

Chemical Analysis Report

NW-DIST-2023-05-25-05

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

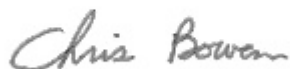
Event Description: **Laurel Hill West**
Request ID: **RQ-2023-05-22-22**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
160 W Government Street
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Myranda Butler

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

Certified by: Chris Bowen, Environmental Administrator

Date Certified: 09-JUN-2023 12:57



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: BAGGETT CREEK UPSTREAM OF HWY 90

Collection Date/Time: 05/23/2023 12:28

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412861	EPA 8270E	Aldrin	0.66	U	ng/L	P430434	
		Alpha-BHC	0.10	U	ng/L	P430434	
		Alpha-Chlordane	0.20	U	ng/L	P430434	
		PCB-1016	2.0	U	ng/L	P430434	
		Beta-BHC	0.10	U	ng/L	P430434	
		PCB-1221	2.0	U	ng/L	P430434	
		Beta-Cyfluthrin	1.3	U	ng/L	P430434	
		PCB-1232	2.0	U	ng/L	P430434	
		Bifenthrin	0.51	U	ng/L	P430434	
		PCB-1242	2.0	U	ng/L	P430434	
		PCB-1248	2.0	U	ng/L	P430434	
		Chlorothalonil	3.7	U	ng/L	P430434	
		PCB-1254	2.0	U	ng/L	P430434	
		Cis-Nonachlor	0.20	U	ng/L	P430434	
		PCB-1260	2.0	U	ng/L	P430434	
		Cypermethrin	1.5	U	ng/L	P430434	
		Dacthal	0.15	U	ng/L	P430434	
		DDD-p,p'	0.26	U	ng/L	P430434	
		DDE-p,p'	0.20	U	ng/L	P430434	
		DDT-p,p'	0.26	I	ng/L	P430434	
		Delta-BHC	0.41	U	ng/L	P430434	
		Deltamethrin	1.3	U	ng/L	P430434	
		Dichlobenil	0.26	U	ng/L	P430434	
		Dicofol	1.3	U	ng/L	P430434	
		Dieldrin	0.41	U	ng/L	P430434	
		Endosulfan I	0.41	U	ng/L	P430434	
		Endosulfan II	0.41	U	ng/L	P430434	
		Endosulfan Sulfate	0.31	U	ng/L	P430434	
		Endrin	0.41	U	ng/L	P430434	
		Endrin Aldehyde	0.77	U	ng/L	P430434	
		Endrin Ketone	0.41	U	ng/L	P430434	
		Esfenvalerate	0.77	U	ng/L	P430434	
		Ethalfuralin	0.15	U	ng/L	P430434	
		Fenpropathrin	0.26	U	ng/L	P430434	
		Gamma-BHC	0.13	U	ng/L	P430434	RPD
		Gamma-Chlordane	0.20	U	ng/L	P430434	
		Heptachlor	0.20	U	ng/L	P430434	
		Heptachlor Epoxide	0.26	U	ng/L	P430434	
		Hexachlorobenzene**	1.0	U	ng/L	P430434	
		Kepone	5.1	UJ	ng/L	P430434	CCV
		Lambda-Cyhalothrin	0.77	U	ng/L	P430434	
		Methoprene	0.77	U	ng/L	P430434	
		Methoxychlor	0.31	U	ng/L	P430434	
		MGK-264	0.20	U	ng/L	P430434	

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412861	EPA 8270E	Mirex	0.36	U	ng/L	P430434	
		Oxychlordane	0.31	U	ng/L	P430434	
		Permethrin	1.6	U	ng/L	P430434	
		Phenothrin	0.92	U	ng/L	P430434	
		Piperonyl Butoxide	0.15	U	ng/L	P430434	
		Prallethrin	2.0	U	ng/L	P430434	
		Tau-Fluvalinate	0.26	U	ng/L	P430434	
		Tetramethrin	0.77	U	ng/L	P430434	
		Trans-Nonachlor	0.20	U	ng/L	P430434	
		Triclosan Methyl	0.15	U	ng/L	P430434	
		Trifluralin	0.20	U	ng/L	P430434	
	EPA 8276	Chlordane	2.0	U	ng/L	P430434	
		Toxaphene	15	U	ng/L	P430434	
2412865	EPA 200.7 Rev. 4.4	Calcium	2.65		mg/L	P430463	
		Iron	680		ug/L	P430463	
		Magnesium	1.34		mg/L	P430463	
		Potassium	0.48	I	mg/L	P430463	
		Sodium	2.5		mg/L	P430463	
		Strontium	12.4		ug/L	P430463	
		Tin	3.0	U	ug/L	P430463	
		Titanium	0.75	U	ug/L	P430463	
		Vanadium	2.0	U	ug/L	P430463	
		Zinc	5.0	U	ug/L	P430463	
	EPA 200.8 Rev. 5.4	Aluminum	68		ug/L	P430463	
		Antimony	0.050	U	ug/L	P430463	
		Arsenic	0.39		ug/L	P430463	
		Barium	25.8		ug/L	P430463	
		Beryllium	0.010	U	ug/L	P430463	
		Boron	9.4		ug/L	P430463	
		Cadmium	0.020	U	ug/L	P430463	
		Chromium	0.40	U	ug/L	P430463	
		Cobalt	0.138		ug/L	P430463	
		Copper	0.40	U	ug/L	P430463	
		Lead	0.20	U	ug/L	P430463	
		Manganese	13.0		ug/L	P430463	
		Molybdenum	0.15	U	ug/L	P430463	
		Nickel	0.50	U	ug/L	P430463	
		Selenium	0.20	U	ug/L	P430463	
		Silver	0.010	U	ug/L	P430463	
		Thallium	0.10	U	ug/L	P430463	
	SM 2340 B-2011	Hardness	12.1		mg/L	P430463	

Ref. Method and Comment:

EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: OAK CREEK BELOW TOMMY STEELE ROAD Collection Date/Time: 05/23/2023 10:10

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412862	EPA 8321B	2,4-D	0.0020	U	ug/L	P430400	
		Acesulfame K	0.10	U	ug/L	P430433	
		2,4,5-T	0.0040	U	ug/L	P430400	
		AMPA	0.10	U	ug/L	P430433	
		Acetaminophen	0.0080	U	ug/L	P430400	
		Acetamiprid	0.0020	U	ug/L	P430400	
		Endothall	0.25	U	ug/L	P430433	
		Glufosinate	0.10	U	ug/L	P430433	
		Glyphosate	0.10	U	ug/L	P430433	
		Afidopyropen	0.0020	U	ug/L	P430400	
		Bentazon	8.0E-04	U	ug/L	P430400	
		Sucralose	0.046		ug/L	P430433	
		Benzovindiflupyr	0.0020	U	ug/L	P430400	
		Carbamazepine	8.0E-04	U	ug/L	P430400	
		Clothianidin	0.0020	U	ug/L	P430400	
		Dinotefuran	0.0020	U	ug/L	P430400	
		Diuron	0.0020	U	ug/L	P430400	
		Fenuron	0.032	U	ug/L	P430400	
		Fluridone	8.0E-04	U	ug/L	P430400	
		Imazapyr	0.0040	U	ug/L	P430400	
		Hydrocodone	0.0020	U	ug/L	P430400	
		Ibuprofen	0.080	U	ug/L	P430400	
		Imidacloprid	0.0020	U	ug/L	P430400	
		Linuron	0.0040	U	ug/L	P430400	
		Mandestrobin	0.0020	U	ug/L	P430400	
		MCPP	0.0020	U	ug/L	P430400	
		Naproxen	0.0080	U	ug/L	P430400	MS
		Primidone	0.0040	U	ug/L	P430400	
		Pyraclostrobin	0.0020	U	ug/L	P430400	
		Silvex	0.0040	U	ug/L	P430400	
		Thiamethoxam	0.0020	U	ug/L	P430400	
		Tolfenpyrad	0.0020	U	ug/L	P430400	
		Triclopyr	0.0040	U	ug/L	P430400	
2412864	EPA 200.7 Rev. 4.4	Calcium	1.97		mg/L	P430463	
		Iron	3.26E+03		ug/L	P430463	
		Magnesium	0.93		mg/L	P430463	
		Potassium	0.53	I	mg/L	P430463	
		Sodium	1.8	I	mg/L	P430463	
		Strontium	11.5		ug/L	P430463	
		Tin	3.0	U	ug/L	P430463	
		Titanium	1.2	I	ug/L	P430463	
		Vanadium	2.0	U	ug/L	P430463	
		Zinc	5.0	U	ug/L	P430463	
	EPA 200.8 Rev. 5.4	Aluminum	172		ug/L	P430463	

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412864	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P430463	
		Arsenic	0.97		ug/L	P430463	
		Barium	25.8		ug/L	P430463	
		Beryllium	0.113		ug/L	P430463	
		Boron	8.8		ug/L	P430463	
		Cadmium	0.020	U	ug/L	P430463	
		Chromium	0.40	U	ug/L	P430463	
		Cobalt	1.28		ug/L	P430463	
		Copper	0.40	U	ug/L	P430463	
		Lead	0.44		ug/L	P430463	
		Manganese	98.3		ug/L	P430463	
		Molybdenum	0.15	U	ug/L	P430463	
		Nickel	1.1	I	ug/L	P430463	
		Selenium	0.20	U	ug/L	P430463	
		Silver	0.010	U	ug/L	P430463	
		Thallium	0.10	U	ug/L	P430463	
	SM 2340 B-2011	Hardness	8.7		mg/L	P430463	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for potassium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

**Sample Location: WILKINSON CREEK UPSTREAM OF
WILKINSON BLUFF ROAD**

Collection Date/Time: 05/23/2023 12:45

Field ID: G4NW0357

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2412863	EPA 8321B	2,4-D	0.0020	U	ug/L	P430400	
		Acesulfame K	0.10	U	ug/L	P430433	
		2,4,5-T	0.0040	U	ug/L	P430400	
		AMPA	0.10	U	ug/L	P430433	
		Acetaminophen	0.0080	U	ug/L	P430400	
		Acetamiprid	0.0020	U	ug/L	P430400	
		Endothall	0.25	U	ug/L	P430433	
		Glufosinate	0.10	U	ug/L	P430433	
		Glyphosate	0.10	U	ug/L	P430433	
		Afidopyropen	0.0020	U	ug/L	P430400	
		Bentazon	8.0E-04	U	ug/L	P430400	
		Sucralose	0.24		ug/L	P430433	
		Benzovindiflupyr	0.0020	U	ug/L	P430400	
		Carbamazepine	8.0E-04	U	ug/L	P430400	
		Clothianidin	0.0020	U	ug/L	P430400	
		Dinotefuran	0.0020	U	ug/L	P430400	
		Diuron	0.0020	U	ug/L	P430400	
		Fenuron	0.032	U	ug/L	P430400	
		Fluridone	8.0E-04	U	ug/L	P430400	
		Imazapyr	0.0040	U	ug/L	P430400	
		Hydrocodone	0.0020	U	ug/L	P430400	
		Ibuprofen	0.080	U	ug/L	P430400	
		Imidacloprid	0.0048	I	ug/L	P430400	
		Linuron	0.0040	U	ug/L	P430400	
		Mandestrobin	0.0020	U	ug/L	P430400	
		MCPP	0.0020	U	ug/L	P430400	
		Naproxen	0.0080	U	ug/L	P430400	MS
		Primidone	0.0040	U	ug/L	P430400	
		Pyraclostrobin	0.0020	U	ug/L	P430400	
		Silvex	0.0040	U	ug/L	P430400	
		Thiamethoxam	0.0020	U	ug/L	P430400	
		Tolfenpyrad	0.0020	U	ug/L	P430400	
		Triclopyr	0.0040	U	ug/L	P430400	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 9901

Event(s)

NW-DIST-2023-05-25-05

Job(s)

Sample(s)

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Samples arrived late

Observation: Samples arrived late, samples received within the acceptable temperature (1.7c)range.

Resolution: Biology and Chemistry supervisors were notified by email.

Authorized by/Date: Kerry Tate, Ph.D. 6/8/2023

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: P430463

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430463

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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 8270E

Batch ID: P430434

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P430434

Component	Result	Code	Units
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P430434

Component	Result	Code	Units
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P430434

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P430400

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	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	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
Silvex	0.0040	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: P430433

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: P430463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	85 - 115
Iron	100		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	102		P	85 - 115
Sodium	101		P	85 - 115
Strontium	103		P	85 - 115
Tin	105		P	85 - 115
Titanium	99.6		P	85 - 115
Vanadium	99.1		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	102		P	85 - 115
Barium	104		P	85 - 115
Beryllium	95.6		P	85 - 115
Boron	102		P	85 - 115
Cadmium	99.7		P	85 - 115
Chromium	97.4		P	85 - 115
Cobalt	101		P	85 - 115
Copper	99.1		P	85 - 115
Lead	101		P	85 - 115
Manganese	98.0		P	85 - 115
Molybdenum	98.9		P	85 - 115
Nickel	100		P	85 - 115
Selenium	103		P	85 - 115
Silver	102		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P430434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	46.4		P	10 - 92.0
Alpha-BHC	81.6		P	75 - 107
Alpha-Chlordane	78.4		P	50 - 108
Beta-BHC	90.5		P	36 - 138
Beta-Cyfluthrin	76.0		P	20 - 161
Bifenthrin	43.0		P	10 - 119
Chlorothalonil	56.8		P	26 - 186
Cis-Nonachlor	72.9		P	42 - 119
Cypermethrin	80.3		P	22 - 150
Dacthal	85.5		P	72 - 119
DDD-p,p'	74.4		P	45 - 107
DDE-p,p'	78.2		P	48 - 106
DDT-p,p'	68.1		P	48 - 110
Delta-BHC	89.9		P	54 - 140
Deltamethrin	85.3		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P430434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	71.3		P	36 - 117
Dicofol	65.8		P	46 - 155
Dieldrin	81.6		P	54 - 110
Endosulfan I	77.2		P	59 - 105
Endosulfan II	85.1		P	51 - 118
Endosulfan Sulfate	79.0		P	57 - 121
Endrin	82.4		P	10 - 120
Endrin Aldehyde	69.1		P	34 - 118
Endrin Ketone	92.3		P	69 - 177
Esfenvalerate	69.4		P	23 - 168
Ethalfuralin	75.0		P	49 - 99.0
Fenpropathrin	61.5		P	34 - 117
Gamma-BHC	95.7		P	72 - 117
Gamma-Chlordane	70.2		P	43 - 106
Heptachlor	65.9		P	41 - 98.0
Heptachlor Epoxide	77.2		P	57 - 106
Hexachlorobenzene	57.7		P	36 - 99.0
Kepone	114		P	16 - 215
Lambda-Cyhalothrin	65.6		P	21 - 177
Methoprene	55.6		P	10 - 119
Methoxychlor	74.2		P	60 - 112
MGK-264	81.3		P	26 - 122
Mirex	58.2		P	10 - 169
Oxychlordane	71.6		P	43 - 105
PCB-1016	69.6		P	48 - 112
PCB-1260	63.7		P	44 - 118
Permethrin	57.1		P	24 - 148
Phenothrin	40.1		P	10 - 106
Piperonyl Butoxide	92.4		P	10 - 139
Prallethrin	70.3		P	17 - 109
Tau-Fluvalinate	62.1		P	13 - 131
Tetramethrin	62.1		P	10 - 132
Trans-Nonachlor	72.9		P	44 - 106
Triclosan Methyl	78.7		P	59 - 109
Trifluralin	71.4		P	44 - 101

Reference Method: EPA 8276
Batch ID: P430434

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	88.7		P	61 - 116
Toxaphene	96.2		P	48 - 124

Reference Method: EPA 8321B
Batch ID: P430400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
2,4,5-T	94.2		P	40 - 150
Acetaminophen	86.3		P	30 - 150
Acetamiprid	72.5		P	40 - 150
Afidopyropen	68.0		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P430400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	122		P	30 - 150
Benzovindiflupyr	78.2		P	40 - 150
Carbamazepine	85.7		P	40 - 150
Clothianidin	87.2		P	40 - 150
Dinotefuran	91.1		P	40 - 150
Diuron	97.4		P	40 - 150
Fenuron	82.8		P	40 - 150
Fluridone	84.8		P	40 - 150
Hydrocodone	86.1		P	40 - 150
Ibuprofen	77.4		P	40 - 150
Imazapyr	90.4		P	40 - 150
Imidacloprid	80.1		P	40 - 150
Linuron	75.9		P	40 - 150
Mandestrobin	83.3		P	40 - 150
MCPP	96.3		P	40 - 150
Naproxen	57.7		P	40 - 150
Primidone	75.4		P	40 - 150
Pyraclostrobin	70.0		P	40 - 150
Silvex	89.4		P	40 - 150
Thiamethoxam	85.7		P	40 - 150
Tolfenpyrad	51.9		P	30 - 150
Triclopyr	89.0		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P430433

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	125		P	40 - 150
AMPA	112		P	40 - 150
Endothall	102		P	40 - 150
Glufosinate	93.1		P	40 - 150
Glyphosate	88.7		P	40 - 150
Sucralose	89.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412328	Calcium	101		P	80 - 120
2412328	Iron	103	102	P/P	80 - 120
2412328	Magnesium	102		P	80 - 120
2412328	Sodium	104		P	80 - 120
2412328	Strontium	105	103	P/P	80 - 120
2412328	Tin	108	105	P/P	80 - 120
2412328	Titanium	103	102	P/P	80 - 120
2412328	Vanadium	105	103	P/P	80 - 120
2412328	Zinc	107	105	P/P	80 - 120
2412685	Calcium	100		P	80 - 120
2412685	Iron	102		P	80 - 120
2412685	Magnesium	100		P	80 - 120
2412685	Potassium	103		P	80 - 120
2412685	Sodium	104		P	80 - 120
2412685	Strontium	104		P	80 - 120
2412685	Tin	105		P	80 - 120
2412685	Titanium	100		P	80 - 120
2412685	Vanadium	101		P	80 - 120
2412685	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412328	Aluminum	99.0	98.1	P/P	80 - 120
2412328	Antimony	105	105	P/P	80 - 120
2412328	Arsenic	102	102	P/P	80 - 120
2412328	Barium	104	104	P/P	80 - 120
2412328	Beryllium	96.2	94.9	P/P	80 - 120
2412328	Boron	101	98.4	P/P	80 - 120
2412328	Cadmium	101	99.7	P/P	80 - 120
2412328	Chromium	95.7	95.7	P/P	80 - 120
2412328	Cobalt	99.1	98.6	P/P	80 - 120
2412328	Copper	96.7	95.5	P/P	80 - 120
2412328	Lead	102	101	P/P	80 - 120
2412328	Manganese	96.3	95.1	P/P	80 - 120
2412328	Molybdenum	101	101	P/P	80 - 120
2412328	Nickel	98.5	97.4	P/P	80 - 120
2412328	Selenium	101	101	P/P	80 - 120
2412328	Silver	102	101	P/P	80 - 120
2412328	Thallium	103	103	P/P	80 - 120
2412685	Aluminum	96.8		P	80 - 120
2412685	Antimony	103		P	80 - 120
2412685	Arsenic	99.3		P	80 - 120
2412685	Barium	101		P	80 - 120
2412685	Beryllium	95.8		P	80 - 120
2412685	Boron	99.2		P	80 - 120
2412685	Cadmium	97.7		P	80 - 120
2412685	Chromium	94.2		P	80 - 120
2412685	Cobalt	97.9		P	80 - 120
2412685	Copper	95.9		P	80 - 120
2412685	Lead	100		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412685	Manganese	96.7		P	80 - 120
2412685	Molybdenum	98.5		P	80 - 120
2412685	Nickel	96.2		P	80 - 120
2412685	Selenium	100		P	80 - 120
2412685	Silver	99.3		P	80 - 120
2412685	Thallium	99.8		P	80 - 120

Reference Method: EPA 8270E

Batch ID: P430434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412668	Aldrin	47.3	51.2	P/P	20 - 82.0
2412668	Alpha-BHC	76.1	78.7	P/P	71 - 109
2412668	Alpha-Chlordane	63.6	69.0	P/P	42 - 106
2412668	Beta-BHC	89.9	83.0	P/P	69 - 180
2412668	Beta-Cyfluthrin	84.1	75.9	P/P	18 - 175
2412668	Bifenthrin	50.7	45.9	P/P	21 - 128
2412668	Chlorothalonil	84.0	58.9	P/P	10 - 300
2412668	Cis-Nonachlor	62.4	61.6	P/P	34 - 106
2412668	Cypermethrin	85.7	79.5	P/P	22 - 158
2412668	Dacthal	90.4	75.4	P/P	54 - 116
2412668	DDD-p,p'	62.4	62.3	P/P	34 - 107
2412668	DDE-p,p'	69.1	69.0	P/P	33 - 110
2412668	DDT-p,p'	62.3	61.4	P/P	50 - 122
2412668	Delta-BHC	87.8	79.3	P/P	77 - 193
2412668	Deltamethrin	96.4	87.8	P/P	10 - 195
2412668	Dichlobenil	46.2	53.3	P/P	25 - 113
2412668	Dicofol	67.2	59.0	P/P	38 - 247
2412668	Dieldrin	74.1	71.3	P/P	45 - 118
2412668	Endosulfan I	69.1	67.8	P/P	51 - 106
2412668	Endosulfan II	75.7	75.4	P/P	37 - 122
2412668	Endosulfan Sulfate	73.4	69.8	P/P	43 - 132
2412668	Endrin	69.2	72.3	P/P	29 - 101
2412668	Endrin Aldehyde	60.3	64.4	P/P	19 - 110
2412668	Endrin Ketone	110	115	P/P	60 - 140
2412668	Esfenvalerate	81.1	75.0	P/P	26 - 199
2412668	Ethalfuralin	66.6	70.9	P/P	45 - 99.0
2412668	Fenpropathrin	65.8	64.2	P/P	35 - 120
2412668	Gamma-BHC	105	86.8	P/P	63 - 128
2412668	Gamma-Chlordane	67.7	67.5	P/P	40 - 104
2412668	Heptachlor	55.2	62.6	P/P	36 - 97.0
2412668	Heptachlor Epoxide	66.7	74.4	P/P	49 - 184
2412668	Hexachlorobenzene	43.3	53.5	P/P	39 - 96.0
2412668	Kepone	140	95.2	P/P	10 - 217
2412668	Lambda-Cyhalothrin	75.5	65.2	P/P	21 - 193
2412668	Methoprene	59.0	57.1	P/P	20 - 106
2412668	Methoxychlor	71.2	63.7	P/P	53 - 118
2412668	MGK-264	75.6	75.9	P/P	40 - 118
2412668	Mirex	58.0	55.1	P/P	26 - 92.0
2412668	Oxychlordane	63.8	67.3	P/P	44 - 99.0
2412668	Permethrin	57.4	59.2	P/P	33 - 182
2412668	Phenothrin	48.9	47.8	P/P	10 - 129

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P430434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412668	Piperonyl Butoxide	83.2	79.0	P/P	10 - 211
2412668	Prallethrin	64.3	64.0	P/P	24 - 113
2412668	Tau-Fluvalinate	80.3	71.9	P/P	14 - 149
2412668	Tetramethrin	59.6	58.5	P/P	17 - 151
2412668	Trans-Nonachlor	64.9	66.8	P/P	42 - 102
2412668	Triclosan Methyl	71.0	66.8	P/P	48 - 108
2412668	Trifluralin	71.3	63.8	P/P	47 - 96.0
2413053	PCB-1016	73.4	81.6	P/P	46 - 111
2413053	PCB-1260	64.5	67.4	P/P	45 - 114

Reference Method: EPA 8276

Batch ID: P430434

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2413053	Chlordane	71.0	76.9	P/P	53 - 126
2413053	Toxaphene	59.8	64.6	P/P	56 - 211

Reference Method: EPA 8321B

Batch ID: P430400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412140	2,4-D	97.6	90.3	P/P	40 - 150
2412140	2,4,5-T	92.6	85.8	P/P	40 - 150
2412140	Acetaminophen	91.5	82.6	P/P	30 - 150
2412140	Afidopyropen	42.8	51.2	P/P	30 - 150
2412140	Carbamazepine	77.8	71.7	P/P	40 - 150
2412140	Clothianidin	100	92.8	P/P	40 - 150
2412140	Diuron	78.3	79.3	P/P	40 - 150
2412140	Fenuron	64.6	58.8	P/P	40 - 150
2412140	Fluridone	75.5	71.6	P/P	40 - 150
2412140	Hydrocodone	74.9	70.5	P/P	40 - 150
2412140	Ibuprofen	71.9	59.0	P/P	40 - 150
2412140	Imazapyr	92.5	88.9	P/P	40 - 150
2412140	Imidacloprid	121	106	P/P	40 - 150
2412140	Linuron	75.6	63.6	P/P	40 - 150
2412140	Mandestrobin	74.0	69.0	P/P	40 - 150
2412140	MCPP	89.9	83.6	P/P	40 - 150
2412140	Naproxen	37.4	34.5	F/F	40 - 150
2412140	Primidone	78.9	70.9	P/P	40 - 150
2412140	Silvex	71.1	63.5	P/P	40 - 150
2412140	Thiamethoxam	94.0	86.7	P/P	40 - 150
2412140	Tolfenpyrad	45.4	42.4	P/P	30 - 150
2412140	Triclopyr	95.0	89.6	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P430433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412576	Acesulfame K	116	117	P/P	40 - 150
2412576	AMPA	73.8	72.1	P/P	40 - 150
2412576	Endothall	88.7	86.4	P/P	40 - 150
2412576	Glufosinate	78.0	81.4	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P430433

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2412576	Glyphosate	81.5	87.9	P/P	40 - 150
2412576	Sucralose	99.2	124	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P430463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412328	Calcium	0.135	Spike	P	0 - 20
2412328	Iron	0.723	Spike	P	0 - 20
2412328	Magnesium	1.12	Spike	P	0 - 20
2412328	Potassium	0.0372	Spike	P	0 - 20
2412328	Sodium	0.0518	Spike	P	0 - 20
2412328	Strontium	2.01	Spike	P	0 - 20
2412328	Tin	2.67	Spike	P	0 - 20
2412328	Titanium	1.45	Spike	P	0 - 20
2412328	Vanadium	1.83	Spike	P	0 - 20
2412328	Zinc	1.91	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P430463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412328	Aluminum	0.882	Spike	P	0 - 20
2412328	Antimony	0.0366	Spike	P	0 - 20
2412328	Arsenic	0.157	Spike	P	0 - 20
2412328	Barium	0.0651	Spike	P	0 - 20
2412328	Beryllium	1.40	Spike	P	0 - 20
2412328	Boron	1.47	Spike	P	0 - 20
2412328	Cadmium	1.63	Spike	P	0 - 20
2412328	Chromium	0.0396	Spike	P	0 - 20
2412328	Cobalt	0.469	Spike	P	0 - 20
2412328	Copper	1.13	Spike	P	0 - 20
2412328	Lead	0.755	Spike	P	0 - 20
2412328	Manganese	0.984	Spike	P	0 - 20
2412328	Molybdenum	0.432	Spike	P	0 - 20
2412328	Nickel	1.07	Spike	P	0 - 20
2412328	Selenium	0.551	Spike	P	0 - 20
2412328	Silver	1.17	Spike	P	0 - 20
2412328	Thallium	0.0552	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P430434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412668	Aldrin	7.86	Spike	P	0 - 41
2412668	Alpha-BHC	3.43	Spike	P	0 - 25
2412668	Alpha-Chlordane	8.27	Spike	P	0 - 33
2412668	Beta-BHC	8.01	Spike	P	0 - 36
2412668	Beta-Cyfluthrin	10.2	Spike	P	0 - 42
2412668	Bifenthrin	10.0	Spike	P	0 - 53
2412668	Chlorothalonil	35.2	Spike	P	0 - 71
2412668	Cis-Nonachlor	1.27	Spike	P	0 - 29
2412668	Cypermethrin	7.50	Spike	P	0 - 40
2412668	Dacthal	18.1	Spike	P	0 - 26
2412668	DDD-p,p'	0.135	Spike	P	0 - 39
2412668	DDE-p,p'	0.199	Spike	P	0 - 33

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P430434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412668	DDT-p,p'	1.39	Spike	P	0 - 40
2412668	Delta-BHC	10.2	Spike	P	0 - 37
2412668	Deltamethrin	9.32	Spike	P	0 - 100
2412668	Dichlobenil	14.4	Spike	P	0 - 40
2412668	Dicofol	13.1	Spike	P	0 - 31
2412668	Dieldrin	2.91	Spike	P	0 - 27
2412668	Endosulfan I	1.90	Spike	P	0 - 23
2412668	Endosulfan II	0.455	Spike	P	0 - 28
2412668	Endosulfan Sulfate	5.08	Spike	P	0 - 38
2412668	Endrin	4.44	Spike	P	0 - 63
2412668	Endrin Aldehyde	6.65	Spike	P	0 - 60
2412668	Endrin Ketone	4.50	Spike	P	0 - 37
2412668	Esfenvalerate	7.74	Spike	P	0 - 52
2412668	Ethalfuralin	6.20	Spike	P	0 - 23
2412668	Fenpropathrin	2.50	Spike	P	0 - 32
2412668	Gamma-BHC	19.4	Spike	F	0 - 17
2412668	Gamma-Chlordane	0.296	Spike	P	0 - 40
2412668	Heptachlor	12.6	Spike	P	0 - 29
2412668	Heptachlor Epoxide	10.9	Spike	P	0 - 25
2412668	Hexachlorobenzene	21.0	Spike	P	0 - 36
2412668	Kepone	37.9	Spike	P	0 - 93
2412668	Lambda-Cyhalothrin	14.6	Spike	P	0 - 55
2412668	Methoprene	3.28	Spike	P	0 - 53
2412668	Methoxychlor	11.2	Spike	P	0 - 29
2412668	MGK-264	0.483	Spike	P	0 - 35
2412668	Mirex	5.11	Spike	P	0 - 46
2412668	Oxychlordane	5.28	Spike	P	0 - 29
2412668	Permethrin	3.09	Spike	P	0 - 44
2412668	Phenothrin	2.26	Spike	P	0 - 56
2412668	Piperonyl Butoxide	5.23	Spike	P	0 - 100
2412668	Prallethrin	0.492	Spike	P	0 - 42
2412668	Tau-Fluvalinate	11.0	Spike	P	0 - 54
2412668	Tetramethrin	1.85	Spike	P	0 - 51
2412668	Trans-Nonachlor	2.88	Spike	P	0 - 37
2412668	Triclosan Methyl	6.09	Spike	P	0 - 31
2412668	Trifluralin	11.1	Spike	P	0 - 30
2413053	PCB-1016	10.5	Spike	P	0 - 32
2413053	PCB-1260	4.29	Spike	P	0 - 31

Reference Method: EPA 8276
Batch ID: P430434

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2413053	Chlordane	7.98	Spike	P	0 - 25
2413053	Toxaphene	7.08	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P430400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412140	2,4-D	7.84	Spike	P	0 - 30
2412140	2,4,5-T	7.64	Spike	P	0 - 30
2412140	Acetaminophen	10.2	Spike	P	0 - 30
2412140	Acetamiprid	12.7	Spike	P	0 - 30
2412140	Afidopyropen	17.9	Spike	P	0 - 30
2412140	Bentazon	1.81	Spike	P	0 - 30
2412140	Benzovindiflupyr	8.94	Spike	P	0 - 30
2412140	Carbamazepine	8.11	Spike	P	0 - 30
2412140	Clothianidin	6.79	Spike	P	0 - 30
2412140	Dinotefuran	0.636	Spike	P	0 - 30
2412140	Diuron	0.915	Spike	P	0 - 30
2412140	Fenuron	9.41	Spike	P	0 - 30
2412140	Fluridone	5.10	Spike	P	0 - 30
2412140	Hydrocodone	6.09	Spike	P	0 - 30
2412140	Ibuprofen	19.8	Spike	P	0 - 30
2412140	Imazapyr	3.96	Spike	P	0 - 30
2412140	Imidacloprid	7.29	Spike	P	0 - 30
2412140	Linuron	17.3	Spike	P	0 - 30
2412140	Mandestrobin	7.01	Spike	P	0 - 30
2412140	MCP	7.31	Spike	P	0 - 30
2412140	Naproxen	8.02	Spike	P	0 - 30
2412140	Primidone	10.6	Spike	P	0 - 30
2412140	Pyraclostrobin	6.90	Spike	P	0 - 30
2412140	Silvex	11.4	Spike	P	0 - 30
2412140	Thiamethoxam	5.24	Spike	P	0 - 30
2412140	Tolfenpyrad	6.83	Spike	P	0 - 30
2412140	Triclopyr	5.93	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P430433

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2412576	Acesulfame K	0.302	Spike	P	0 - 30
2412576	AMPA	2.39	Spike	P	0 - 30
2412576	Endothall	2.71	Spike	P	0 - 30
2412576	Glufosinate	4.18	Spike	P	0 - 30
2412576	Glyphosate	7.61	Spike	P	0 - 30
2412576	Sucralose	20.7	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2412861

Field Sample ID: G4NW0336

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	79.0	P	29 - 130
EPA 8270E	Decachlorobiphenyl	52.8	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	54.3	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	37.1	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	51.1	P	30 - 101
EPA 8276	PCNB	77.5	P	48 - 121

Lab Sample ID: 2412862

Field Sample ID: G4NW0395

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	94.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.9	P	30 - 160
EPA 8321B	Diuron-d6	76.5	P	30 - 160
EPA 8321B	Endothall-d6	94.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.7	P	30 - 160
EPA 8321B	Primidone-d5	84.1	P	30 - 160
EPA 8321B	Sucralose-d6	97.1	P	30 - 160

Lab Sample ID: 2412863

Field Sample ID: G4NW0357

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.1	P	30 - 160
EPA 8321B	Diuron-d6	87.1	P	30 - 160
EPA 8321B	Endothall-d6	101	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.5	P	30 - 160
EPA 8321B	Primidone-d5	82.2	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A119463

Included Lab Sample IDs: 2412862, 2412863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	110	114	P/P	60 - 160
Endothall	101	102	P/P	60 - 160
Glufosinate	104	95.9	P/P	60 - 160
Glyphosate	118	113	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A119465

Included Lab Sample IDs: 2412862, 2412863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	152	151	P/P	60 - 160
Sucralose	116	116	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119478

Included Lab Sample IDs: 2412864, 2412865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.4	99.0	P/P	90 - 110
Antimony	102	102	P/P	90 - 110
Arsenic	98.9	100	P/P	90 - 110
Barium	100	100	P/P	90 - 110
Beryllium	96.0	96.5	P/P	90 - 110
Boron	94.9	96.6	P/P	90 - 110
Cadmium	99.5	99.4	P/P	90 - 110
Chromium	96.8	98.0	P/P	90 - 110
Cobalt	99.4	99.2	P/P	90 - 110
Copper	95.6	96.4	P/P	90 - 110
Lead	99.2	99.0	P/P	90 - 110
Manganese	98.1	98.8	P/P	90 - 110
Molybdenum	98.2	98.3	P/P	90 - 110
Nickel	97.2	97.5	P/P	90 - 110
Selenium	99.7	101	P/P	90 - 110
Silver	100	99.9	P/P	90 - 110
Thallium	98.5	98.3	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A119528

Included Lab Sample IDs: 2412861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	103		P	80 - 120
PCB-1260	99.0		P	80 - 120

Reference Method: EPA 8270E

Run ID: A119556

Included Lab Sample IDs: 2412861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	103		P	80 - 120
Alpha-BHC	99.8		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A119556
 Included Lab Sample IDs: 2412861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alpha-Chlordane	89.9		P	80 - 120
Beta-BHC	103		P	80 - 120
Beta-Cyfluthrin	95.1		P	80 - 120
Bifenthrin	104		P	80 - 120
Chlorothalonil	94.4		P	80 - 120
Cis-Nonachlor	93.6		P	80 - 120
Cypermethrin	98.6		P	80 - 120
Dacthal	98.9		P	80 - 120
DDD-p,p'	101		P	80 - 120
DDE-p,p'	99.9		P	80 - 120
DDT-p,p'	102		P	80 - 120
Delta-BHC	100		P	80 - 120
Deltamethrin	95.4		P	80 - 120
Dichlobenil	106		P	80 - 120
Dicofol	94.2		P	80 - 120
Dieldrin	96.6		P	80 - 120
Endosulfan I	97.6		P	80 - 120
Endosulfan II	101		P	80 - 120
Endosulfan Sulfate	90.7		P	80 - 120
Endrin	103		P	80 - 120
Endrin Aldehyde	87.7		P	80 - 120
Endrin Ketone	118		P	80 - 120
Esfenvalerate	97.9		P	80 - 120
Ethalfuralin	98.1		P	80 - 120
Fenpropathrin	89.1		P	80 - 120
Gamma-BHC	98.0		P	80 - 120
Gamma-Chlordane	96.7		P	80 - 120
Heptachlor	98.6		P	80 - 120
Heptachlor Epoxide	97.1		P	80 - 120
Hexachlorobenzene	95.7		P	80 - 120
Kepone	75.2*		F	80 - 120
Lambda-Cyhalothrin	98.7		P	80 - 120
Methoprene	102		P	80 - 120
Methoxychlor	98.8		P	80 - 120
MGK-264	101		P	80 - 120
Mirex	101		P	80 - 120
Oxychlordane	98.0		P	80 - 120
Permethrin	103		P	80 - 120
Phenothrin	101		P	80 - 120
Piperonyl Butoxide	101		P	80 - 120
Prallethrin	99.5		P	80 - 120
Tau-Fluvalinate	93.7		P	80 - 120
Tetramethrin	96.3		P	80 - 120
Trans-Nonachlor	96.9		P	80 - 120
Triclosan Methyl	93.1		P	80 - 120
Trifluralin	99.2		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119557

Included Lab Sample IDs: 2412864, 2412865

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.8	100	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Sodium	103	104	P/P	90 - 110
Strontium	103	103	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	100	100	P/P	90 - 110
Vanadium	100	100	P/P	90 - 110
Zinc	99.9	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119586

Included Lab Sample IDs: 2412862, 2412863

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.1	105	P/P	50 - 150
2,4,5-T	98.3	94.8	P/P	50 - 150
Acetaminophen	109	104	P/P	60 - 160
Acetamiprid	106	108	P/P	50 - 150
Afidopyropen	108	125	P/P	50 - 150
Bentazon	138	150	P/P	50 - 160
Benzovindiflupyr	102	102	P/P	50 - 150
Carbamazepine	109	108	P/P	60 - 150
Clothianidin	107	110	P/P	60 - 150
Dinotefuran	110	115	P/P	50 - 150
Diuron	124	121	P/P	60 - 160
Fenuron	103	105	P/P	60 - 150
Fluridone	113	113	P/P	60 - 160
Hydrocodone	111	109	P/P	60 - 150
Ibuprofen	140	136	P/P	50 - 160
Imazapyr	124	118	P/P	50 - 150
Imidacloprid	98.2	98.6	P/P	60 - 150
Linuron	102	118	P/P	60 - 150
Mandestrobin	104	103	P/P	50 - 150
MCPP	101	102	P/P	50 - 150
Naproxen	72.3	52.3	P/P	50 - 160
Primidone	97.5	98.7	P/P	60 - 150
Pyraclostrobin	107	108	P/P	60 - 150
Silvex	99.4	104	P/P	50 - 150
Thiamethoxam	106	109	P/P	50 - 150
Tolfenpyrad	98.2	101	P/P	60 - 150
Triclopyr	84.4	86.6	P/P	50 - 150

Reference Method: EPA 8276

Run ID: A119627

Included Lab Sample IDs: 2412861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	109		P	80 - 120
Toxaphene	99.2		P	80 - 120

Quality Assurance Report

Calibration Verification

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 200.7 Rev. 4.4	Calcium	100	101	100				0.135
	Iron	100	103	102	102			0.723
	Magnesium	100	102	100				1.12
	Potassium	102	103					0.0372
	Sodium	101	104	104				0.0518
	Strontium	103	105	103	104			2.01
	Tin	105	108	105	105			2.67
	Titanium	99.6	103	102	100			1.45
	Vanadium	99.1	105	103	101			1.83
	Zinc	102	107	105	104			1.91
EPA 200.8 Rev. 5.4	Aluminum	101	99.0	98.1	96.8			0.882
	Antimony	104	105	105	103			0.0366
	Arsenic	102	102	102	99.3			0.157
	Barium	104	104	104	101			0.0651
	Beryllium	95.6	96.2	94.9	95.8			1.40
	Boron	102	101	98.4	99.2			1.47
	Cadmium	99.7	101	99.7	97.7			1.63
	Chromium	97.4	95.7	95.7	94.2			0.0396
	Cobalt	101	99.1	98.6	97.9			0.469
	Copper	99.1	96.7	95.5	95.9			1.13
	Lead	101	102	101	100			0.755
	Manganese	98.0	96.3	95.1	96.7			0.984
	Molybdenum	98.9	101	101	98.5			0.432
	Nickel	100	98.5	97.4	96.2			1.07
	Selenium	103	101	101	100			0.551
	Silver	102	102	101	99.3			1.17
	Thallium	100	103	103	99.8			0.0552
EPA 8270E	Aldrin	46.4	47.3	51.2				7.86
	Alpha-BHC	81.6	76.1	78.7				3.43
	Alpha-Chlordane	78.4	63.6	69.0				8.27
	Beta-BHC	90.5	89.9	83.0				8.01
	Beta-Cyfluthrin	76.0	84.1	75.9				10.2
	Bifenthrin	43.0	50.7	45.9				10.0
	Chlorothalonil	56.8	84.0	58.9				35.2
	Cis-Nonachlor	72.9	62.4	61.6				1.27
	Cypermethrin	80.3	85.7	79.5				7.50
	Dacthal	85.5	90.4	75.4				18.1
	DDD-p,p'	74.4	62.4	62.3				0.135
	DDE-p,p'	78.2	69.1	69.0				0.199
	DDT-p,p'	68.1	62.3	61.4				1.39
	Delta-BHC	89.9	87.8	79.3				10.2
	Deltamethrin	85.3	96.4	87.8				9.32
	Dichlobenil	71.3	46.2	53.3				14.4
	Dicofol	65.8	67.2	59.0				13.1
	Dieldrin	81.6	74.1	71.3				2.91
	Endosulfan I	77.2	69.1	67.8				1.90
	Endosulfan II	85.1	75.7	75.4				0.455
	Endosulfan Sulfate	79.0	73.4	69.8				5.08
	Endrin	82.4	69.2	72.3				4.44
	Endrin Aldehyde	69.1	60.3	64.4				6.65
	Endrin Ketone	92.3	110	115				4.50
	Esfenvalerate	69.4	81.1	75.0				7.74
	Ethalfuralin	75.0	66.6	70.9				6.20
	Fenpropathrin	61.5	65.8	64.2				2.50

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8270E	Gamma-BHC	95.7	105	86.8			19.4
	Gamma-Chlordane	70.2	67.7	67.5			0.296
	Heptachlor	65.9	55.2	62.6			12.6
	Heptachlor Epoxide	77.2	66.7	74.4			10.9
	Hexachlorobenzene	57.7	43.3	53.5			21.0
	Kepone	114	140	95.2			37.9
	Lambda-Cyhalothrin	65.6	75.5	65.2			14.6
	Methoprene	55.6	59.0	57.1			3.28
	Methoxychlor	74.2	71.2	63.7			11.2
	MGK-264	81.3	75.6	75.9			0.483
	Mirex	58.2	58.0	55.1			5.11
	Oxychlordane	71.6	63.8	67.3			5.28
	PCB-1016	69.6	73.4	81.6			10.5
	PCB-1260	63.7	64.5	67.4			4.29
	Permethrin	57.1	57.4	59.2			3.09
	Phenothrin	40.1	48.9	47.8			2.26
	Piperonyl Butoxide	92.4	83.2	79.0			5.23
	Prallethrin	70.3	64.3	64.0			0.492
	Tau-Fluvalinate	62.1	80.3	71.9			11.0
	Tetramethrin	62.1	59.6	58.5			1.85
	Trans-Nonachlor	72.9	64.9	66.8			2.88
	Triclosan Methyl	78.7	71.0	66.8			6.09
EPA 8276	Trifluralin	71.4	71.3	63.8			11.1
	Chlordane	88.7	71.0	76.9			7.98
	Toxaphene	96.2	59.8	64.6			7.08
EPA 8321B	2,4-D	109	97.6	90.3			7.84
	2,4,5-T	94.2	92.6	85.8			7.64
	Acesulfame K	125	116	117			0.302
	Acetaminophen	86.3	91.5	82.6			10.2
	Acetamiprid	72.5					12.7
	Afidopyropen	68.0	42.8	51.2			17.9
	AMPA	112	73.8	72.1			2.39
	Bentazon	122					1.81
	Benzovindiflupyr	78.2					8.94
	Carbamazepine	85.7	77.8	71.7			8.11
	Clothianidin	87.2	100	92.8			6.79
	Dinotefuran	91.1					0.636
	Diuron	97.4	78.3	79.3			0.915
	Endothall	102	88.7	86.4			2.71
	Fenuron	82.8	64.6	58.8			9.41
	Fluridone	84.8	75.5	71.6			5.10
	Glufosinate	93.1	78.0	81.4			4.18
	Glyphosate	88.7	81.5	87.9			7.61
	Hydrocodone	86.1	74.9	70.5			6.09
	Ibuprofen	77.4	71.9	59.0			19.8
	Imazapyr	90.4	92.5	88.9			3.96
	Imidacloprid	80.1	121	106			7.29
	Linuron	75.9	75.6	63.6			17.3
	Mandestrobin	83.3	74.0	69.0			7.01
	MCPP	96.3	89.9	83.6			7.31
	Naproxen	57.7	37.4	34.5			8.02
	Primidone	75.4	78.9	70.9			10.6
	Pyraclostrobin	70.0					6.90
	Silvex	89.4	71.1	63.5			11.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Sucralose	89.2	99.2	124		20.7
	Thiamethoxam	85.7	94.0	86.7		5.24
	Tolfenpyrad	51.9	45.4	42.4		6.83
	Triclopyr	89.0	95.0	89.6		5.93

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2412864, 2412865
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2412864, 2412865
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2412861
EPA 8270E	PCBs in water matrices by GC/MS/MS	2412861
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2412861
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2412862, 2412863
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2412864, 2412865

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	05/25/2023	05/26/2023 11:20	George D Taylor	06/02/2023 20:34	McKinley C Carter	2412864
	05/25/2023	05/26/2023 11:20	George D Taylor	06/02/2023 20:39	McKinley C Carter	2412865
EPA 200.8 Rev. 5.4	05/25/2023	05/26/2023 11:20	George D Taylor	05/30/2023 19:07	Conrad Hartmann	2412864
	05/25/2023	05/26/2023 11:20	George D Taylor	05/30/2023 19:16	Conrad Hartmann	2412865
EPA 8270E	05/25/2023	05/30/2023 08:00	Fe-Val Siddell	06/01/2023 23:40	Michael Poppell	2412861
	05/25/2023	05/30/2023 08:00	Fe-Val Siddell	06/02/2023 03:40	Michael Poppell	2412861
EPA 8276	05/25/2023	05/30/2023 08:00	Fe-Val Siddell	06/03/2023 14:32	Lipi Saha	2412861
EPA 8321B	05/25/2023	05/27/2023 20:00	Touraj Touran	05/28/2023 03:38	Touraj Touran	2412862
	05/25/2023	05/27/2023 20:00	Touraj Touran	05/28/2023 03:51	Touraj Touran	2412863
	05/25/2023	05/27/2023 20:00	Touraj Touran	05/28/2023 16:18	Touraj Touran	2412862
	05/25/2023	05/27/2023 20:00	Touraj Touran	05/28/2023 16:32	Touraj Touran	2412863
	05/25/2023	05/30/2023 09:00	Hoor Shaik	06/06/2023 00:57	Juyoung Kim	2412862
SM 2340 B-2011	05/25/2023	05/30/2023 09:00	Hoor Shaik	06/06/2023 01:16	Juyoung Kim	2412863
	05/25/2023			06/02/2023 20:34	McKinley C Carter	2412864
	05/25/2023			06/02/2023 20:39	McKinley C Carter	2412865