

Chemical Analysis Report

SO-DIST-2021-06-30-01

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

Event Description: **2021 SMP: Lee County Sampling**
Request ID: **RQ-2021-06-14-49**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
Attn: William Mullen

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: Liang Lin, Environmental Administrator

Date Certified: 14-JUL-2021 15:51

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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: 47A-15GR

Collection Date/Time: 06/29/2021 09:03

Field ID: 47A-15GR

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257990	EPA 8321B	Acesulfame K	0.10	U	ug/L	P400314	
		2,4-D	0.0020	U	ug/L	P400315	
		AMPA	1.0	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400315	
		Acetaminophen	0.0080	U	ug/L	P400315	
		Endothall	0.25	U	ug/L	P400314	
		Acetamiprid	0.0020	U	ug/L	P400315	
		Glufosinate	1.0	U	ug/L	P400314	
		Glyphosate	1.0	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400315	
		Sucralose	0.39		ug/L	P400314	
		Bentazon	0.14		ug/L	P400315	
		Benzovindiflupyr	0.0020	U	ug/L	P400315	
		Carbamazepine	0.0010	I	ug/L	P400315	
		Clothianidin	0.0047	I	ug/L	P400315	
		Dinotefuran	0.0020	U	ug/L	P400315	
		Diuron	0.0020	U	ug/L	P400315	
		Fenuron	0.016	U	ug/L	P400315	
		Fluridone	0.18		ug/L	P400315	
		Imazapyr	0.31		ug/L	P400315	MS
		Hydrocodone	0.0020	U	ug/L	P400315	
		Ibuprofen	0.020	U	ug/L	P400315	
		Imidacloprid	0.0049	I	ug/L	P400315	
		Linuron	0.0040	U	ug/L	P400315	
		Mandestrobin	0.0020	U	ug/L	P400315	
		MCPP	0.0020	U	ug/L	P400315	
		Naproxen	0.0080	U	ug/L	P400315	
		Primidone	0.0040	U	ug/L	P400315	
		Pyraclostrobin	0.0020	U	ug/L	P400315	
		Thiamethoxam	0.0020	U	ug/L	P400315	
		Tolfenpyrad	0.0020	U	ug/L	P400315	
		Triclopyr	0.0040	U	ug/L	P400315	

Ref. Method and Comment:

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

Sample Location: 47A-4GR

Collection Date/Time: 06/29/2021 09:27

Field ID: 47A-4GR

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257991	EPA 8321B	Acesulfame K	0.10	U	ug/L	P400314	
		2,4-D	0.0030	I	ug/L	P400315	
		AMPA	1.0	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400315	
		Acetaminophen	0.0099	I	ug/L	P400315	
		Endothall	0.25	U	ug/L	P400314	
		Acetamiprid	0.0020	U	ug/L	P400315	
		Glufosinate	1.0	U	ug/L	P400314	
		Glyphosate	1.0	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400315	
		Sucralose	0.40		ug/L	P400314	
		Bentazon	0.082		ug/L	P400315	
		Benzovindiflupyr	0.0020	U	ug/L	P400315	
		Carbamazepine	8.8E-04	I	ug/L	P400315	
		Clothianidin	0.0031	I	ug/L	P400315	
		Dinotefuran	0.0020	U	ug/L	P400315	
		Diuron	0.0020	U	ug/L	P400315	
		Fenuron	0.016	U	ug/L	P400315	
		Fluridone	0.14		ug/L	P400315	
		Imazapyr	0.19		ug/L	P400315	MS
		Hydrocodone	0.0020	U	ug/L	P400315	
		Ibuprofen	0.020	U	ug/L	P400315	
		Imidacloprid	0.0049	I	ug/L	P400315	
		Linuron	0.0040	U	ug/L	P400315	
		Mandestrobin	0.0020	U	ug/L	P400315	
		MCPP	0.0020	U	ug/L	P400315	
		Naproxen	0.0080	U	ug/L	P400315	
		Primidone	0.0040	U	ug/L	P400315	
		Pyraclostrobin	0.0020	U	ug/L	P400315	
		Thiamethoxam	0.0020	U	ug/L	P400315	
		Tolfenpyrad	0.0020	U	ug/L	P400315	
		Triclopyr	0.0040	U	ug/L	P400315	

Ref. Method and Comment:

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

Sample Location: IMPRGR51

Collection Date/Time: 06/29/2021 09:21

Field ID: IMPRGR51

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257992	EPA 8321B	Acesulfame K	0.10	U	ug/L	P400314	
		2,4-D	0.014		ug/L	P400315	
		AMPA	1.0	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400315	
		Acetaminophen	0.012	I	ug/L	P400315	
		Endothall	0.25	U	ug/L	P400314	
		Acetamiprid	0.0020	U	ug/L	P400315	
		Glufosinate	1.0	U	ug/L	P400314	
		Glyphosate	1.0	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400315	
		Sucralose	0.062		ug/L	P400314	
		Bentazon	0.19		ug/L	P400315	
		Benzovindiflupyr	0.0020	U	ug/L	P400315	
		Carbamazepine	9.7E-04	I	ug/L	P400315	
		Clothianidin	0.0020	U	ug/L	P400315	
		Dinotefuran	0.0020	U	ug/L	P400315	
		Diuron	0.0020	U	ug/L	P400315	
		Fenuron	0.016	U	ug/L	P400315	
		Fluridone	0.016		ug/L	P400315	
		Imazapyr	0.56		ug/L	P400315	MS
		Hydrocodone	0.0020	U	ug/L	P400315	
		Ibuprofen	0.020	U	ug/L	P400315	
		Imidacloprid	0.0029	I	ug/L	P400315	
		Linuron	0.0040	U	ug/L	P400315	
		Mandestrobin	0.0020	U	ug/L	P400315	
		MCPP	0.0020	U	ug/L	P400315	
		Naproxen	0.0080	U	ug/L	P400315	
		Primidone	0.0040	U	ug/L	P400315	
		Pyraclostrobin	0.0020	U	ug/L	P400315	
		Thiamethoxam	0.0020	U	ug/L	P400315	
		Tolfenpyrad	0.0020	U	ug/L	P400315	
		Triclopyr	0.0040	U	ug/L	P400315	

Ref. Method and Comment:

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

Sample Location: IMPRGR41

Collection Date/Time: 06/29/2021 09:42

Field ID: IMPRGR41

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257993	EPA 8321B	Acesulfame K	0.10	U	ug/L	P400314	
		2,4-D	0.014		ug/L	P400315	
		AMPA	1.0	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400315	
		Acetaminophen	0.013	I	ug/L	P400315	
		Endothall	0.25	U	ug/L	P400314	
		Acetamiprid	0.0020	U	ug/L	P400315	
		Glufosinate	1.0	U	ug/L	P400314	
		Glyphosate	1.0	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400315	
		Sucralose	0.068		ug/L	P400314	
		Bentazon	0.18		ug/L	P400315	
		Benzovindiflupyr	0.0020	U	ug/L	P400315	
		Carbamazepine	8.4E-04	I	ug/L	P400315	
		Clothianidin	0.0020	U	ug/L	P400315	
		Dinotefuran	0.0020	U	ug/L	P400315	
		Diuron	0.0020	U	ug/L	P400315	
		Fenuron	0.016	U	ug/L	P400315	
		Fluridone	0.024		ug/L	P400315	
		Imazapyr	0.44		ug/L	P400315	MS
		Hydrocodone	0.0020	U	ug/L	P400315	
		Ibuprofen	0.020	U	ug/L	P400315	
		Imidacloprid	0.0067	I	ug/L	P400315	
		Linuron	0.0040	U	ug/L	P400315	
		Mandestrobin	0.0020	U	ug/L	P400315	
		MCPP	0.0020	U	ug/L	P400315	
		Naproxen	0.0080	U	ug/L	P400315	
		Primidone	0.0040	U	ug/L	P400315	
		Pyraclostrobin	0.0020	U	ug/L	P400315	
		Thiamethoxam	0.0020	U	ug/L	P400315	
		Tolfenpyrad	0.0020	U	ug/L	P400315	
		Triclopyr	0.0040	U	ug/L	P400315	

Ref. Method and Comment:

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

Sample Location: IMPRGR30

Collection Date/Time: 06/29/2021 10:05

Field ID: IMPRGR30

Matrix: W-BRACKISH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2257994	EPA 8321B	Acesulfame K	0.10	U	ug/L	P400314	
		2,4-D	0.011		ug/L	P400469	
		AMPA	1.0	U	ug/L	P400314	
		2,4,5-T	0.0040	U	ug/L	P400469	
		Acetaminophen	0.0080	U	ug/L	P400469	
		Endothall	0.25	U	ug/L	P400314	
		Acetamiprid	0.0020	U	ug/L	P400469	
		Glufosinate	1.0	U	ug/L	P400314	
		Glyphosate	1.0	U	ug/L	P400314	
		Afidopyropen	0.0020	U	ug/L	P400469	
		Sucralose	0.079		ug/L	P400314	
		Bentazon	0.13		ug/L	P400469	
		Benzovindiflupyr	0.0020	U	ug/L	P400469	
		Carbamazepine	8.9E-04	I	ug/L	P400469	
		Clothianidin	0.0020	U	ug/L	P400469	
		Dinotefuran	0.0020	U	ug/L	P400469	
		Diuron	0.0020	U	ug/L	P400469	
		Fenuron	0.016	U	ug/L	P400469	
		Fluridone	0.026		ug/L	P400469	
		Imazapyr	0.24		ug/L	P400469	
		Hydrocodone	0.0020	U	ug/L	P400469	
		Ibuprofen	0.020	U	ug/L	P400469	
		Imidacloprid	0.0082		ug/L	P400469	MS
		Linuron	0.0040	U	ug/L	P400469	
		Mandestrobin	0.0020	U	ug/L	P400469	
		MCPP	0.0020	U	ug/L	P400469	
		Naproxen	0.0080	U	ug/L	P400469	
		Primidone	0.0040	U	ug/L	P400469	
		Pyraclostrobin	0.0020	U	ug/L	P400469	
		Thiamethoxam	0.0020	U	ug/L	P400469	MS
		Tolfenpyrad	0.0020	U	ug/L	P400469	
		Triclopyr	0.0040	U	ug/L	P400469	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B

Batch ID: P400314

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: P400315

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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: P400469

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P400469

Component	Result	Code	Units
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: P400314

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	89.8		P	40 - 150
AMPA	97.0		P	40 - 150
Endothall	97.7		P	40 - 150
Glufosinate	93.3		P	40 - 150
Glyphosate	96.5		P	40 - 150
Sucralose	85.2		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P400315

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	120		P	30 - 160
2,4,5-T	128		P	30 - 160
Acetaminophen	83.0		P	30 - 160
Acetamiprid	90.6		P	30 - 160
Afidopyropen	73.6		P	30 - 160
Bentazon	92.3		P	30 - 160
Benzovindiflupyr	92.8		P	30 - 160
Carbamazepine	92.0		P	30 - 160
Clothianidin	92.2		P	30 - 160
Dinotefuran	88.1		P	30 - 160
Diuron	73.7		P	30 - 160
Fenuron	99.7		P	30 - 160
Fluridone	87.6		P	30 - 160
Hydrocodone	94.6		P	30 - 160
Ibuprofen	86.0		P	30 - 160
Imazapyr	101		P	30 - 160
Imidacloprid	92.6		P	30 - 160
Linuron	73.3		P	30 - 160
Mandestrobin	94.1		P	30 - 160
MCPP	125		P	30 - 160
Naproxen	82.1		P	30 - 160
Primidone	93.3		P	30 - 160
Pyraclostrobin	81.1		P	30 - 160
Thiamethoxam	91.7		P	30 - 160
Tolfenpyrad	47.4		P	30 - 160
Triclopyr	122		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P400469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	102		P	40 - 150
2,4,5-T	88.8		P	40 - 150
Acetaminophen	91.0		P	30 - 150
Acetamiprid	75.9		P	40 - 150
Afidopyropen	78.3		P	40 - 150
Bentazon	115		P	30 - 150
Benzovindiflupyr	83.0		P	40 - 150
Carbamazepine	90.2		P	40 - 150
Clothianidin	88.8		P	40 - 150
Dinotefuran	82.7		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P400469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Diuron	73.3		P	40 - 150
Fenuron	87.3		P	40 - 150
Fluridone	87.1		P	40 - 150
Hydrocodone	81.5		P	40 - 150
Ibuprofen	85.2		P	40 - 150
Imazapyr	92.9		P	40 - 150
Imidacloprid	94.3		P	40 - 150
Linuron	64.3		P	40 - 150
Mandestrobin	79.4		P	40 - 150
MCPP	113		P	40 - 150
Naproxen	123		P	40 - 150
Primidone	62.4		P	40 - 150
Pyraclostrobin	80.5		P	40 - 150
Thiamethoxam	93.4		P	40 - 150
Tolfenpyrad	50.5		P	30 - 150
Triclopyr	87.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P400314

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2257607	Acesulfame K	78.8	87.6	P/P	40 - 150
2257607	AMPA	85.0	82.9	P/P	40 - 150
2257607	Endothall	93.9	93.7	P/P	40 - 150
2257607	Glufosinate	86.9	89.2	P/P	40 - 150
2257607	Glyphosate	91.4	82.6	P/P	40 - 150
2257607	Sucralose	80.9	85.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P400315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256868	2,4-D	122	124	P/P	30 - 160
2256868	2,4,5-T	113	116	P/P	30 - 160
2256868	Acetaminophen	112	112	P/P	30 - 160
2256868	Acetamiprid	82.4	74.6	P/P	30 - 160
2256868	Afidopyropen	71.1	57.7	P/P	30 - 160
2256868	Bentazon	79.5	74.5	P/P	30 - 160
2256868	Benzovindiflupyr	84.5	91.2	P/P	30 - 160
2256868	Carbamazepine	85.2	87.3	P/P	30 - 160
2256868	Clothianidin	114	107	P/P	30 - 160
2256868	Dinotefuran	125	123	P/P	30 - 160
2256868	Diuron	75.7	68.5	P/P	30 - 160
2256868	Fenuron	83.1	79.1	P/P	30 - 160
2256868	Fluridone	79.7	81.1	P/P	30 - 160
2256868	Hydrocodone	108	107	P/P	30 - 160
2256868	Ibuprofen	84.8	67.3	P/P	30 - 160
2256868	Imazapyr	168	159	F/P	30 - 160
2256868	Imidacloprid	148	155	P/P	30 - 160
2256868	Linuron	70.6	70.0	P/P	30 - 160
2256868	Mandestrobin	94.0	90.3	P/P	30 - 160
2256868	MCP	113	112	P/P	30 - 160
2256868	Naproxen	97.4	75.5	P/P	30 - 160
2256868	Primidone	122	111	P/P	30 - 160
2256868	Pyraclostrobin	88.6	80.2	P/P	30 - 160
2256868	Thiamethoxam	145	148	P/P	30 - 160
2256868	Tolfenpyrad	53.7	55.9	P/P	30 - 160
2256868	Triclopyr	121	113	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P400469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258016	2,4-D	111	115	P/P	40 - 150
2258016	2,4,5-T	118	102	P/P	40 - 150
2258016	Acetaminophen	125	106	P/P	30 - 150
2258016	Acetamiprid	96.2	76.6	P/P	40 - 150
2258016	Afidopyropen	43.0	40.8	P/P	40 - 150
2258016	Bentazon	88.1	84.4	P/P	30 - 150
2258016	Benzovindiflupyr	80.1	64.9	P/P	40 - 150
2258016	Carbamazepine	105	98.4	P/P	40 - 150
2258016	Clothianidin	125	117	P/P	40 - 150
2258016	Dinotefuran	127	105	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P400469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2258016	Diuron	87.6	80.3	P/P	40 - 150
2258016	Fenuron	90.1	84.1	P/P	40 - 150
2258016	Fluridone	84.7	76.1	P/P	40 - 150
2258016	Hydrocodone	118	106	P/P	40 - 150
2258016	Ibuprofen	75.0	81.1	P/P	40 - 150
2258016	Imazapyr	149	128	P/P	40 - 150
2258016	Imidacloprid	206	191	F/F	40 - 150
2258016	Linuron	86.5	74.3	P/P	40 - 150
2258016	Mandestrobin	86.5	81.5	P/P	40 - 150
2258016	MCPP	131	107	P/P	40 - 150
2258016	Naproxen	131	128	P/P	40 - 150
2258016	Primidone	98.1	104	P/P	40 - 150
2258016	Pyraclostrobin	76.2	67.4	P/P	40 - 150
2258016	Thiamethoxam	174	153	F/F	40 - 150
2258016	Tolfenpyrad	58.5	53.5	P/P	30 - 150
2258016	Triclopyr	119	110	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P400314

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2257607	Acesulfame K	9.91	Spike	P	0 - 30
2257607	AMPA	2.21	Spike	P	0 - 30
2257607	Endothall	0.197	Spike	P	0 - 30
2257607	Glufosinate	2.64	Spike	P	0 - 30
2257607	Glyphosate	9.03	Spike	P	0 - 30
2257607	Sucralose	5.32	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P400315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256868	2,4-D	1.26	Spike	P	0 - 30
2256868	2,4,5-T	3.02	Spike	P	0 - 30
2256868	Acetaminophen	0.0414	Spike	P	0 - 30
2256868	Acetamiprid	10.0	Spike	P	0 - 30
2256868	Afidopyropen	20.9	Spike	P	0 - 30
2256868	Bentazon	4.42	Spike	P	0 - 30
2256868	Benzovindiflupyr	7.62	Spike	P	0 - 30
2256868	Carbamazepine	2.49	Spike	P	0 - 30
2256868	Clothianidin	6.72	Spike	P	0 - 30
2256868	Dinotefuran	1.79	Spike	P	0 - 30
2256868	Diuron	9.87	Spike	P	0 - 30
2256868	Fenuron	4.91	Spike	P	0 - 30
2256868	Fluridone	1.73	Spike	P	0 - 30
2256868	Hydrocodone	1.10	Spike	P	0 - 30
2256868	Ibuprofen	23.0	Spike	P	0 - 30
2256868	Imazapyr	5.53	Spike	P	0 - 30
2256868	Imidacloprid	3.73	Spike	P	0 - 30
2256868	Linuron	0.884	Spike	P	0 - 30
2256868	Mandestrobin	4.05	Spike	P	0 - 30
2256868	MCPP	0.487	Spike	P	0 - 30
2256868	Naproxen	25.3	Spike	P	0 - 30
2256868	Primidone	9.27	Spike	P	0 - 30
2256868	Pyraclostrobin	9.94	Spike	P	0 - 30
2256868	Thiamethoxam	2.44	Spike	P	0 - 30
2256868	Tolfenpyrad	4.05	Spike	P	0 - 30
2256868	Triclopyr	6.44	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P400469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258016	2,4-D	3.51	Spike	P	0 - 30
2258016	2,4,5-T	15.0	Spike	P	0 - 30
2258016	Acetaminophen	15.9	Spike	P	0 - 30
2258016	Acetamiprid	22.6	Spike	P	0 - 30
2258016	Afidopyropen	5.24	Spike	P	0 - 30
2258016	Bentazon	4.36	Spike	P	0 - 30
2258016	Benzovindiflupyr	21.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P400469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2258016	Carbamazepine	6.92	Spike	P	0 - 30
2258016	Clothianidin	6.15	Spike	P	0 - 30
2258016	Dinotefuran	19.0	Spike	P	0 - 30
2258016	Diuron	8.61	Spike	P	0 - 30
2258016	Fenuron	6.91	Spike	P	0 - 30
2258016	Fluridone	10.7	Spike	P	0 - 30
2258016	Hydrocodone	11.3	Spike	P	0 - 30
2258016	Ibuprofen	7.81	Spike	P	0 - 30
2258016	Imazapyr	14.0	Spike	P	0 - 30
2258016	Imidacloprid	5.16	Spike	P	0 - 30
2258016	Linuron	15.1	Spike	P	0 - 30
2258016	Mandestrobin	5.98	Spike	P	0 - 30
2258016	MCPP	19.7	Spike	P	0 - 30
2258016	Naproxen	2.81	Spike	P	0 - 30
2258016	Primidone	6.22	Spike	P	0 - 30
2258016	Pyraclostrobin	12.3	Spike	P	0 - 30
2258016	Thiamethoxam	13.0	Spike	P	0 - 30
2258016	Tolfenpyrad	8.86	Spike	P	0 - 30
2258016	Triclopyr	7.54	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2257990
Field Sample ID: 47A-15GR

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	124	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.9	P	30 - 160
EPA 8321B	Diuron-d6	63.4	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	55.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.4	P	30 - 160
EPA 8321B	Primidone-d5	121	P	30 - 160
EPA 8321B	Sucralose-d6	79.1	P	30 - 160

Lab Sample ID: 2257991
Field Sample ID: 47A-4GR

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	127	P	30 - 160
EPA 8321B	Acetaminophen-d4	120	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.0	P	30 - 160
EPA 8321B	Diuron-d6	62.0	P	30 - 160
EPA 8321B	Endothall-d6	92.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	36.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	82.4	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	78.1	P	30 - 160

Lab Sample ID: 2257992
Field Sample ID: IMPRGR51

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	121	P	30 - 160
EPA 8321B	Acetaminophen-d4	134	P	30 - 160
EPA 8321B	Carbamazepine-d10	79.2	P	30 - 160
EPA 8321B	Diuron-d6	54.9	P	30 - 160
EPA 8321B	Endothall-d6	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.6	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	89.2	P	30 - 160

Lab Sample ID: 2257993
Field Sample ID: IMPRGR41

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	126	P	30 - 160
EPA 8321B	Acetaminophen-d4	131	P	30 - 160
EPA 8321B	Carbamazepine-d10	81.4	P	30 - 160
EPA 8321B	Diuron-d6	58.1	P	30 - 160
EPA 8321B	Endothall-d6	95.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.6	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	77.8	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2257994

Field Sample ID: IMPRGR30

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	121	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	100	P	30 - 160
EPA 8321B	Diuron-d6	90.7	P	30 - 160
EPA 8321B	Endothall-d6	90.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	50.3	P	30 - 160
EPA 8321B	Ibuprofen-d3	98.5	P	30 - 160
EPA 8321B	Primidone-d5	99.0	P	30 - 160
EPA 8321B	Sucralose-d6	78.8	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A106390

Included Lab Sample IDs: 2257990, 2257991, 2257992, 2257993

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	94.7	95.4	P/P	50 - 150
2,4,5-T	104	99.2	P/P	50 - 150
Acetaminophen	111	104	P/P	60 - 160
Acetamiprid	104	101	P/P	50 - 150
Afidopyropen	97.1	95.0	P/P	50 - 150
Bentazon	101	102	P/P	50 - 160
Bentazon	105	101	P/P	50 - 160
Benzovindiflupyr	113	114	P/P	50 - 160
Carbamazepine	111	109	P/P	60 - 150
Clothianidin	116	105	P/P	60 - 150
Dinotefuran	109	103	P/P	50 - 150
Diuron	105	108	P/P	60 - 160
Fenuron	99.6	104	P/P	60 - 150
Fluridone	101	103	P/P	60 - 160
Hydrocodone	109	108	P/P	60 - 150
Ibuprofen	96.7	103	P/P	50 - 160
Imazapyr	108	94.0	P/P	50 - 160
Imidacloprid	94.3	95.4	P/P	60 - 150
Linuron	114	101	P/P	60 - 150
Mandestrobin	107	113	P/P	50 - 150
MCPP	105	103	P/P	50 - 150
Naproxen	91.9	102	P/P	50 - 160
Primidone	101	100	P/P	60 - 150
Pyraclostrobin	104	108	P/P	60 - 150
Thiamethoxam	106	106	P/P	50 - 150
Tolfenpyrad	107	101	P/P	60 - 150
Triclopyr	103	103	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A106404

Included Lab Sample IDs: 2257990, 2257991, 2257992, 2257993, 2257994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	84.8	92.5	P/P	60 - 160
Glufosinate	84.8	91.4	P/P	60 - 160
Glyphosate	86.1	94.1	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A106461

Included Lab Sample IDs: 2257990, 2257991, 2257992, 2257993, 2257994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	75.4	77.8	P/P	60 - 160
Acesulfame K	82.8	75.4	P/P	60 - 160
Endothall	71.1	75.1	P/P	60 - 160
Endothall	80.2	71.1	P/P	60 - 160
Sucralose	75.8	71.0	P/P	60 - 160
Sucralose	77.4	75.8	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
 Run ID: A106497
 Included Lab Sample IDs: 2257994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	106	P/P	50 - 150
2,4,5-T	103	94.1	P/P	50 - 150
Acetaminophen	104	98.2	P/P	60 - 160
Acetamiprid	92.0	102	P/P	50 - 150
Afidopyropen	106	116	P/P	50 - 150
Benzovindiflupyr	95.4	109	P/P	50 - 150
Carbamazepine	99.5	100	P/P	60 - 150
Clothianidin	96.7	108	P/P	60 - 150
Dinotefuran	110	103	P/P	50 - 150
Diuron	90.8	109	P/P	60 - 160
Fenuron	93.9	91.5	P/P	60 - 150
Fluridone	98.4	106	P/P	60 - 160
Hydrocodone	102	109	P/P	60 - 150
Ibuprofen	80.3	83.6	P/P	50 - 160
Imazapyr	116	100	P/P	50 - 150
Imidacloprid	97.9	99.7	P/P	60 - 150
Linuron	81.8	86.4	P/P	60 - 150
Mandestrobin	100	104	P/P	50 - 150
MCPP	96.8	99.8	P/P	50 - 150
Naproxen	83.0	114	P/P	50 - 160
Primidone	85.1	83.0	P/P	60 - 150
Pyraclostrobin	90.0	100	P/P	60 - 150
Thiamethoxam	99.9	105	P/P	50 - 150
Tolfenpyrad	93.7	92.3	P/P	60 - 150
Triclopyr	85.5	96.3	P/P	50 - 150

Reference Method: EPA 8321B
 Run ID: A106555
 Included Lab Sample IDs: 2257994

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	107	103	P/P	50 - 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	120	122	124		1.26
	2,4-D	102	111	115		3.51
	2,4,5-T	128	113	116		3.02
	2,4,5-T	88.8	118	102		15.0
	Acesulfame K	89.8	78.8	87.6		9.91
	Acetaminophen	83.0	112	112		0.0414
	Acetaminophen	91.0	125	106		15.9
	Acetamiprid	90.6	82.4	74.6		10.0
	Acetamiprid	75.9	96.2	76.6		22.6
	Afidopyropen	73.6	71.1	57.7		20.9
	Afidopyropen	78.3	43.0	40.8		5.24
	AMPA	97.0	85.0	82.9		2.21
	Bentazon	92.3	79.5	74.5		4.42
	Bentazon	115	88.1	84.4		4.36
	Benzovindiflupyr	92.8	84.5	91.2		7.62
	Benzovindiflupyr	83.0	80.1	64.9		21.0
	Carbamazepine	92.0	85.2	87.3		2.49
	Carbamazepine	90.2	105	98.4		6.92
	Clothianidin	92.2	114	107		6.72
	Clothianidin	88.8	125	117		6.15
	Dinotefuran	88.1	125	123		1.79
	Dinotefuran	82.7	127	105		19.0
	Diuron	73.7	75.7	68.5		9.87
	Diuron	73.3	87.6	80.3		8.61
	Endothall	97.7	93.9	93.7		0.197
	Fenuron	99.7	83.1	79.1		4.91
	Fenuron	87.3	90.1	84.1		6.91
	Fluridone	87.6	79.7	81.1		1.73
	Fluridone	87.1	84.7	76.1		10.7
	Glufosinate	93.3	86.9	89.2		2.64
	Glyphosate	96.5	91.4	82.6		9.03
	Hydrocodone	94.6	108	107		1.10
	Hydrocodone	81.5	118	106		11.3
	Ibuprofen	86.0	84.8	67.3		23.0
	Ibuprofen	85.2	75.0	81.1		7.81
	Imazapyr	101	168	159		5.53
	Imazapyr	92.9	149	128		14.0
	Imidacloprid	92.6	148	155		3.73
	Imidacloprid	94.3	206	191		5.16
	Linuron	73.3	70.6	70.0		0.884
	Linuron	64.3	86.5	74.3		15.1
	Mandestrobin	94.1	94.0	90.3		4.05
	Mandestrobin	79.4	86.5	81.5		5.98
	MCPP	125	113	112		0.487
	MCPP	113	131	107		19.7
	Naproxen	82.1	97.4	75.5		25.3
	Naproxen	123	131	128		2.81
	Primidone	93.3	122	111		9.27
	Primidone	62.4	98.1	104		6.22
	Pyraclostrobin	81.1	88.6	80.2		9.94
	Pyraclostrobin	80.5	76.2	67.4		12.3
	Sucralose	85.2	80.9	85.6		5.32
	Thiamethoxam	91.7	145	148		2.44
	Thiamethoxam	93.4	174	153		13.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Tolfenpyrad	47.4	53.7	55.9			4.05
	Tolfenpyrad	50.5	58.5	53.5			8.86
	Triclopyr	122	121	113			6.44
	Triclopyr	87.2	119	110			7.54

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2257990, 2257991, 2257992, 2257993, 2257994

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 06:17	Juyoung Kim	2257990
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 06:52	Juyoung Kim	2257991
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 07:27	Juyoung Kim	2257992
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 08:01	Juyoung Kim	2257993
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 10:55	Juyoung Kim	2257990
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 11:29	Juyoung Kim	2257992
	06/30/2021	06/30/2021 13:00	Hoor Shaik	07/01/2021 12:04	Juyoung Kim	2257993
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 20:51	Juyoung Kim	2257990
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 21:01	Juyoung Kim	2257991
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 21:12	Juyoung Kim	2257992
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 21:23	Juyoung Kim	2257993
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/01/2021 21:34	Juyoung Kim	2257994
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 12:02	Pramila Ghimire	2257990
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 12:15	Pramila Ghimire	2257991
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 12:29	Pramila Ghimire	2257992
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 12:56	Pramila Ghimire	2257993
	06/30/2021	07/01/2021 11:30	Pramila Ghimire	07/02/2021 13:10	Pramila Ghimire	2257994
	06/30/2021	07/02/2021 14:00	Hoor Shaik	07/07/2021 16:53	Juyoung Kim	2257994
	06/30/2021	07/02/2021 14:00	Hoor Shaik	07/09/2021 23:22	Juyoung Kim	2257994