Chemical Analysis Report

SO-DIST-2021-02-24-03

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

Event Description: **2021 SMP: Tri-County Fair**
Request ID: **RQ-2021-02-15-38**
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: Chris Hormuth

For additional information please contact
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Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 16-MAR-2021 13:45

NON-CONFORMANCE REPORT INCLUDED

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 groups are included in this report: Metals and 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: OakCreek@OakCrkPreserve **Collection Date/Time: 02/16/2021 12:25**

Field ID: G1SD0050 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227262	EPA 8321B	Acesulfame K	0.10	UYQ	ug/L	P394168	
		2,4-D	0.0020	UYQ	ug/L	P394079	
		AMPA	0.10	UYQ	ug/L	P394168	
		2,4,5-T	0.0040	UYQ	ug/L	P394079	
		Sucralose	0.012	IY	ug/L	P394168	
		Acetaminophen**	0.0080	UYQ	ug/L	P394079	
		Endothall	0.25	UYQ	ug/L	P394168	
		Acetamiprid**	0.0020	UYQ	ug/L	P394079	
		Glufosinate	0.10	UYQ	ug/L	P394168	
		Glyphosate	0.32	IYQJ	ug/L	P394168	LCS
		Afidopyropen**	0.0020	UYQ	ug/L	P394079	
		Bentazon	0.12	YQ	ug/L	P394079	
		Benzovindiflupyr**	0.0020	UYQ	ug/L	P394079	
		Carbamazepine**	8.0E-04	UYQ	ug/L	P394079	
		Clothianidin**	0.0020	UYQ	ug/L	P394079	
		Dinotefuran**	0.0020	UYQ	ug/L	P394079	
		Diuron	0.0020	UYQ	ug/L	P394079	
		Fenuron	0.016	UYQ	ug/L	P394079	
		Fluridone**	0.046	YQ	ug/L	P394079	
		Imazapyr**	0.060	YQ	ug/L	P394079	
		Hydrocodone**	0.0020	UYQ	ug/L	P394079	
		Ibuprofen**	0.020	UYQ	ug/L	P394079	
		Imidacloprid	0.041	YQ	ug/L	P394079	
		Linuron	0.0040	UYQ	ug/L	P394079	
		Mandestrobin**	0.0020	UYQ	ug/L	P394079	
		MCPP	0.0020	UYQ	ug/L	P394079	
		Naproxen**	0.0080	UYQ	ug/L	P394079	
		Primidone**	0.0040	UYQ	ug/L	P394079	
		Pyraclostrobin**	0.0020	UYQ	ug/L	P394079	
		Thiamethoxam**	0.0020	UYQ	ug/L	P394079	
		Tolfenpyrad**	0.0020	UYQ	ug/L	P394079	
		Triclopyr**	0.0040	UYQ	ug/L	P394079	

Ref. Method and Comment:
EPA 8321B: Sample expired prior to receipt. Y - Sample was received with inadequate sample preservation; see NCR report. Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8321B: Sample expired prior to receipt. Y - Sample was received with inadequate sample preservation; see NCR report. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8321B: Y - Sample was received with inadequate sample preservation; see NCR report.

Sample Location: Drainage Ditch @ CR850 **Collection Date/Time: 02/16/2021 09:00**

Field ID: G1SD0061 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227263	EPA 200.7 Rev. 4.4	Barium	25.9		ug/L	P394226	
		Calcium	99.5		mg/L	P394226	
		Iron	2.27E+03		ug/L	P394226	
		Magnesium	4.64		mg/L	P394226	
		Manganese	33.1		ug/L	P394226	
		Potassium	4.4		mg/L	P394226	
		Sodium	12.2		mg/L	P394226	
		Zinc	5.0	U	ug/L	P394226	
	EPA 200.8 Rev. 5.4	Aluminum	395		ug/L	P394226	
		Antimony	0.081	I	ug/L	P394226	
		Arsenic	1.26		ug/L	P394226	
		Boron**	45.8		ug/L	P394226	
		Cadmium	0.020	U	ug/L	P394226	
		Chromium	2.0		ug/L	P394226	
		Copper	0.75	I	ug/L	P394226	
		Lead	0.31	I	ug/L	P394226	
		Nickel	1.3	I	ug/L	P394226	
		Selenium	0.20	U	ug/L	P394226	MS, RPD
		Silver	0.010	U	ug/L	P394226	
		Thallium	0.10	U	ug/L	P394226	
	SM 2340B	Hardness	267		mg/L	P394226	

Sample Location: C-139Annex@DeerFenceRd **Collection Date/Time: 02/16/2021 10:30**

Field ID: G1SD0076 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2227261	EPA 8276	Chlordane	5.2	UYQ	ng/L	P394215	
		Toxaphene	31	UYQ	ng/L	P394215	

Ref. Method and Comment:
EPA 8276: Sample expired for preparation before receipt.; Y - Due to improper preservation; see NCR report.

Non-Conformance Report

NCR ID: 8679

Event(s)	Job(s)	Sample(s)	Test(s)
SO-DIST-2021-02-24-03			

NCR Type: SHIPPING/RECEIVING **NCR Category: Samples arrived late**

Observation: Samples arrived late by FedEx; samples received outside the acceptable temperature range.

Resolution: Samples will be qualified as appropriate.
Customer (Curtis Musson) contacted by phone, requested that only organic, metals, and OV-Micro samples be logged in.
Biology and Chemistry supervisors were notified email.

Authorized by/Date: Joshua Ayres 3/1/2021

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394226

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394226

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 8276
Batch ID: P394215

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P394079

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P394079

Component	Result	Code	Units
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: P394168

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 200.7 Rev. 4.4
Batch ID: P394226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	91.5		P	85 - 115
Calcium	103		P	85 - 115
Iron	96.3		P	85 - 115
Magnesium	97.2		P	85 - 115
Manganese	93.7		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	102		P	85 - 115
Zinc	99.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394226

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.2		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	99.2		P	85 - 115
Boron	96.4		P	85 - 115
Cadmium	97.7		P	85 - 115
Chromium	96.5		P	85 - 115
Copper	97.9		P	85 - 115
Lead	105		P	85 - 115
Nickel	97.2		P	85 - 115
Selenium	100		P	85 - 115
Silver	104		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 8276
Batch ID: P394215

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	107	106	P/P	56 - 117
Toxaphene	112	110	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P394079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	30 - 160
2,4,5-T	87.1		P	30 - 160
Acetaminophen	76.0		P	30 - 160
Acetamiprid	81.0		P	30 - 160
Afidopyropen	51.2		P	30 - 160
Bentazon	64.0		P	30 - 160
Benzovindiflupyr	77.1		P	30 - 160
Carbamazepine	104		P	30 - 160
Clothianidin	99.3		P	30 - 160
Dinotefuran	85.4		P	30 - 160
Diuron	70.1		P	30 - 160
Fenuron	107		P	30 - 160
Fluridone	88.3		P	30 - 160
Hydrocodone	103		P	30 - 160
Ibuprofen	71.4		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P394079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Imazapyr	81.8		P	30 - 160
Imidacloprid	104		P	30 - 160
Linuron	74.2		P	30 - 160
Mandestrobin	84.6		P	30 - 160
MCPP	95.8		P	30 - 160
Naproxen	49.5		P	30 - 160
Primidone	101		P	30 - 160
Pyraclostrobin	80.5		P	30 - 160
Thiamethoxam	99.4		P	30 - 160
Tolfenpyrad	52.0		P	30 - 160
Triclopyr	82.9		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394168

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	75.2		P	40 - 150
AMPA	87.0		P	40 - 150
Endothall	104		P	40 - 150
Glufosinate	98.5		P	40 - 150
Glyphosate	150		F	40 - 140
Sucralose	117		P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227040	Barium	98.6	99.5	P/P	80 - 120
2227040	Calcium	104		P	80 - 120
2227040	Iron	101	103	P/P	80 - 120
2227040	Magnesium	95.5		P	80 - 120
2227040	Manganese	101	101	P/P	80 - 120
2227040	Potassium	103	106	P/P	80 - 120
2227040	Sodium	104		P	80 - 120
2227040	Zinc	114	114	P/P	80 - 120
2227248	Barium	101		P	80 - 120
2227248	Calcium	104		P	80 - 120
2227248	Iron	103		P	80 - 120
2227248	Magnesium	99.2		P	80 - 120
2227248	Manganese	102		P	80 - 120
2227248	Potassium	99.3		P	80 - 120
2227248	Sodium	103		P	80 - 120
2227248	Zinc	119		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227040	Aluminum	96.7	97.0	P/P	80 - 120
2227040	Antimony	102	102	P/P	80 - 120
2227040	Arsenic	101	102	P/P	80 - 120
2227040	Boron	102	103	P/P	80 - 120
2227040	Cadmium	102	102	P/P	80 - 120
2227040	Chromium	97.7	98.3	P/P	80 - 120
2227040	Copper	92.9	97.1	P/P	80 - 120
2227040	Lead	107	108	P/P	80 - 120
2227040	Nickel	95.2	97.5	P/P	80 - 120
2227040	Selenium	15.8	11.0	F/F	80 - 120
2227040	Silver	105	105	P/P	80 - 120
2227040	Thallium	107	109	P/P	80 - 120
2227248	Aluminum	97.3		P	80 - 120
2227248	Antimony	96.1		P	80 - 120
2227248	Arsenic	98.6		P	80 - 120
2227248	Boron	101		P	80 - 120
2227248	Cadmium	97.8		P	80 - 120
2227248	Chromium	94.1		P	80 - 120
2227248	Copper	95.9		P	80 - 120
2227248	Lead	107		P	80 - 120
2227248	Nickel	96.1		P	80 - 120
2227248	Selenium	97.5		P	80 - 120
2227248	Silver	103		P	80 - 120
2227248	Thallium	109		P	80 - 120

Reference Method: EPA 8276
Batch ID: P394215

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227531	Chlordane	101	103	P/P	47 - 128
2227531	Toxaphene	135	134	P/P	11 - 163

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P394079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227057	2,4-D	91.2	81.8	P/P	30 - 160
2227057	2,4,5-T	77.4	73.4	P/P	30 - 160
2227057	Acetaminophen	94.8	94.8	P/P	30 - 160
2227057	Acetamiprid	91.2	103	P/P	30 - 160
2227057	Afidopyropen	74.9	77.0	P/P	30 - 160
2227057	Benzovindiflupyr	72.0	71.1	P/P	30 - 160
2227057	Clothianidin	101	88.7	P/P	30 - 160
2227057	Dinotefuran	114	113	P/P	30 - 160
2227057	Diuron	53.6	50.8	P/P	30 - 160
2227057	Fenuron	74.0	64.4	P/P	30 - 160
2227057	Fluridone	48.9	74.1	P/P	30 - 160
2227057	Hydrocodone	100	94.1	P/P	30 - 160
2227057	Ibuprofen	51.7	62.0	P/P	30 - 160
2227057	Imazapyr	81.8	64.3	P/P	30 - 160
2227057	Imidacloprid	138	139	P/P	30 - 160
2227057	Linuron	53.8	53.9	P/P	30 - 160
2227057	Mandestrobin	78.3	81.7	P/P	30 - 160
2227057	MCPP	78.5	81.6	P/P	30 - 160
2227057	Naproxen	58.9	54.8	P/P	30 - 160
2227057	Primidone	92.1	82.5	P/P	30 - 160
2227057	Pyraclostrobin	79.5	79.8	P/P	30 - 160
2227057	Thiamethoxam	116	112	P/P	30 - 160
2227057	Tolfenpyrad	58.4	61.7	P/P	30 - 160
2227057	Triclopyr	76.0	80.8	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227238	Acesulfame K	49.0	51.8	P/P	40 - 150
2227238	AMPA	101	105	P/P	40 - 150
2227238	Endothall	101	106	P/P	40 - 150
2227238	Glufosinate	104	110	P/P	40 - 150
2227238	Glyphosate	126	132	P/P	40 - 140
2227238	Sucralose	102	102	P/P	40 - 150

Quality Assurance Report
Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227040	Barium	0.861	Spike	P	0 - 20
2227040	Calcium	1.27	Spike	P	0 - 20
2227040	Iron	1.97	Spike	P	0 - 20
2227040	Magnesium	0.756	Spike	P	0 - 20
2227040	Manganese	0.000344	Spike	P	0 - 20
2227040	Potassium	2.75	Spike	P	0 - 20
2227040	Sodium	0.305	Spike	P	0 - 20
2227040	Zinc	0.605	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227040	Aluminum	0.372	Spike	P	0 - 20
2227040	Antimony	0.0734	Spike	P	0 - 20
2227040	Arsenic	0.714	Spike	P	0 - 20
2227040	Boron	0.543	Spike	P	0 - 20
2227040	Cadmium	0.0846	Spike	P	0 - 20
2227040	Chromium	0.621	Spike	P	0 - 20
2227040	Copper	3.90	Spike	P	0 - 20
2227040	Lead	0.885	Spike	P	0 - 20
2227040	Nickel	2.30	Spike	P	0 - 20
2227040	Selenium	36.2	Spike	F	0 - 20
2227040	Silver	0.266	Spike	P	0 - 20
2227040	Thallium	2.28	Spike	P	0 - 20

Reference Method: EPA 8276
Batch ID: P394215

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227531	Chlordane	1.25	Spike	P	0 - 30
2227531	Toxaphene	0.781	Spike	P	0 - 30
LFB	Chlordane	1.02	LCS	P	0 - 30
LFB	Toxaphene	1.78	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227057	2,4-D	9.45	Spike	P	0 - 30
2227057	2,4,5-T	5.39	Spike	P	0 - 30
2227057	Acetaminophen	0.00359	Spike	P	0 - 30
2227057	Acetamiprid	12.0	Spike	P	0 - 30
2227057	Afidopyropen	2.82	Spike	P	0 - 30
2227057	Bentazon	15.4	Spike	P	0 - 30
2227057	Benzovindiflupyr	1.35	Spike	P	0 - 30
2227057	Carbamazepine	1.80	Spike	P	0 - 30
2227057	Clothianidin	12.4	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P394079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227057	Dinotefuran	0.775	Spike	P	0 - 30
2227057	Diuron	4.40	Spike	P	0 - 30
2227057	Fenuron	13.9	Spike	P	0 - 30
2227057	Fluridone	26.5	Spike	P	0 - 30
2227057	Hydrocodone	6.38	Spike	P	0 - 30
2227057	Ibuprofen	18.1	Spike	P	0 - 30
2227057	Imazapyr	10.5	Spike	P	0 - 30
2227057	Imidacloprid	0.158	Spike	P	0 - 30
2227057	Linuron	0.228	Spike	P	0 - 30
2227057	Mandestrobin	4.30	Spike	P	0 - 30
2227057	MCPP	3.90	Spike	P	0 - 30
2227057	Naproxen	7.23	Spike	P	0 - 30
2227057	Primidone	7.28	Spike	P	0 - 30
2227057	Pyraclostrobin	0.409	Spike	P	0 - 30
2227057	Thiamethoxam	4.03	Spike	P	0 - 30
2227057	Tolfenpyrad	5.54	Spike	P	0 - 30
2227057	Triclopyr	6.03	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227238	Acesulfame K	5.71	Spike	P	0 - 30
2227238	AMPA	3.97	Spike	P	0 - 30
2227238	Endothall	5.33	Spike	P	0 - 30
2227238	Glufosinate	5.82	Spike	P	0 - 30
2227238	Glyphosate	3.81	Spike	P	0 - 30
2227238	Sucralose	0.0536	Spike	P	0 - 30

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2227261
Field Sample ID: G1SD0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	80.7	P	29 - 92.0
EPA 8276	PCNB	98.2	P	43 - 134

Lab Sample ID: 2227262
Field Sample ID: G1SD0050

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	75.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.8	P	30 - 160
EPA 8321B	Diuron-d6	59.6	P	30 - 160
EPA 8321B	Endothall-d6	86.6	P	40 - 160
EPA 8321B	Endothall-d6	86.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	40 - 160
EPA 8321B	Ibuprofen-d3	53.7	P	30 - 160
EPA 8321B	Primidone-d5	74.8	P	30 - 160
EPA 8321B	Sucralose-d6	137	P	30 - 160
EPA 8321B	Sucralose-d6	137	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A103756
Included Lab Sample IDs: 2227262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.3	97.8	P/P	50 - 150
2,4,5-T	82.7	80.4	P/P	50 - 150
Acetaminophen	79.8	75.5	P/P	60 - 160
Acetamiprid	109	103	P/P	50 - 150
Afidopyropen	88.8	96.8	P/P	50 - 150
Bentazon	98.0	103	P/P	50 - 160
Benzovindiflupyr	103	99.4	P/P	50 - 160
Carbamazepine	107	99.7	P/P	60 - 150
Clothianidin	96.4	94.5	P/P	60 - 150
Dinotefuran	92.4	98.8	P/P	50 - 150
Diuron	122	118	P/P	60 - 160
Fenuron	103	94.3	P/P	60 - 150
Fluridone	99.1	109	P/P	60 - 160
Hydrocodone	103	98.1	P/P	60 - 150
Ibuprofen	86.9		P	50 - 160
Imazapyr	93.1	89.5	P/P	50 - 160
Imidacloprid	95.9	97.3	P/P	60 - 150
Linuron	104	103	P/P	60 - 150
Mandestrobin	112	113	P/P	50 - 150
MCPP	91.6		P	50 - 150
Naproxen	112		P	50 - 160
Primidone	84.6	85.3	P/P	60 - 150
Pyraclostrobin	110	121	P/P	60 - 150
Thiamethoxam	102	105	P/P	50 - 150
Tolfenpyrad	108	112	P/P	60 - 150
Triclopyr	97.0		P	50 - 150

Reference Method: EPA 8321B
Run ID: A103768
Included Lab Sample IDs: 2227262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	81.4	66.4	P/P	60 - 160
AMPA	97.5	97.3	P/P	60 - 160
Endothall	112	93.9	P/P	60 - 160
Glufosinate	106	77.2	P/P	60 - 160
Glyphosate	138	132	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103829
Included Lab Sample IDs: 2227263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	105	P/P	90 - 110
Calcium	99.9	102	P/P	90 - 110
Iron	99.2	101	P/P	90 - 110
Magnesium	99.0	101	P/P	90 - 110
Manganese	103	104	P/P	90 - 110
Potassium	100	101	P/P	90 - 110
Sodium	99.4	101	P/P	90 - 110
Zinc	91.4	95.3	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8276
Run ID: A103909
Included Lab Sample IDs: 2227261

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	96.9		P	80 - 120
Toxaphene	104		P	80 - 120

Reference Method: EPA 8321B
Run ID: A103914
Included Lab Sample IDs: 2227262

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	120	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A104051
Included Lab Sample IDs: 2227263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	101	P/P	90 - 110
Antimony	98.2	97.7	P/P	90 - 110
Arsenic	99.4	99.5	P/P	90 - 110
Boron	106	106	P/P	90 - 110
Cadmium	99.7	99.4	P/P	90 - 110
Chromium	97.1	95.1	P/P	90 - 110
Copper	97.7	95.2	P/P	90 - 110
Lead	109	109	P/P	90 - 110
Nickel	97.8	95.0	P/P	90 - 110
Selenium	101	99.9	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	104	103	P/P	90 - 110

* 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 200.7 Rev. 4.4	Barium	91.5		98.6	99.5	101			0.861
	Calcium	103		104	104				1.27
	Iron	96.3		101	103	103			1.97
	Magnesium	97.2		95.5	99.2				0.756
	Manganese	93.7		101	101	102			0.0003
	Potassium	98.8		103	106	99.3			2.75
	Sodium	102		104	103				0.305
	Zinc	99.3		114	114	119			0.605
EPA 200.8 Rev. 5.4	Aluminum	95.2		96.7	97.0	97.3			0.372
	Antimony	99.6		102	102	96.1			0.0734
	Arsenic	99.2		101	102	98.6			0.714
	Boron	96.4		102	103	101			0.543
	Cadmium	97.7		102	102	97.8			0.0846
	Chromium	96.5		97.7	98.3	94.1			0.621
	Copper	97.9		92.9	97.1	95.9			3.90
	Lead	105		107	108	107			0.885
	Nickel	97.2		95.2	97.5	96.1			2.30
	Selenium	100		15.8	11.0	97.5			36.2
	Silver	104		105	105	103			0.266
	Thallium	101		107	109	109			2.28
EPA 8276	Chlordane	106	107	101	103		1.02		1.25
	Toxaphene	112	110	135	134		1.78		0.781
EPA 8321B	2,4-D	114		91.2	81.8				9.45
	2,4,5-T	87.1		77.4	73.4				5.39
	Acesulfame K	75.2		49.0	51.8				5.71
	Acetaminophen	76.0		94.8	94.8				0.0035
	Acetamiprid	81.0		91.2	103				12.0
	Afidopyropen	51.2		74.9	77.0				2.82
	AMPA	87.0		101	105				3.97
	Bentazon	64.0							15.4
	Benzovindiflupyr	77.1		72.0	71.1				1.35
	Carbamazepine	104							1.80
	Clothianidin	99.3		101	88.7				12.4
	Dinotefuran	85.4		114	113				0.775
	Diuron	70.1		53.6	50.8				4.40
	Endothall	104		101	106				5.33
	Fenuron	107		74.0	64.4				13.9
	Fluridone	88.3		48.9	74.1				26.5
	Glufosinate	98.5		104	110				5.82
	Glyphosate	150		126	132				3.81
	Hydrocodone	103		100	94.1				6.38
	Ibuprofen	71.4		51.7	62.0				18.1
	Imazapyr	81.8		81.8	64.3				10.5
	Imidacloprid	104		138	139				0.158
	Linuron	74.2		53.8	53.9				0.228
	Mandestrobin	84.6		78.3	81.7				4.30
	MCPP	95.8		78.5	81.6				3.90
	Naproxen	49.5		58.9	54.8				7.23
	Primidone	101		92.1	82.5				7.28
	Pyraclostrobin	80.5		79.5	79.8				0.409
	Sucralose	117		102	102				0.0536
	Thiamethoxam	99.4		116	112				4.03
	Tolfenpyrad	52.0		58.4	61.7				5.54
	Triclopyr	82.9		76.0	80.8				6.03

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2227263
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2227263
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2227261
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2227262
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2227262
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2227263

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	02/24/2021	02/25/2021 16:25	Elliott D. Healy	03/02/2021 03:27	Betina Topolski	2227263
EPA 200.8 Rev. 5.4	02/24/2021	02/25/2021 16:25	Elliott D. Healy	03/12/2021 19:05	Josef B Mick	2227263
EPA 8276	02/24/2021	03/01/2021 08:30	Rasheda Ghaffari	03/04/2021 04:19	Julie Wi	2227261
EPA 8321B	02/24/2021	02/24/2021 14:46	Rebecca Ware	02/24/2021 17:46	Rebecca Ware	2227262
	02/24/2021	02/24/2021 14:46	Rebecca Ware	03/04/2021 19:38	Rebecca Ware	2227262
	02/24/2021	02/24/2021 15:00	Hoor Shaik	02/25/2021 11:29	Juyoung Kim	2227262
	02/24/2021	02/24/2021 15:00	Hoor Shaik	02/25/2021 14:57	Juyoung Kim	2227262
SM 2340B	02/24/2021			03/02/2021 03:27	Betina Topolski	2227263