naproxen**	0.0080	U	ug/L	P371346	
		Primidone**	0.0040	U	ug/L	P371346	
		Pyraclostrobin**	0.0020	U	ug/L	P371346	
		Triclopyr**	0.0040	U	ug/L	P371346	

Ref. Method and Comment:

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

Sample Location: ROCK CREEK

Collection Date/Time: 09/23/2019 13:56

Field ID: ROCK CREEK

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2122021	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P371269	
		2,4-D	0.0056	I	ug/L	P371346	
		AMPA**	1.0	U	ug/L	P371269	
		Sucralose**	0.62		ug/L	P371269	
		Acetaminophen**	0.0080	U	ug/L	P371346	
		Endothall**	0.25	U	ug/L	P371269	
		Glufosinate**	1.0	U	ug/L	P371269	
		Glyphosate**	1.0	U	ug/L	P371269	
		Bentazon	0.10		ug/L	P371346	
		Carbamazepine**	10E-04	I	ug/L	P371346	
		Diuron	0.0020	U	ug/L	P371346	
		Fenuron	0.016	U	ug/L	P371346	
		Fluridone**	0.024		ug/L	P371346	
		Imazapyr**	0.067		ug/L	P371346	
		Hydrocodone**	0.0020	U	ug/L	P371346	
		Ibuprofen**	0.020	U	ug/L	P371346	
		Imidacloprid	0.010		ug/L	P371346	MS
		Linuron	0.0040	U	ug/L	P371346	
		MCPP	0.0020	U	ug/L	P371346	MS
		Naproxen**	0.0080	U	ug/L	P371346	
		Primidone**	0.0040	U	ug/L	P371346	
		Pyraclostrobin**	0.0020	U	ug/L	P371346	
		Triclopyr**	0.0040	U	ug/L	P371346	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 8321B: MS accuracy for bentazon and fluridone 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: P371269

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: P371346

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	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
MCPP	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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P371269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.8		P	40 - 150
AMPA	97.3		P	40 - 150
Endothall	81.4		P	40 - 150
Glufosinate	82.4		P	40 - 150
Glyphosate	107		P	40 - 140
Sucralose	111		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P371346

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	159		P	40 - 160
Acetaminophen	96.0		P	30 - 160
Bentazon	146		P	30 - 160
Carbamazepine	103		P	40 - 160
Diuron	91.9		P	40 - 160
Fenuron	107		P	40 - 160
Fluridone	88.1		P	40 - 160
Hydrocodone	92.2		P	40 - 160
Ibuprofen	88.5		P	30 - 160
Imazapyr	107		P	40 - 160
Imidacloprid	115		P	40 - 160
Linuron	73.4		P	40 - 160
MCPP	148		P	40 - 160
Naproxen	75.0		P	40 - 160
Primidone	82.1		P	40 - 160
Pyraclostrobin	83.9		P	30 - 160
Triclopyr	134		P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P371269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121760	Acesulfame K	75.8	76.2	P/P	40 - 150
2121760	AMPA	80.2	82.4	P/P	40 - 150
2121760	Endothall	101	103	P/P	40 - 150
2121760	Glufosinate	93.1	82.1	P/P	40 - 150
2121760	Glyphosate	110	90.9	P/P	40 - 140
2121760	Sucralose	129	138	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P371346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121892	2,4-D	159	159	P/P	40 - 160
2121892	Acetaminophen	88.8	96.8	P/P	30 - 160
2121892	Carbamazepine	109	111	P/P	40 - 160
2121892	Diuron	95.1	76.6	P/P	40 - 160
2121892	Fenuron	98.2	100	P/P	40 - 160
2121892	Hydrocodone	104	105	P/P	40 - 160
2121892	Ibuprofen	95.0	89.9	P/P	30 - 160
2121892	Imazapyr	137	127	P/P	40 - 160
2121892	Imidacloprid	194	165	F/F	40 - 160
2121892	Linuron	72.1	68.5	P/P	40 - 160
2121892	MCPP	172	150	F/P	40 - 160
2121892	Naproxen	88.8	86.9	P/P	40 - 160
2121892	Primidone	104	103	P/P	40 - 160
2121892	Pyraclostrobin	93.4	92.2	P/P	30 - 160
2121892	Triclopyr	134	129	P/P	30 - 160

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P371269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121760	Acesulfame K	0.501	Spike	P	0 - 30
2121760	AMPA	1.20	Spike	P	0 - 30
2121760	Endothall	1.68	Spike	P	0 - 30
2121760	Glufosinate	12.6	Spike	P	0 - 30
2121760	Glyphosate	8.56	Spike	P	0 - 30
2121760	Sucralose	6.73	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P371346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121892	2,4-D	0.180	Spike	P	0 - 30
2121892	Acetaminophen	8.64	Spike	P	0 - 30
2121892	Bentazon	1.96	Spike	P	0 - 30
2121892	Carbamazepine	2.17	Spike	P	0 - 30
2121892	Diuron	20.3	Spike	P	0 - 30
2121892	Fenuron	1.39	Spike	P	0 - 30
2121892	Fluridone	3.47	Spike	P	0 - 30
2121892	Hydrocodone	0.552	Spike	P	0 - 30
2121892	Ibuprofen	5.53	Spike	P	0 - 30
2121892	Imazapyr	6.19	Spike	P	0 - 30
2121892	Imidacloprid	11.8	Spike	P	0 - 30
2121892	Linuron	5.11	Spike	P	0 - 30
2121892	MCP	13.9	Spike	P	0 - 30
2121892	Naproxen	2.15	Spike	P	0 - 30
2121892	Primidone	1.51	Spike	P	0 - 30
2121892	Pyraclostrobin	1.29	Spike	P	0 - 30
2121892	Triclopyr	4.26	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: 2122018
Field Sample ID: SAPPHIRE LAKE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	80.5	P	30 - 160
EPA 8321B	Bentazon-d7	85.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	105	P	30 - 160
EPA 8321B	Diuron-d6	90.2	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Endothall-d6	114	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	96.8	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	140	P	30 - 160
EPA 8321B	Sucralose-d6	140	P	30 - 160

Lab Sample ID: 2122019
Field Sample ID: HORSE CREEK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	149	P	30 - 160
EPA 8321B	Acetaminophen-d4	76.1	P	30 - 160
EPA 8321B	Bentazon-d7	75.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.6	P	30 - 160
EPA 8321B	Diuron-d6	83.3	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	76.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.4	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	42.7	P	30 - 160
EPA 8321B	Sucralose-d6	42.7	P	30 - 160

Lab Sample ID: 2122020
Field Sample ID: COACH HOUSE

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	145	P	30 - 160
EPA 8321B	Acetaminophen-d4	74.4	P	30 - 160
EPA 8321B	Bentazon-d7	72.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	88.2	P	30 - 160
EPA 8321B	Diuron-d6	81.7	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.2	P	30 - 160
EPA 8321B	Primidone-d5	100	P	30 - 160
EPA 8321B	Sucralose-d6	53.3	P	30 - 160
EPA 8321B	Sucralose-d6	53.3	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2122021
Field Sample ID: ROCK CREEK

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	143	P	30 - 160
EPA 8321B	Acetaminophen-d4	68.7	P	30 - 160
EPA 8321B	Bentazon-d7	78.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.8	P	30 - 160
EPA 8321B	Diuron-d6	81.2	P	30 - 160
EPA 8321B	Endothall-d6	72.4	P	30 - 160
EPA 8321B	Endothall-d6	72.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	62.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	62.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.9	P	30 - 160
EPA 8321B	Primidone-d5	88.9	P	30 - 160
EPA 8321B	Sucralose-d6	149	P	30 - 160
EPA 8321B	Sucralose-d6	149	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A94527

Included Lab Sample IDs: 2122018, 2122019, 2122020, 2122021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	97.1	P/P	60 - 160
AMPA	97.1	93.8	P/P	60 - 160
Glufosinate	82.5	94.9	P/P	60 - 160
Glufosinate	95.1	82.5	P/P	60 - 160
Glyphosate	93.1	96.2	P/P	60 - 160
Glyphosate	96.2	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94549

Included Lab Sample IDs: 2122018, 2122019, 2122020, 2122021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	95.0	77.0	P/P	60 - 160
Acesulfame K	98.5	95.0	P/P	60 - 160
Endothall	104	96.8	P/P	60 - 160
Endothall	96.8	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94586

Included Lab Sample IDs: 2122018, 2122019, 2122020, 2122021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	111	P/P	60 - 160
Sucralose	111	105	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A94609

Included Lab Sample IDs: 2122018, 2122019, 2122020, 2122021

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	115	123	P/P	50 - 150
Acetaminophen	125	129	P/P	60 - 160
Bentazon	115	141	P/P	50 - 160
Bentazon	131	129	P/P	50 - 160
Carbamazepine	116	112	P/P	60 - 150
Diuron	111	114	P/P	60 - 150
Fenuron	120	121	P/P	60 - 150
Fluridone	101	102	P/P	60 - 160
Hydrocodone	111	107	P/P	60 - 150
Ibuprofen	88.2	104	P/P	50 - 160
Imazapyr	116	124	P/P	50 - 150
Imidacloprid	120	122	P/P	60 - 150
Linuron	101	104	P/P	60 - 150
MCPP	127	128	P/P	50 - 150
Naproxen	123	110	P/P	50 - 160
Primidone	112	116	P/P	60 - 150
Pyraclostrobin	108	103	P/P	60 - 150
Triclopyr	117	115	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 LCS	SMP	MS
EPA 8321B	2,4-D	159	159	159			0.180
	Acesulfame K	87.8	75.8	76.2			0.501
	Acetaminophen	96.0	88.8	96.8			8.64
	AMPA	97.3	80.2	82.4			1.20
	Bentazon	146					1.96
	Carbamazepine	103	109	111			2.17
	Diuron	91.9	95.1	76.6			20.3
	Endothall	81.4	101	103			1.68
	Fenuron	107	98.2	100			1.39
	Fluridone	88.1					3.47
	Glufosinate	82.4	93.1	82.1			12.6
	Glyphosate	107	110	90.9			8.56
	Hydrocodone	92.2	104	105			0.552
	Ibuprofen	88.5	95.0	89.9			5.53
	Imazapyr	107	137	127			6.19
	Imidacloprid	115	194	165			11.8
	Linuron	73.4	72.1	68.5			5.11
	MCPP	148	172	150			13.9
	Naproxen	75.0	88.8	86.9			2.15
	Primidone	82.1	104	103			1.51
	Pyraclostrobin	83.9	93.4	92.2			1.29
	Sucralose	111	129	138			6.73
	Triclopyr	134	134	129			4.26

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2122018, 2122019, 2122020, 2122021
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2122018, 2122019, 2122020, 2122021

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/25/2019 16:23	Rebecca Ware	2122018
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/25/2019 16:34	Rebecca Ware	2122019
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/25/2019 16:55	Rebecca Ware	2122020
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/25/2019 17:59	Rebecca Ware	2122021
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/26/2019 18:29	Rebecca Ware	2122018
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/26/2019 18:43	Rebecca Ware	2122019
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/26/2019 19:10	Rebecca Ware	2122020
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/26/2019 19:24	Rebecca Ware	2122021
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 22:45	Rebecca Ware	2122018
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 22:57	Rebecca Ware	2122019
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 23:20	Rebecca Ware	2122020
	09/24/2019	09/25/2019 11:30	Rebecca Ware	09/27/2019 23:32	Rebecca Ware	2122021
	09/24/2019	09/27/2019 09:00	Hoor Shaik	09/27/2019 21:19	Juyoung Kim	2122018
	09/24/2019	09/27/2019 09:00	Hoor Shaik	09/27/2019 21:53	Juyoung Kim	2122019
	09/24/2019	09/27/2019 09:00	Hoor Shaik	09/27/2019 22:28	Juyoung Kim	2122020
	09/24/2019	09/27/2019 09:00	Hoor Shaik	09/27/2019 23:02	Juyoung Kim	2122021
	09/24/2019	09/27/2019 09:00	Hoor Shaik	09/30/2019 09:46	Juyoung Kim	2122019