

Chemical Analysis Report

SO-DIST-2020-02-11-02

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

Event Description: **2020 SMP : Bayshore Cricks**
Request ID: **RQ-2020-02-10-55**
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: Nicole Reistad

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: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 09-MAR-2020 12:21



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: YellowFever@LittletonRd

Collection Date/Time: 02/10/2020 09:00

Field ID: G3SD0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156461	EPA 8321B	2,4-D	0.0020	U	ug/L	P378656	
		Acesulfame K**	0.10	UJ	ug/L	P378784	MS
		AMPA**	0.10	U	ug/L	P378784	
		Sucralose**	0.15		ug/L	P378784	
		Acetaminophen**	0.0080	U	ug/L	P378656	
		Acetamiprid**	0.0020	U	ug/L	P378656	
		Endothall**	0.25	U	ug/L	P378784	
		Glufosinate**	0.10	U	ug/L	P378784	
		Glyphosate**	0.10	U	ug/L	P378784	
		Afidopyropen**	0.0020	UJ	ug/L	P378656	
		Bentazon	0.0022	I	ug/L	P378656	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378656	
		Carbamazepine**	8.0E-04	U	ug/L	P378656	
		Clothianidin**	0.0034	I	ug/L	P378656	
		Dinotefuran**	0.0020	U	ug/L	P378656	
		Diuron	0.0020	U	ug/L	P378656	
		Fenuron	0.016	U	ug/L	P378656	
		Fluridone**	0.0067		ug/L	P378656	
		Imazapyr**	0.027		ug/L	P378656	
		Hydrocodone**	0.0020	U	ug/L	P378656	
		Ibuprofen**	0.020	U	ug/L	P378656	
		Imidacloprid	0.0028	I	ug/L	P378656	MS
		Linuron	0.0040	U	ug/L	P378656	
		Mandestrobin**	0.0020	UJ	ug/L	P378656	
		MCPP	0.0020	U	ug/L	P378656	
		Naproxen**	0.0080	U	ug/L	P378656	
		Primidone**	0.0040	U	ug/L	P378656	
		Pyraclostrobin**	0.0020	U	ug/L	P378656	
		Thiamethoxam**	0.0020	U	ug/L	P378656	
		Tolfenpyrad**	0.0020	U	ug/L	P378656	
		Triclopyr**	0.0040	U	ug/L	P378656	

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.

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

Sample Location: PowellCreek@Bayshore

Collection Date/Time: 02/10/2020 09:40

Field ID: G3SD0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156462	EPA 8321B	2,4-D	0.0020	U	ug/L	P378742	
		Acesulfame K**	0.10	U	ug/L	P378784	MS
		AMPA**	0.73		ug/L	P378784	
		Sucralose**	0.37		ug/L	P378784	
		Acetaminophen**	0.0080	U	ug/L	P378742	
		Acetamiprid**	0.0020	U	ug/L	P378742	
		Endothall**	0.25	U	ug/L	P378784	
		Glufosinate**	0.10	U	ug/L	P378784	
		Glyphosate**	1.3		ug/L	P378784	
		Afidopyropen**	0.0020	UJ	ug/L	P378742	
		Bentazon	0.0018	I	ug/L	P378742	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378742	
		Carbamazepine**	0.030		ug/L	P378742	
		Clothianidin**	0.0020	U	ug/L	P378742	
		Dinotefuran**	0.0020	U	ug/L	P378742	
		Diuron	0.0020	U	ug/L	P378742	
		Fenuron	0.016	U	ug/L	P378742	
		Fluridone**	0.017		ug/L	P378742	
		Imazapyr**	0.20		ug/L	P378742	
		Hydrocodone**	0.0020	U	ug/L	P378742	
		Ibuprofen**	0.020	U	ug/L	P378742	
		Imidacloprid	0.0034	I	ug/L	P378742	
		Linuron	0.0040	U	ug/L	P378742	
		Mandestrobin**	0.0020	UJ	ug/L	P378742	
		MCPP	0.0020	U	ug/L	P378742	
		Naproxen**	0.0080	U	ug/L	P378742	
		Primidone**	0.0043	I	ug/L	P378742	
		Pyraclostrobin**	0.0020	U	ug/L	P378742	
		Thiamethoxam**	0.0020	U	ug/L	P378742	
		Tolfenpyrad**	0.0020	U	ug/L	P378742	
		Triclopyr**	0.0040	U	ug/L	P378742	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for carbamazepine and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: DaughtreyCreek@Bayshore

Collection Date/Time: 02/10/2020 10:00

Field ID: G3SD0164

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156463	EPA 8321B	2,4-D	0.0020	U	ug/L	P378742	
		Acesulfame K**	0.10	U	ug/L	P378784	MS
		AMPA**	0.10	U	ug/L	P378784	
		Sucralose**	0.057	J	ug/L	P378784	SUR
		Acetaminophen**	0.0080	U	ug/L	P378742	
		Acetamiprid**	0.0020	U	ug/L	P378742	
		Endothall**	0.25	U	ug/L	P378784	
		Glufosinate**	0.10	U	ug/L	P378784	
		Glyphosate**	0.17	I	ug/L	P378784	
		Afidopyropen**	0.0020	UJ	ug/L	P378742	
		Bentazon	0.0027	I	ug/L	P378742	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378742	
		Carbamazepine**	0.0025	I	ug/L	P378742	
		Clothianidin**	0.0020	U	ug/L	P378742	
		Dinotefuran**	0.0020	U	ug/L	P378742	
		Diuron	0.0020	U	ug/L	P378742	
		Fenuron	0.016	U	ug/L	P378742	
		Fluridone**	8.0E-04	U	ug/L	P378742	
		Imazapyr**	0.076		ug/L	P378742	
		Hydrocodone**	0.0020	U	ug/L	P378742	
		Ibuprofen**	0.020	U	ug/L	P378742	
		Imidacloprid	0.0020	U	ug/L	P378742	
		Linuron	0.0040	U	ug/L	P378742	
		Mandestrobin**	0.0020	UJ	ug/L	P378742	
		MCPP	0.0020	U	ug/L	P378742	
		Naproxen**	0.0080	U	ug/L	P378742	
		Primidone**	0.0040	U	ug/L	P378742	
		Pyraclostrobin**	0.0020	U	ug/L	P378742	
		Thiamethoxam**	0.0020	U	ug/L	P378742	
		Tolfenpyrad**	0.0020	U	ug/L	P378742	
		Triclopyr**	0.0040	U	ug/L	P378742	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for carbamazepine and imazapyr could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: PopashCreek@Pritchett

Collection Date/Time: 02/10/2020 10:20

Field ID: G3SD0079

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2156464	EPA 8321B	2,4-D	0.0035	I	ug/L	P378742	
		Acesulfame K**	0.18	I	ug/L	P378784	MS
		AMPA**	0.10	U	ug/L	P378784	
		Sucralose**	0.37		ug/L	P378784	
		Acetaminophen**	0.0080	U	ug/L	P378742	
		Acetamiprid**	0.0020	U	ug/L	P378742	
		Endothall**	0.25	U	ug/L	P378784	
		Glufosinate**	0.10	U	ug/L	P378784	
		Glyphosate**	0.13	I	ug/L	P378784	
		Afidopyropen**	0.0020	UJ	ug/L	P378742	
		Bentazon	8.0E-04	U	ug/L	P378742	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P378742	
		Carbamazepine**	0.0011	I	ug/L	P378742	
		Clothianidin**	0.0020	U	ug/L	P378742	
		Dinotefuran**	0.0020	U	ug/L	P378742	
		Diuron	0.0020	U	ug/L	P378742	
		Fenuron	0.016	U	ug/L	P378742	
		Fluridone**	0.012		ug/L	P378742	
		Imazapyr**	0.084		ug/L	P378742	
		Hydrocodone**	0.0020	U	ug/L	P378742	
		Ibuprofen**	0.020	U	ug/L	P378742	
		Imidacloprid	0.0020	U	ug/L	P378742	
		Linuron	0.0040	U	ug/L	P378742	
		Mandestrobin**	0.0020	UJ	ug/L	P378742	
		MCPP	0.0020	U	ug/L	P378742	
		Naproxen**	0.0080	U	ug/L	P378742	
		Primidone**	0.010	I	ug/L	P378742	
		Pyraclostrobin**	0.0020	U	ug/L	P378742	
		Thiamethoxam**	0.0020	U	ug/L	P378742	
		Tolfenpyrad**	0.0020	U	ug/L	P378742	
		Triclopyr**	0.0040	U	ug/L	P378742	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for carbamazepine and imazapyr 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: P378656

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: P378742

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: P378742

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: P378784

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: P378656

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	122		P	30 - 160
Acetaminophen	93.0		P	30 - 160
Acetamiprid	89.9		P	30 - 160
Afidopyropen	75.9		P	30 - 160
Bentazon	84.8		P	30 - 160
Benzovindiflupyr	80.0		P	30 - 160
Carbamazepine	89.4		P	30 - 160
Clothianidin	91.1		P	30 - 160
Dinotefuran	90.1		P	30 - 160
Diuron	89.6		P	30 - 160
Fenuron	109		P	30 - 160
Fluridone	87.7		P	30 - 160
Hydrocodone	101		P	30 - 160
Ibuprofen	76.8		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	109		P	30 - 160
Linuron	70.7		P	30 - 160
Mandestrobin	83.6		P	30 - 160
MCPP	122		P	30 - 160
Naproxen	77.0		P	30 - 160
Primidone	98.2		P	30 - 160
Pyraclostrobin	76.4		P	30 - 160
Thiamethoxam	69.0		P	30 - 160
Tolfenpyrad	49.7		P	30 - 160
Triclopyr	95.5		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	153		P	30 - 160
Acetaminophen	99.8		P	30 - 160
Acetamiprid	86.9		P	30 - 160
Afidopyropen	99.3		P	30 - 160
Bentazon	88.8		P	30 - 160
Benzovindiflupyr	86.7		P	30 - 160
Carbamazepine	105		P	30 - 160
Clothianidin	86.1		P	30 - 160
Dinotefuran	118		P	30 - 160
Diuron	86.7		P	30 - 160
Fenuron	124		P	30 - 160
Fluridone	96.2		P	30 - 160
Hydrocodone	105		P	30 - 160
Ibuprofen	105		P	30 - 160
Imazapyr	122		P	30 - 160
Imidacloprid	111		P	30 - 160
Linuron	81.1		P	30 - 160
Mandestrobin	100		P	30 - 160
MCPP	158		P	30 - 160
Naproxen	90.9		P	30 - 160
Primidone	111		P	30 - 160
Pyraclostrobin	91.1		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P378742

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	111		P	30 - 160
Tolfenpyrad	58.8		P	30 - 160
Triclopyr	109		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378784

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	136		P	40 - 150
AMPA	121		P	40 - 150
Endothall	103		P	40 - 150
Glufosinate	128		P	40 - 150
Glyphosate	136		P	40 - 140
Sucralose	92.3		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378656

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156209	2,4-D	133	127	P/P	30 - 160
2156209	Acetaminophen	100	106	P/P	30 - 160
2156209	Acetamiprid	93.4	83.3	P/P	30 - 160
2156209	Afidopyropen	97.8	86.7	P/P	30 - 160
2156209	Bentazon	72.7	69.3	P/P	30 - 160
2156209	Benzovindiflupyr	84.7	80.7	P/P	30 - 160
2156209	Carbamazepine	88.3	71.8	P/P	30 - 160
2156209	Clothianidin	99.7	83.6	P/P	30 - 160
2156209	Dinotefuran	112	103	P/P	30 - 160
2156209	Diuron	77.2	76.9	P/P	30 - 160
2156209	Fenuron	76.7	88.4	P/P	30 - 160
2156209	Fluridone	86.7	85.7	P/P	30 - 160
2156209	Hydrocodone	93.6	107	P/P	30 - 160
2156209	Ibuprofen	81.7	84.0	P/P	30 - 160
2156209	Imidacloprid	163	172	F/F	30 - 160
2156209	Linuron	66.9	65.0	P/P	30 - 160
2156209	Mandestrobin	84.3	83.1	P/P	30 - 160
2156209	MCCP	133	131	P/P	30 - 160
2156209	Naproxen	99.7	102	P/P	30 - 160
2156209	Primidone	103	96.6	P/P	30 - 160
2156209	Pyraclostrobin	81.7	84.6	P/P	30 - 160
2156209	Thiamethoxam	132	113	P/P	30 - 160
2156209	Tolfenpyrad	49.2	55.7	P/P	30 - 160
2156209	Triclopyr	106	108	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P378742

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156462	2,4-D	147	131	P/P	30 - 160
2156462	Acetaminophen	99.5	95.4	P/P	30 - 160
2156462	Acetamiprid	92.1	80.5	P/P	30 - 160
2156462	Afidopyropen	79.8	88.8	P/P	30 - 160
2156462	Bentazon	67.9	55.5	P/P	30 - 160
2156462	Benzovindiflupyr	70.0	69.2	P/P	30 - 160
2156462	Clothianidin	93.8	99.4	P/P	30 - 160
2156462	Dinotefuran	116	129	P/P	30 - 160
2156462	Diuron	69.4	63.7	P/P	30 - 160
2156462	Fenuron	90.8	90.9	P/P	30 - 160
2156462	Fluridone	73.7	74.9	P/P	30 - 160
2156462	Hydrocodone	109	102	P/P	30 - 160
2156462	Ibuprofen	77.7	75.2	P/P	30 - 160
2156462	Imidacloprid	151	149	P/P	30 - 160
2156462	Linuron	69.1	65.8	P/P	30 - 160
2156462	Mandestrobin	78.8	81.5	P/P	30 - 160
2156462	MCCP	141	129	P/P	30 - 160
2156462	Naproxen	69.2	60.1	P/P	30 - 160
2156462	Primidone	96.3	100	P/P	30 - 160
2156462	Pyraclostrobin	76.9	71.5	P/P	30 - 160
2156462	Thiamethoxam	129	147	P/P	30 - 160
2156462	Tolfenpyrad	47.7	48.0	P/P	30 - 160
2156462	Triclopyr	113	107	P/P	30 - 160

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P378784

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2156461	Acesulfame K	28.6	28.2	F/F	40 - 150
2156461	AMPA	109	108	P/P	40 - 150
2156461	Endothall	102	103	P/P	40 - 150
2156461	Glufosinate	119	119	P/P	40 - 150
2156461	Glyphosate	129	137	P/P	40 - 140
2156461	Sucralose	48.8	62.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P378656

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156209	2,4-D	4.03	Spike	P	0 - 30
2156209	Acetaminophen	4.95	Spike	P	0 - 30
2156209	Acetamiprid	11.4	Spike	P	0 - 30
2156209	Afidopyropen	12.0	Spike	P	0 - 30
2156209	Bentazon	4.81	Spike	P	0 - 30
2156209	Benzovindiflupyr	4.87	Spike	P	0 - 30
2156209	Carbamazepine	20.5	Spike	P	0 - 30
2156209	Clothianidin	16.4	Spike	P	0 - 30
2156209	Dinotefuran	8.57	Spike	P	0 - 30
2156209	Diuron	0.306	Spike	P	0 - 30
2156209	Fenuron	14.1	Spike	P	0 - 30
2156209	Fluridone	1.17	Spike	P	0 - 30
2156209	Hydrocodone	13.7	Spike	P	0 - 30
2156209	Ibuprofen	2.75	Spike	P	0 - 30
2156209	Imazapyr	0.0409	Spike	P	0 - 30
2156209	Imidacloprid	4.52	Spike	P	0 - 30
2156209	Linuron	2.85	Spike	P	0 - 30
2156209	Mandestrobin	1.43	Spike	P	0 - 30
2156209	MCP	1.48	Spike	P	0 - 30
2156209	Naproxen	2.70	Spike	P	0 - 30
2156209	Primidone	6.40	Spike	P	0 - 30
2156209	Pyraclostrobin	3.55	Spike	P	0 - 30
2156209	Thiamethoxam	14.7	Spike	P	0 - 30
2156209	Tolfenpyrad	12.5	Spike	P	0 - 30
2156209	Triclopyr	1.73	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P378742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156462	2,4-D	11.2	Spike	P	0 - 30
2156462	Acetaminophen	4.22	Spike	P	0 - 30
2156462	Acetamiprid	13.5	Spike	P	0 - 30
2156462	Afidopyropen	10.7	Spike	P	0 - 30
2156462	Bentazon	14.7	Spike	P	0 - 30
2156462	Benzovindiflupyr	1.12	Spike	P	0 - 30
2156462	Carbamazepine	1.04	Spike	P	0 - 30
2156462	Clothianidin	5.81	Spike	P	0 - 30
2156462	Dinotefuran	10.7	Spike	P	0 - 30
2156462	Diuron	8.60	Spike	P	0 - 30
2156462	Fenuron	0.113	Spike	P	0 - 30
2156462	Fluridone	0.751	Spike	P	0 - 30
2156462	Hydrocodone	5.72	Spike	P	0 - 30
2156462	Ibuprofen	3.27	Spike	P	0 - 30
2156462	Imazapyr	2.72	Spike	P	0 - 30
2156462	Imidacloprid	1.02	Spike	P	0 - 30
2156462	Linuron	4.81	Spike	P	0 - 30
2156462	Mandestrobin	3.34	Spike	P	0 - 30
2156462	MCP	8.71	Spike	P	0 - 30
2156462	Naproxen	14.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P378742

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156462	Primidone	3.98	Spike	P	0 - 30
2156462	Pyraclostrobin	7.30	Spike	P	0 - 30
2156462	Thiamethoxam	13.4	Spike	P	0 - 30
2156462	Tolfenpyrad	0.649	Spike	P	0 - 30
2156462	Triclopyr	5.61	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P378784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2156461	Acesulfame K	1.46	Spike	P	0 - 30
2156461	AMPA	1.19	Spike	P	0 - 30
2156461	Endothall	1.69	Spike	P	0 - 30
2156461	Glufosinate	0.0647	Spike	P	0 - 30
2156461	Glyphosate	6.02	Spike	P	0 - 30
2156461	Sucralose	21.8	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2156461
Field Sample ID: G3SD0149

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	102	P	30 - 160
EPA 8321B	Acetaminophen-d4	108	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.9	P	30 - 160
EPA 8321B	Diuron-d6	72.3	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Endothall-d6	98.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	96.2	P	30 - 160
EPA 8321B	Primidone-d5	107	P	30 - 160
EPA 8321B	Sucralose-d6	34.0	P	30 - 160
EPA 8321B	Sucralose-d6	34.0	P	30 - 160

Lab Sample ID: 2156462
Field Sample ID: G3SD0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	109	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.0	P	30 - 160
EPA 8321B	Diuron-d6	73.7	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Endothall-d6	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.9	P	30 - 160
EPA 8321B	Primidone-d5	94.4	P	30 - 160
EPA 8321B	Sucralose-d6	35.7	P	30 - 160
EPA 8321B	Sucralose-d6	35.7	P	30 - 160

Lab Sample ID: 2156463
Field Sample ID: G3SD0164

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.2	P	30 - 160
EPA 8321B	Diuron-d6	75.9	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Endothall-d6	117	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	88.0	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	26.8	F	30 - 160
EPA 8321B	Sucralose-d6	26.8	F	30 - 160

Lab Sample ID: 2156464
Field Sample ID: G3SD0079

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	108	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2156464
Field Sample ID: G3SD0079

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.3	P	30 - 160
EPA 8321B	Diuron-d6	67.0	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	30 - 160
EPA 8321B	Endothall-d6	99.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	79.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	87.4	P	30 - 160
EPA 8321B	Sucralose-d6	40.7	P	30 - 160
EPA 8321B	Sucralose-d6	40.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97533
Included Lab Sample IDs: 2156461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	90.7	91.4	P/P	50 - 150
Acetaminophen	107	103	P/P	60 - 160
Acetamiprid	103	104	P/P	50 - 150
Afidopyropen	106	90.8	P/P	50 - 150
Bentazon	106	106	P/P	50 - 160
Benzovindiflupyr	102	96.9	P/P	50 - 150
Carbamazepine	106	103	P/P	60 - 150
Clothianidin	114	97.4	P/P	60 - 150
Dinotefuran	115	95.1	P/P	50 - 150
Diuron	118	119	P/P	60 - 150
Fenuron	107	90.1	P/P	60 - 150
Fluridone	99.3	106	P/P	60 - 160
Hydrocodone	112	107	P/P	60 - 150
Ibuprofen	106	100	P/P	50 - 160
Imazapyr	118	100	P/P	50 - 150
Imidacloprid	101	109	P/P	60 - 150
Linuron	110	102	P/P	60 - 150
Mandestrobin	99.5	94.6	P/P	50 - 150
MCPP	86.1	86.3	P/P	50 - 150
Naproxen	74.5	146	P/P	50 - 160
Primidone	113	105	P/P	60 - 150
Pyraclostrobin	105	104	P/P	60 - 150
Thiamethoxam	111	95.6	P/P	50 - 150
Tolfenpyrad	99.5	98.2	P/P	60 - 150
Triclopyr	98.5	92.7	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A97596
Included Lab Sample IDs: 2156462, 2156463, 2156464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.6	102	P/P	50 - 150
Acetaminophen	111	101	P/P	60 - 160
Acetamiprid	106	110	P/P	50 - 150
Afidopyropen	109	93.7	P/P	50 - 150
Bentazon	93.4	92.2	P/P	50 - 160
Benzovindiflupyr	101	104	P/P	50 - 150
Carbamazepine	107	98.6	P/P	60 - 150
Clothianidin	102	101	P/P	60 - 150
Dinotefuran	104	110	P/P	50 - 150
Diuron	115	99.1	P/P	60 - 150
Fenuron	111	97.5	P/P	60 - 150
Fluridone	106	110	P/P	60 - 160
Hydrocodone	106	99.0	P/P	60 - 150
Ibuprofen	76.7	80.5	P/P	50 - 160
Imazapyr	115	99.2	P/P	50 - 150
Imidacloprid	102	109	P/P	60 - 150
Linuron	102	110	P/P	60 - 150
Mandestrobin	108	108	P/P	50 - 150
MCPP	103	91.8	P/P	50 - 150
Naproxen	80.4	102	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A97596

Included Lab Sample IDs: 2156462, 2156463, 2156464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	100	108	P/P	60 - 150
Pyraclostrobin	111	106	P/P	60 - 150
Thiamethoxam	100	110	P/P	50 - 150
Tolfenpyrad	102	98.5	P/P	60 - 150
Triclopyr	93.0	93.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A97610

Included Lab Sample IDs: 2156461, 2156462, 2156463, 2156464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	125	126	P/P	60 - 160
Glufosinate	144	134	P/P	60 - 160
Glyphosate	151	145	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97613

Included Lab Sample IDs: 2156461, 2156462, 2156463, 2156464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.3	145	P/P	60 - 160
Endothall	95.1	104	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A97906

Included Lab Sample IDs: 2156461, 2156462, 2156463, 2156464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	94.8	111	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	122	133	127		4.03
	2,4-D	153	147	131		11.2
	Acesulfame K	136	28.6	28.2		1.46
	Acetaminophen	93.0	100	106		4.95
	Acetaminophen	99.8	99.5	95.4		4.22
	Acetamiprid	89.9	93.4	83.3		11.4
	Acetamiprid	86.9	92.1	80.5		13.5
	Afidopyropen	75.9	97.8	86.7		12.0
	Afidopyropen	99.3	79.8	88.8		10.7
	AMPA	121	109	108		1.19
	Bentazon	84.8	72.7	69.3		4.81
	Bentazon	88.8	67.9	55.5		14.7
	Benzovindiflupyr	80.0	84.7	80.7		4.87
	Benzovindiflupyr	86.7	70.0	69.2		1.12
	Carbamazepine	89.4	88.3	71.8		20.5
	Carbamazepine	105				1.04
	Clothianidin	91.1	99.7	83.6		16.4
	Clothianidin	86.1	93.8	99.4		5.81
	Dinotefuran	90.1	112	103		8.57
	Dinotefuran	118	116	129		10.7
	Diuron	89.6	77.2	76.9		0.306
	Diuron	86.7	69.4	63.7		8.60
	Endothall	103	102	103		1.69
	Fenuron	109	76.7	88.4		14.1
	Fenuron	124	90.8	90.9		0.113
	Fluridone	87.7	86.7	85.7		1.17
	Fluridone	96.2	73.7	74.9		0.751
	Glufosinate	128	119	119		0.0647
	Glyphosate	136	129	137		6.02
	Hydrocodone	101	93.6	107		13.7
	Hydrocodone	105	109	102		5.72
	Ibuprofen	76.8	81.7	84.0		2.75
	Ibuprofen	105	77.7	75.2		3.27
	Imazapyr	105				0.0409
	Imazapyr	122				2.72
	Imidacloprid	109	163	172		4.52
	Imidacloprid	111	151	149		1.02
	Linuron	70.7	66.9	65.0		2.85
	Linuron	81.1	69.1	65.8		4.81
	Mandestrobin	83.6	84.3	83.1		1.43
	Mandestrobin	100	78.8	81.5		3.34
	MCPP	122	133	131		1.48
	MCPP	158	141	129		8.71
	Naproxen	77.0	99.7	102		2.70
	Naproxen	90.9	69.2	60.1		14.1
	Primidone	98.2	103	96.6		6.40
	Primidone	111	96.3	100		3.98
	Pyraclostrobin	76.4	81.7	84.6		3.55
	Pyraclostrobin	91.1	76.9	71.5		7.30
	Sucralose	92.3	48.8	62.2		21.8
	Thiamethoxam	69.0	132	113		14.7
	Thiamethoxam	111	129	147		13.4
	Tolfenpyrad	49.7	49.2	55.7		12.5
	Tolfenpyrad	58.8	47.7	48.0		0.649

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	MS
					SMP	
EPA 8321B	Triclopyr	95.5	106	108		1.73
	Triclopyr	109	113	107		5.61

Reference Method Descriptions

Method	Description	Associated Samples
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2156461, 2156462, 2156463, 2156464
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2156461, 2156462, 2156463, 2156464

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	02/11/2020	02/12/2020 09:30	Hoor Shaik	02/15/2020 08:22	Juyoung Kim	2156461
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/13/2020 12:56	Rebecca Ware	2156461
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/13/2020 13:07	Rebecca Ware	2156462
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/13/2020 13:17	Rebecca Ware	2156463
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/13/2020 13:28	Rebecca Ware	2156464
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/14/2020 10:48	Rebecca Ware	2156461
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/14/2020 11:02	Rebecca Ware	2156462
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/14/2020 11:16	Rebecca Ware	2156463
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/14/2020 11:30	Rebecca Ware	2156464
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/25/2020 12:35	Rebecca Ware	2156461
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/25/2020 12:47	Rebecca Ware	2156462
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/25/2020 12:58	Rebecca Ware	2156463
	02/11/2020	02/13/2020 10:45	Rebecca Ware	02/25/2020 13:10	Rebecca Ware	2156464
	02/11/2020	02/17/2020 08:25	Hoor Shaik	02/17/2020 22:23	Juyoung Kim	2156462
	02/11/2020	02/17/2020 08:25	Hoor Shaik	02/17/2020 22:57	Juyoung Kim	2156463
	02/11/2020	02/17/2020 08:25	Hoor Shaik	02/17/2020 23:32	Juyoung Kim	2156464