

Chemical Analysis Report

NW-DIST-2023-06-21-02

Florida DEP Laboratory
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DOH Accreditation E31780

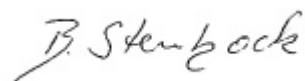
Event Description: **Laurel Hill West**
Request ID: **RQ-2023-06-19-27**
Customer: **NW-DIST**
Project ID: **SMP**

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

Date Certified: 13-JUL-2023 16:19



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: Wilkinson Creek upstream of Wilkinson Bluff Road

Collection Date/Time: 06/20/2023 09:50

Field ID: G4NW0357

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418913	EPA 8321B	2,4-D	0.0020	U	ug/L	P431550	
		Acesulfame K	0.10	U	ug/L	P431641	
		2,4,5-T	0.0040	U	ug/L	P431550	
		AMPA	0.10	U	ug/L	P431641	
		Acetaminophen	0.0080	U	ug/L	P431550	
		Acetamiprid	0.0020	U	ug/L	P431550	
		Endothall	0.25	U	ug/L	P431641	
		Glufosinate	0.10	U	ug/L	P431641	
		Glyphosate	0.10	U	ug/L	P431641	
		Afidopyropen	0.0020	U	ug/L	P431550	
		Bentazon	8.0E-04	U	ug/L	P431550	
		Sucralose	0.19		ug/L	P431641	
		Benzovindiflupyr	0.0020	U	ug/L	P431550	
		Carbamazepine	8.0E-04	U	ug/L	P431550	
		Clothianidin	0.0020	U	ug/L	P431550	
		Dinotefuran	0.0020	U	ug/L	P431550	
		Diuron	0.0020	U	ug/L	P431550	MS
		Fenuron	0.032	U	ug/L	P431550	
		Fluridone	8.0E-04	U	ug/L	P431550	
		Imazapyr	0.0040	U	ug/L	P431550	
		Hydrocodone	0.0020	U	ug/L	P431550	
		Ibuprofen	0.080	U	ug/L	P431550	
		Imidacloprid	0.0032	I	ug/L	P431550	
		Linuron	0.0040	U	ug/L	P431550	
		Mandestrobin	0.0020	U	ug/L	P431550	
		MCPP	0.0020	U	ug/L	P431550	
		Naproxen	0.0080	U	ug/L	P431550	
		Primidone	0.0040	U	ug/L	P431550	
		Pyraclostrobin	0.0020	U	ug/L	P431550	
		Silvex	0.0040	U	ug/L	P431550	
		Thiamethoxam	0.0020	U	ug/L	P431550	
		Tolfenpyrad	0.0020	U	ug/L	P431550	
		Triclopyr	0.0040	U	ug/L	P431550	

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.

Sample Location: Baggett Creek upstream of Hwy 90

Collection Date/Time: 06/20/2023 10:10

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418911	EPA 8270E	Aldrin	0.69	U	ng/L	P431672	
		Alpha-BHC	0.11	U	ng/L	P431672	
		Alpha-Chlordane	0.21	U	ng/L	P431672	
		PCB-1016	2.1	U	ng/L	P431672	
		Beta-BHC	0.34	I	ng/L	P431672	
		PCB-1221	2.1	U	ng/L	P431672	
		Beta-Cyfluthrin	1.3	U	ng/L	P431672	
		PCB-1232	2.1	U	ng/L	P431672	
		Bifenthrin	0.53	U	ng/L	P431672	
		PCB-1242	2.1	U	ng/L	P431672	
		PCB-1248	2.1	U	ng/L	P431672	
		Chlorothalonil	3.8	U	ng/L	P431672	
		PCB-1254	2.1	U	ng/L	P431672	
		Cis-Nonachlor	0.21	U	ng/L	P431672	
		PCB-1260	2.1	U	ng/L	P431672	MS
		Cypermethrin	1.6	U	ng/L	P431672	
		Dacthal	0.16	U	ng/L	P431672	
		DDD-p,p'	0.27	U	ng/L	P431672	
		DDE-p,p'	0.21	U	ng/L	P431672	
		DDT-p,p'	0.27	U	ng/L	P431672	
		Delta-BHC	0.56	I	ng/L	P431672	
		Deltamethrin	1.3	U	ng/L	P431672	
		Dichlobenil	0.27	U	ng/L	P431672	
		Dicofol	1.3	U	ng/L	P431672	
		Dieldrin	0.42	U	ng/L	P431672	
		Endosulfan I	0.42	U	ng/L	P431672	
		Endosulfan II	0.42	U	ng/L	P431672	
		Endosulfan Sulfate	0.32	U	ng/L	P431672	
		Endrin	0.42	U	ng/L	P431672	
		Endrin Aldehyde	0.80	U	ng/L	P431672	
		Endrin Ketone	0.42	U	ng/L	P431672	
		Esfenvalerate	0.80	U	ng/L	P431672	
		Ethalfuralin	0.16	U	ng/L	P431672	
		Fenpropathrin	0.27	U	ng/L	P431672	
		Gamma-BHC	0.13	U	ng/L	P431672	
		Gamma-Chlordane	0.21	U	ng/L	P431672	
		Heptachlor	0.21	U	ng/L	P431672	
		Heptachlor Epoxide	0.27	U	ng/L	P431672	
		Hexachlorobenzene**	1.1	U	ng/L	P431672	
		Kepone	5.3	UJ	ng/L	P431672	CCV
		Lambda-Cyhalothrin	0.80	U	ng/L	P431672	
		Methoprene	0.80	U	ng/L	P431672	
		Methoxychlor	0.32	U	ng/L	P431672	
		MGK-264	0.21	U	ng/L	P431672	

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418911	EPA 8270E	Mirex	0.37	U	ng/L	P431672	
		Oxychlordane	0.32	U	ng/L	P431672	
		Permethrin	1.7	U	ng/L	P431672	
		Phenothrin	1.1	I	ng/L	P431672	
		Piperonyl Butoxide	0.16	U	ng/L	P431672	
		Prallethrin	2.1	U	ng/L	P431672	
		Tau-Fluvalinate	0.27	U	ng/L	P431672	
		Tetramethrin	0.80	U	ng/L	P431672	
		Trans-Nonachlor	0.21	U	ng/L	P431672	
		Triclosan Methyl	0.16	U	ng/L	P431672	
		Trifluralin	0.21	U	ng/L	P431672	
	EPA 8276	Chlordane	2.1	UJ	ng/L	P431672	LCS, MS
		Toxaphene	16	U	ng/L	P431672	MS
2418915	EPA 200.7 Rev. 4.4	Calcium	3.07		mg/L	P431650	
		Iron	860		ug/L	P431650	
		Magnesium	1.31		mg/L	P431650	
		Potassium	0.52	I	mg/L	P431650	
		Sodium	2.4		mg/L	P431650	
		Strontium	12.3		ug/L	P431650	
		Tin	3.0	U	ug/L	P431650	
		Titanium	4.6		ug/L	P431650	
		Vanadium	2.0	U	ug/L	P431650	
		Zinc	5.0	U	ug/L	P431650	
	EPA 200.8 Rev. 5.4	Aluminum	235		ug/L	P431650	
		Antimony	0.050	U	ug/L	P431650	
		Arsenic	0.50		ug/L	P431650	
		Barium	23.7		ug/L	P431650	
		Beryllium	0.017	I	ug/L	P431650	
		Boron	11.2		ug/L	P431650	
		Cadmium	0.020	U	ug/L	P431650	
		Chromium	0.40	U	ug/L	P431650	
		Cobalt	0.190		ug/L	P431650	
		Copper	0.40	U	ug/L	P431650	
		Lead	0.23	I	ug/L	P431650	
		Manganese	17.2		ug/L	P431650	
		Molybdenum	0.15	U	ug/L	P431650	
		Nickel	0.50	U	ug/L	P431650	
		Selenium	0.20	U	ug/L	P431650	
		Silver	0.010	U	ug/L	P431650	
		Thallium	0.10	U	ug/L	P431650	
	SM 2340 B-2011	Hardness	13.0		mg/L	P431650	

Ref. Method and Comment:

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

EPA 8276: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Oak Creek Below Tommy Steele Road

Collection Date/Time: 06/20/2023 11:45

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418912	EPA 8321B	2,4-D	0.0022	I	ug/L	P431550	
		Acesulfame K	0.10	U	ug/L	P431641	
		2,4,5-T	0.0040	U	ug/L	P431550	
		AMPA	0.10	U	ug/L	P431641	
		Acetaminophen	0.0080	U	ug/L	P431550	
		Acetamiprid	0.0020	U	ug/L	P431550	
		Endothall	0.25	U	ug/L	P431641	
		Glufosinate	0.10	U	ug/L	P431641	
		Glyphosate	0.10	U	ug/L	P431641	
		Afidopyropen	0.0020	U	ug/L	P431550	
		Bentazon	8.0E-04	U	ug/L	P431550	
		Sucralose	0.054		ug/L	P431641	
		Benzovindiflupyr	0.0020	U	ug/L	P431550	
		Carbamazepine	8.0E-04	U	ug/L	P431550	
		Clothianidin	0.0020	U	ug/L	P431550	
		Dinotefuran	0.0020	U	ug/L	P431550	
		Diuron	0.0020	U	ug/L	P431550	MS
		Fenuron	0.032	U	ug/L	P431550	
		Fluridone	8.0E-04	U	ug/L	P431550	
		Imazapyr	0.0040	U	ug/L	P431550	
		Hydrocodone	0.0020	U	ug/L	P431550	
		Ibuprofen	0.080	U	ug/L	P431550	
		Imidacloprid	0.0020	U	ug/L	P431550	
		Linuron	0.0040	U	ug/L	P431550	
		Mandestrobin	0.0020	U	ug/L	P431550	
		MCPP	0.0020	U	ug/L	P431550	
		Naproxen	0.0080	U	ug/L	P431550	
		Primidone	0.0040	U	ug/L	P431550	
		Pyraclostrobin	0.0020	U	ug/L	P431550	
		Silvex	0.0040	U	ug/L	P431550	
		Thiamethoxam	0.0020	U	ug/L	P431550	
		Tolfenpyrad	0.0020	U	ug/L	P431550	
		Triclopyr	0.0040	U	ug/L	P431550	
2418914	EPA 200.7 Rev. 4.4	Calcium	1.46		mg/L	P431650	
		Iron	1.74E+03		ug/L	P431650	
		Magnesium	0.77		mg/L	P431650	
		Potassium	0.62	I	mg/L	P431650	
		Sodium	1.7	I	mg/L	P431650	
		Strontium	8.4		ug/L	P431650	
		Tin	3.0	U	ug/L	P431650	
		Titanium	9.2		ug/L	P431650	
		Vanadium	2.0	U	ug/L	P431650	
		Zinc	5.0	U	ug/L	P431650	
	EPA 200.8 Rev. 5.4	Aluminum	361		ug/L	P431650	

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418914	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P431650	
		Arsenic	0.49		ug/L	P431650	
		Barium	25.4		ug/L	P431650	
		Beryllium	0.162		ug/L	P431650	
		Boron	10.6		ug/L	P431650	
		Cadmium	0.020	U	ug/L	P431650	
		Chromium	0.48	I	ug/L	P431650	
		Cobalt	0.841		ug/L	P431650	
		Copper	0.45	I	ug/L	P431650	
		Lead	0.46		ug/L	P431650	
		Manganese	60.2		ug/L	P431650	
		Molybdenum	0.15	U	ug/L	P431650	
		Nickel	1.2	I	ug/L	P431650	
		Selenium	0.20	U	ug/L	P431650	
		Silver	0.010	U	ug/L	P431650	
		Thallium	0.10	U	ug/L	P431650	
	SM 2340 B-2011	Hardness	6.8		mg/L	P431650	

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 200.8 Rev. 5.4: The beryllium result was confirmed in the undigested sample on 06/26/2023.

Sample Location: Olive Branch below Mormon Temple Road

Collection Date/Time: 06/20/2023 11:25

Field ID: G4NW0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418916	EPA 200.7 Rev. 4.4	Calcium	1.40		mg/L	P431650	
		Iron	750		ug/L	P431650	
		Magnesium	0.94		mg/L	P431650	
		Potassium	0.44	I	mg/L	P431650	
		Sodium	2.0		mg/L	P431650	
		Strontium	8.9		ug/L	P431650	
		Tin	3.0	U	ug/L	P431650	
		Titanium	20.9		ug/L	P431650	
		Vanadium	2.0	U	ug/L	P431650	
	EPA 200.8 Rev. 5.4	Zinc	11	I	ug/L	P431650	
		Aluminum	489		ug/L	P431650	
		Antimony	0.050	U	ug/L	P431650	
		Arsenic	0.30		ug/L	P431650	
		Barium	35.4		ug/L	P431650	
		Beryllium	0.183		ug/L	P431650	
		Boron	10.2		ug/L	P431650	
		Cadmium	0.026	I	ug/L	P431650	
		Chromium	0.61	I	ug/L	P431650	
		Cobalt	1.09		ug/L	P431650	
		Copper	0.60	I	ug/L	P431650	
		Lead	0.55		ug/L	P431650	
		Manganese	60.8		ug/L	P431650	
		Molybdenum	0.15	U	ug/L	P431650	
		Nickel	1.1	I	ug/L	P431650	
		Selenium	0.20	U	ug/L	P431650	
		Silver	0.010	U	ug/L	P431650	
		Thallium	0.10	U	ug/L	P431650	
	SM 2340 B-2011	Hardness	7.4		mg/L	P431650	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The beryllium and lead result was confirmed in the undigested sample on 06/26/2023.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P431650

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: P431650

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: P431672

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: P431672

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: P431672

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: P431672

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: P431550

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: P431641

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: P431650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Strontium	99.5		P	85 - 115
Tin	101		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	102		P	85 - 115
Barium	106		P	85 - 115
Beryllium	99.8		P	85 - 115
Boron	103		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.9		P	85 - 115
Cobalt	98.8		P	85 - 115
Copper	98.2		P	85 - 115
Lead	96.0		P	85 - 115
Manganese	98.8		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	102		P	85 - 115
Silver	104		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	49.6		P	10 - 92.0
Alpha-BHC	81.1		P	75 - 107
Alpha-Chlordane	73.8		P	50 - 108
Beta-BHC	99.6		P	36 - 138
Beta-Cyfluthrin	75.4		P	20 - 161
Bifenthrin	52.5		P	10 - 119
Chlorothalonil	110		P	26 - 186
Cis-Nonachlor	72.5		P	42 - 119
Cypermethrin	99.1		P	22 - 150
Dacthal	85.5		P	72 - 119
DDD-p,p'	69.0		P	45 - 107
DDE-p,p'	70.9		P	48 - 106
DDT-p,p'	68.0		P	48 - 110
Delta-BHC	86.9		P	54 - 140
Deltamethrin	139		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	56.1		P	36 - 117
Dicofol	73.7		P	46 - 155
Dieldrin	79.4		P	54 - 110
Endosulfan I	80.3		P	59 - 105
Endosulfan II	78.5		P	51 - 118
Endosulfan Sulfate	78.8		P	57 - 121
Endrin	76.8		P	10 - 120
Endrin Aldehyde	76.5		P	34 - 118
Endrin Ketone	97.1		P	69 - 177
Esfenvalerate	95.2		P	23 - 168
Ethalfuralin	73.6		P	49 - 99.0
Fenpropathrin	72.3		P	34 - 117
Gamma-BHC	92.2		P	72 - 117
Gamma-Chlordane	70.9		P	43 - 106
Heptachlor	73.7		P	41 - 98.0
Heptachlor Epoxide	83.6		P	57 - 106
Hexachlorobenzene	68.6		P	36 - 99.0
Kepone	63.5		P	16 - 215
Lambda-Cyhalothrin	71.5		P	21 - 177
Methoprene	66.1		P	10 - 119
Methoxychlor	71.3		P	60 - 112
MGK-264	86.3		P	26 - 122
Mirex	51.2		P	10 - 169
Oxychlordane	75.2		P	43 - 105
PCB-1016	58.2		P	48 - 112
PCB-1260	56.8		P	44 - 118
Permethrin	86.9		P	24 - 148
Phenothrin	67.9		P	10 - 106
Piperonyl Butoxide	88.9		P	10 - 139
Prallethrin	78.5		P	17 - 109
Tau-Fluvalinate	87.4		P	13 - 131
Tetramethrin	79.9		P	10 - 132
Trans-Nonachlor	72.0		P	44 - 106
Triclosan Methyl	74.5		P	59 - 109
Trifluralin	75.0		P	44 - 101

Reference Method: EPA 8276
Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	48.6		F	61 - 116
Toxaphene	50.6		P	48 - 124

Reference Method: EPA 8321B
Batch ID: P431550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	40 - 150
2,4,5-T	86.1		P	40 - 150
Acetaminophen	95.0		P	30 - 150
Acetamiprid	84.4		P	40 - 150
Afidopyropen	64.2		P	30 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P431550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	114		P	30 - 150
Benzovindiflupyr	93.4		P	40 - 150
Carbamazepine	77.8		P	40 - 150
Clothianidin	97.9		P	40 - 150
Dinotefuran	102		P	40 - 150
Diuron	82.4		P	40 - 150
Fenuron	95.0		P	40 - 150
Fluridone	94.0		P	40 - 150
Hydrocodone	86.9		P	40 - 150
Ibuprofen	82.3		P	40 - 150
Imazapyr	95.4		P	40 - 150
Imidacloprid	74.0		P	40 - 150
Linuron	82.7		P	40 - 150
Mandestrobin	98.7		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	68.7		P	40 - 150
Primidone	75.6		P	40 - 150
Pyraclostrobin	88.1		P	40 - 150
Silvex	78.9		P	40 - 150
Thiamethoxam	78.7		P	40 - 150
Tolfenpyrad	53.0		P	30 - 150
Triclopyr	93.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P431641

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	79.4		P	40 - 150
AMPA	95.6		P	40 - 150
Endothall	97.5		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	95.9		P	40 - 150
Sucralose	112		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418460	Calcium	107	107	P/P	80 - 120
2418460	Iron	109	108	P/P	80 - 120
2418460	Magnesium	106	105	P/P	80 - 120
2418460	Potassium	103	103	P/P	80 - 120
2418460	Sodium	99.3		P	80 - 120
2418460	Strontium	102	101	P/P	80 - 120
2418460	Tin	105	101	P/P	80 - 120
2418460	Titanium	103	103	P/P	80 - 120
2418460	Vanadium	104	104	P/P	80 - 120
2418460	Zinc	102	103	P/P	80 - 120
2418916	Calcium	109		P	80 - 120
2418916	Iron	108		P	80 - 120
2418916	Magnesium	108		P	80 - 120
2418916	Potassium	101		P	80 - 120
2418916	Sodium	105		P	80 - 120
2418916	Strontium	102		P	80 - 120
2418916	Tin	104		P	80 - 120
2418916	Titanium	96.5		P	80 - 120
2418916	Vanadium	105		P	80 - 120
2418916	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418460	Aluminum	103	103	P/P	80 - 120
2418460	Antimony	104	106	P/P	80 - 120
2418460	Arsenic	101	102	P/P	80 - 120
2418460	Barium	106	106	P/P	80 - 120
2418460	Beryllium	101	101	P/P	80 - 120
2418460	Boron	104	103	P/P	80 - 120
2418460	Cadmium	101	102	P/P	80 - 120
2418460	Chromium	97.5	97.7	P/P	80 - 120
2418460	Cobalt	98.4	98.0	P/P	80 - 120
2418460	Copper	99.2	98.7	P/P	80 - 120
2418460	Lead	96.8	97.8	P/P	80 - 120
2418460	Manganese	99.1	98.6	P/P	80 - 120
2418460	Molybdenum	101	102	P/P	80 - 120
2418460	Nickel	98.2	97.9	P/P	80 - 120
2418460	Selenium	103	100	P/P	80 - 120
2418460	Silver	104	104	P/P	80 - 120
2418460	Thallium	104	106	P/P	80 - 120
2418916	Aluminum	99.0		P	80 - 120
2418916	Antimony	101		P	80 - 120
2418916	Arsenic	98.7		P	80 - 120
2418916	Barium	105		P	80 - 120
2418916	Beryllium	93.7		P	80 - 120
2418916	Boron	102		P	80 - 120
2418916	Cadmium	101		P	80 - 120
2418916	Chromium	97.3		P	80 - 120
2418916	Cobalt	98.3		P	80 - 120
2418916	Copper	97.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418916	Lead	95.2		P	80 - 120
2418916	Manganese	98.7		P	80 - 120
2418916	Molybdenum	96.2		P	80 - 120
2418916	Nickel	97.2		P	80 - 120
2418916	Selenium	96.9		P	80 - 120
2418916	Silver	102		P	80 - 120
2418916	Thallium	104		P	80 - 120

Reference Method: EPA 8270E

Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419482	Aldrin	45.8	39.4	P/P	20 - 82.0
2419482	Alpha-BHC	79.3	74.7	P/P	71 - 109
2419482	Alpha-Chlordane	68.6	62.8	P/P	42 - 106
2419482	Beta-BHC	123	133	P/P	69 - 180
2419482	Beta-Cyfluthrin	86.4	79.2	P/P	18 - 175
2419482	Bifenthrin	65.5	52.7	P/P	21 - 128
2419482	Chlorothalonil	142	167	P/P	10 - 300
2419482	Cis-Nonachlor	65.4	57.3	P/P	34 - 106
2419482	Cypermethrin	121	114	P/P	22 - 158
2419482	Dacthal	78.3	81.8	P/P	54 - 116
2419482	DDD-p,p'	63.1	59.0	P/P	34 - 107
2419482	DDE-p,p'	62.1	55.5	P/P	33 - 110
2419482	DDT-p,p'	64.5	55.0	P/P	50 - 122
2419482	Delta-BHC	95.3	96.8	P/P	77 - 193
2419482	Deltamethrin	171	163	P/P	10 - 195
2419482	Dichlobenil	34.0	39.8	P/P	25 - 113
2419482	Dicofol	70.8	62.6	P/P	38 - 247
2419482	Dieldrin	71.8	63.2	P/P	45 - 118
2419482	Endosulfan I	87.7	76.0	P/P	51 - 106
2419482	Endosulfan II	79.5	71.1	P/P	37 - 122
2419482	Endosulfan Sulfate	68.5	72.0	P/P	43 - 132
2419482	Endrin	69.0	66.0	P/P	29 - 101
2419482	Endrin Aldehyde	62.2	64.3	P/P	19 - 110
2419482	Endrin Ketone	114	115	P/P	60 - 140
2419482	Esfenvalerate	111	110	P/P	26 - 199
2419482	Ethalfuralin	66.4	63.3	P/P	45 - 99.0
2419482	Fenpropathrin	74.0	69.3	P/P	35 - 120
2419482	Gamma-BHC	112	118	P/P	63 - 128
2419482	Gamma-Chlordane	65.2	58.8	P/P	40 - 104
2419482	Heptachlor	87.9	72.8	P/P	36 - 97.0
2419482	Heptachlor Epoxide	82.2	73.5	P/P	49 - 184
2419482	Hexachlorobenzene	65.7	57.5	P/P	39 - 96.0
2419482	Kepone	73.8	78.8	P/P	10 - 217
2419482	Lambda-Cyhalothrin	91.7	85.6	P/P	21 - 193
2419482	Methoprene	66.5	58.3	P/P	20 - 106
2419482	Methoxychlor	66.0	62.6	P/P	53 - 118
2419482	MGK-264	78.5	79.2	P/P	40 - 118
2419482	Mirex	53.0	43.1	P/P	26 - 92.0
2419482	Oxychlordane	74.7	66.0	P/P	44 - 99.0
2419482	Permethrin	99.7	91.5	P/P	33 - 182

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419482	Phenothrin	68.6	45.9	P/P	10 - 129
2419482	Piperonyl Butoxide	82.6	90.6	P/P	10 - 211
2419482	Prallethrin	70.1	67.7	P/P	24 - 113
2419482	Tau-Fluvalinate	109	117	P/P	14 - 149
2419482	Tetramethrin	81.1	72.6	P/P	17 - 151
2419482	Trans-Nonachlor	65.2	58.4	P/P	42 - 102
2419482	Triclosan Methyl	75.0	69.3	P/P	48 - 108
2419482	Trifluralin	66.8	58.5	P/P	47 - 96.0
2419486	PCB-1016	60.1	54.2	P/P	46 - 111
2419486	PCB-1260	43.9	49.1	F/P	45 - 114

Reference Method: EPA 8276

Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419486	Chlordane	42.9	39.9	F/F	53 - 126
2419486	Toxaphene	48.6	44.5	F/F	56 - 211

Reference Method: EPA 8321B

Batch ID: P431550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418216	2,4,5-T	100	101	P/P	40 - 150
2418216	Acetaminophen	93.1	85.4	P/P	30 - 150
2418216	Acetamiprid	72.7	72.9	P/P	40 - 150
2418216	Afidopyropen	51.3	64.4	P/P	30 - 150
2418216	Benzovindiflupyr	89.4	97.9	P/P	40 - 150
2418216	Carbamazepine	65.7	68.5	P/P	40 - 150
2418216	Clothianidin	98.8	89.3	P/P	40 - 150
2418216	Dinotefuran	75.0	82.9	P/P	40 - 150
2418216	Diuron	54.1	37.6	P/F	40 - 150
2418216	Fenuron	75.3	77.8	P/P	40 - 150
2418216	Fluridone	86.7	96.4	P/P	40 - 150
2418216	Hydrocodone	63.6	62.1	P/P	40 - 150
2418216	Ibuprofen	66.0	58.3	P/P	40 - 150
2418216	Linuron	76.6	71.6	P/P	40 - 150
2418216	Mandestrobin	93.2	97.1	P/P	40 - 150
2418216	MCPP	115	109	P/P	40 - 150
2418216	Naproxen	64.9	86.9	P/P	40 - 150
2418216	Primidone	75.8	82.8	P/P	40 - 150
2418216	Pyraclostrobin	95.6	97.5	P/P	40 - 150
2418216	Silvex	78.9	83.6	P/P	40 - 150
2418216	Thiamethoxam	63.5	68.7	P/P	40 - 150
2418216	Tolfenpyrad	57.0	56.3	P/P	30 - 150
2418216	Triclopyr	101	104	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P431641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418283	Acesulfame K	92.4	94.6	P/P	40 - 150
2418283	AMPA	81.3	75.7	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P431641

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418283	Endothall	117	122	P/P	40 - 150
2418283	Glufosinate	86.7	82.7	P/P	40 - 150
2418283	Glyphosate	96.1	99.6	P/P	40 - 150
2418283	Sucralose	95.7	89.2	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P431650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418460	Calcium	0.0610	Spike	P	0 - 20
2418460	Iron	0.715	Spike	P	0 - 20
2418460	Magnesium	0.502	Spike	P	0 - 20
2418460	Potassium	0.0725	Spike	P	0 - 20
2418460	Sodium	0.618	Spike	P	0 - 20
2418460	Strontium	0.387	Spike	P	0 - 20
2418460	Tin	3.97	Spike	P	0 - 20
2418460	Titanium	0.0837	Spike	P	0 - 20
2418460	Vanadium	0.108	Spike	P	0 - 20
2418460	Zinc	0.0786	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418460	Aluminum	0.204	Spike	P	0 - 20
2418460	Antimony	1.27	Spike	P	0 - 20
2418460	Arsenic	0.374	Spike	P	0 - 20
2418460	Barium	0.0980	Spike	P	0 - 20
2418460	Beryllium	0.211	Spike	P	0 - 20
2418460	Boron	0.308	Spike	P	0 - 20
2418460	Cadmium	1.20	Spike	P	0 - 20
2418460	Chromium	0.174	Spike	P	0 - 20
2418460	Cobalt	0.391	Spike	P	0 - 20
2418460	Copper	0.527	Spike	P	0 - 20
2418460	Lead	1.07	Spike	P	0 - 20
2418460	Manganese	0.398	Spike	P	0 - 20
2418460	Molybdenum	0.495	Spike	P	0 - 20
2418460	Nickel	0.344	Spike	P	0 - 20
2418460	Selenium	2.93	Spike	P	0 - 20
2418460	Silver	0.197	Spike	P	0 - 20
2418460	Thallium	1.28	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419482	Aldrin	14.9	Spike	P	0 - 41
2419482	Alpha-BHC	5.96	Spike	P	0 - 25
2419482	Alpha-Chlordane	8.78	Spike	P	0 - 33
2419482	Beta-BHC	7.65	Spike	P	0 - 36
2419482	Beta-Cyfluthrin	8.75	Spike	P	0 - 42
2419482	Bifenthrin	21.7	Spike	P	0 - 53
2419482	Chlorothalonil	16.0	Spike	P	0 - 71
2419482	Cis-Nonachlor	13.3	Spike	P	0 - 29
2419482	Cypermethrin	6.10	Spike	P	0 - 40
2419482	Dacthal	4.34	Spike	P	0 - 26
2419482	DDD-p,p'	6.61	Spike	P	0 - 39
2419482	DDE-p,p'	11.3	Spike	P	0 - 33

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419482	DDT-p,p'	16.0	Spike	P	0 - 40
2419482	Delta-BHC	1.56	Spike	P	0 - 37
2419482	Deltamethrin	4.76	Spike	P	0 - 100
2419482	Dichlobenil	15.7	Spike	P	0 - 40
2419482	Dicofol	12.3	Spike	P	0 - 31
2419482	Dieldrin	11.0	Spike	P	0 - 27
2419482	Endosulfan I	14.3	Spike	P	0 - 23
2419482	Endosulfan II	11.2	Spike	P	0 - 28
2419482	Endosulfan Sulfate	4.95	Spike	P	0 - 38
2419482	Endrin	4.51	Spike	P	0 - 63
2419482	Endrin Aldehyde	3.34	Spike	P	0 - 60
2419482	Endrin Ketone	0.875	Spike	P	0 - 37
2419482	Esfenvalerate	1.59	Spike	P	0 - 52
2419482	Ethalfuralin	4.74	Spike	P	0 - 23
2419482	Fenpropathrin	6.59	Spike	P	0 - 32
2419482	Gamma-BHC	5.05	Spike	P	0 - 17
2419482	Gamma-Chlordane	10.3	Spike	P	0 - 40
2419482	Heptachlor	18.8	Spike	P	0 - 29
2419482	Heptachlor Epoxide	11.2	Spike	P	0 - 25
2419482	Hexachlorobenzene	13.2	Spike	P	0 - 36
2419482	Kepone	6.56	Spike	P	0 - 93
2419482	Lambda-Cyhalothrin	6.92	Spike	P	0 - 55
2419482	Methoprene	13.1	Spike	P	0 - 53
2419482	Methoxychlor	5.19	Spike	P	0 - 29
2419482	MGK-264	0.898	Spike	P	0 - 35
2419482	Mirex	20.6	Spike	P	0 - 46
2419482	Oxychlordane	12.4	Spike	P	0 - 29
2419482	Permethrin	8.59	Spike	P	0 - 44
2419482	Phenothrin	39.6	Spike	P	0 - 56
2419482	Piperonyl Butoxide	9.22	Spike	P	0 - 100
2419482	Prallethrin	3.48	Spike	P	0 - 42
2419482	Tau-Fluvalinate	7.57	Spike	P	0 - 54
2419482	Tetramethrin	11.2	Spike	P	0 - 51
2419482	Trans-Nonachlor	11.0	Spike	P	0 - 37
2419482	Triclosan Methyl	7.80	Spike	P	0 - 31
2419482	Trifluralin	13.3	Spike	P	0 - 30
2419486	PCB-1016	10.3	Spike	P	0 - 32
2419486	PCB-1260	11.3	Spike	P	0 - 31

Reference Method: EPA 8276
Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419486	Chlordane	7.31	Spike	P	0 - 25
2419486	Toxaphene	8.94	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P431550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418216	2,4-D	0.743	Spike	P	0 - 30
2418216	2,4,5-T	0.391	Spike	P	0 - 30
2418216	Acetaminophen	8.58	Spike	P	0 - 30
2418216	Acetamiprid	0.230	Spike	P	0 - 30
2418216	Afidopyropen	22.6	Spike	P	0 - 30
2418216	Bentazon	1.12	Spike	P	0 - 30
2418216	Benzovindiflupyr	9.04	Spike	P	0 - 30
2418216	Carbamazepine	4.24	Spike	P	0 - 30
2418216	Clothianidin	10.1	Spike	P	0 - 30
2418216	Dinotefuran	10.0	Spike	P	0 - 30
2418216	Diuron	28.5	Spike	P	0 - 30
2418216	Fenuron	3.25	Spike	P	0 - 30
2418216	Fluridone	7.68	Spike	P	0 - 30
2418216	Hydrocodone	2.40	Spike	P	0 - 30
2418216	Ibuprofen	12.4	Spike	P	0 - 30
2418216	Imazapyr	2.11	Spike	P	0 - 30
2418216	Imidacloprid	1.56	Spike	P	0 - 30
2418216	Linuron	6.73	Spike	P	0 - 30
2418216	Mandestrobin	4.08	Spike	P	0 - 30
2418216	MCP	4.84	Spike	P	0 - 30
2418216	Naproxen	29.0	Spike	P	0 - 30
2418216	Primidone	8.84	Spike	P	0 - 30
2418216	Pyraclostrobin	2.04	Spike	P	0 - 30
2418216	Silvex	5.76	Spike	P	0 - 30
2418216	Thiamethoxam	7.92	Spike	P	0 - 30
2418216	Tolfenpyrad	1.28	Spike	P	0 - 30
2418216	Triclopyr	2.66	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P431641

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418283	Acesulfame K	2.35	Spike	P	0 - 30
2418283	AMPA	7.09	Spike	P	0 - 30
2418283	Endothall	4.22	Spike	P	0 - 30
2418283	Glufosinate	4.79	Spike	P	0 - 30
2418283	Glyphosate	3.60	Spike	P	0 - 30
2418283	Sucralose	2.90	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2418911

Field Sample ID: G4NW0336

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	84.3	P	29 - 130
EPA 8270E	Decachlorobiphenyl	98.8	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	62.2	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	55.5	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	52.1	P	30 - 101
EPA 8276	PCNB	96.4	P	48 - 121

Lab Sample ID: 2418912

Field Sample ID: G4NW0395

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	89.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	58.5	P	30 - 160
EPA 8321B	Diuron-d6	45.5	P	30 - 160
EPA 8321B	Endothall-d6	93.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	82.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.5	P	30 - 160
EPA 8321B	Primidone-d5	88.5	P	30 - 160
EPA 8321B	Sucralose-d6	93.2	P	30 - 160

Lab Sample ID: 2418913

Field Sample ID: G4NW0357

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	113	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	64.4	P	30 - 160
EPA 8321B	Diuron-d6	75.3	P	30 - 160
EPA 8321B	Endothall-d6	92.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.1	P	30 - 160
EPA 8321B	Primidone-d5	85.0	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A120013

Included Lab Sample IDs: 2418914, 2418915, 2418916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Antimony	102	101	P/P	90 - 110
Arsenic	99.8	101	P/P	90 - 110
Barium	102	102	P/P	90 - 110
Beryllium	99.4	101	P/P	90 - 110
Boron	101	99.5	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	98.9	99.8	P/P	90 - 110
Cobalt	96.9	97.7	P/P	90 - 110
Copper	95.8	96.2	P/P	90 - 110
Lead	93.5	95.0	P/P	90 - 110
Manganese	98.9	101	P/P	90 - 110
Molybdenum	100	99.9	P/P	90 - 110
Nickel	97.0	97.6	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	102	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A120044

Included Lab Sample IDs: 2418912, 2418913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	92.4	102	P/P	60 - 160
Sucralose	97.3	91.5	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A120048

Included Lab Sample IDs: 2418912, 2418913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	88.6	87.0	P/P	60 - 160
Endothall	85.0	80.3	P/P	60 - 160
Glufosinate	89.4	89.8	P/P	60 - 160
Glyphosate	92.9	90.0	P/P	60 - 160

Reference Method: EPA 8270E

Run ID: A120059

Included Lab Sample IDs: 2418911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	99.3		P	80 - 120
Alpha-Chlordane	103		P	80 - 120
Beta-BHC	107		P	80 - 120
Beta-Cyfluthrin	116		P	80 - 120
Bifenthrin	102		P	80 - 120
Chlorothalonil	103		P	80 - 120
Cis-Nonachlor	105		P	80 - 120
Cypermethrin	103		P	80 - 120
Dacthal	105		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A120059
Included Lab Sample IDs: 2418911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDD-p,p'	110		P	80 - 120
DDE-p,p'	102		P	80 - 120
DDT-p,p'	100		P	80 - 120
Delta-BHC	101		P	80 - 120
Deltamethrin	104		P	80 - 120
Dichlobenil	103		P	80 - 120
Dicofol	90.7		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	102		P	80 - 120
Endosulfan II	105		P	80 - 120
Endosulfan Sulfate	99.0		P	80 - 120
Endrin	104		P	80 - 120
Endrin Aldehyde	98.6		P	80 - 120
Endrin Ketone	108		P	80 - 120
Esfenvalerate	105		P	80 - 120
Ethalfuralin	94.1		P	80 - 120
Fenpropathrin	101		P	80 - 120
Gamma-BHC	103		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	99.6		P	80 - 120
Heptachlor Epoxide	101		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	61.7*		F	80 - 120
Lambda-Cyhalothrin	113		P	80 - 120
Methoprene	103		P	80 - 120
Methoxychlor	101		P	80 - 120
MGK-264	101		P	80 - 120
Mirex	80.3		P	80 - 120
Oxychlordane	104		P	80 - 120
Permethrin	107		P	80 - 120
Phenothrin	107		P	80 - 120
Piperonyl Butoxide	94.2		P	80 - 120
Prallethrin	104		P	80 - 120
Tau-Fluvalinate	107		P	80 - 120
Tetramethrin	99.5		P	80 - 120
Trans-Nonachlor	104		P	80 - 120
Triclosan Methyl	101		P	80 - 120
Trifluralin	97.9		P	80 - 120

Reference Method: EPA 8276
Run ID: A120082
Included Lab Sample IDs: 2418911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	90.5		P	80 - 120
Toxaphene	86.7		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A120107

Included Lab Sample IDs: 2418912, 2418913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	77.1	74.7	P/P	50 - 150
2,4,5-T	86.2	78.2	P/P	50 - 150
Acetaminophen	92.9	88.7	P/P	60 - 160
Acetamiprid	115	119	P/P	50 - 150
Afidopyropen	95.0	93.3	P/P	50 - 150
Bentazon	149	137	P/P	50 - 160
Benzovindiflupyr	124	116	P/P	50 - 150
Carbamazepine	117	108	P/P	60 - 150
Clothianidin	112	91.3	P/P	60 - 150
Dinotefuran	101	94.3	P/P	50 - 150
Diuron	119	106	P/P	60 - 160
Fenuron	117	114	P/P	60 - 150
Fluridone	115	124	P/P	60 - 160
Hydrocodone	108	94.7	P/P	60 - 150
Ibuprofen	94.6	78.1	P/P	50 - 160
Imazapyr	108	124	P/P	50 - 150
Imidacloprid	74.7	77.0	P/P	60 - 150
Linuron	143	138	P/P	60 - 150
Mandestrobin	117	118	P/P	50 - 150
MCPP	80.0	78.7	P/P	50 - 150
Naproxen	99.1	98.2	P/P	50 - 160
Primidone	96.6	94.9	P/P	60 - 150
Pyraclostrobin	125	131	P/P	60 - 150
Silvex	63.8	66.0	P/P	50 - 150
Thiamethoxam	92.5	67.2	P/P	50 - 150
Tolfenpyrad	107	103	P/P	60 - 150
Triclopyr	80.9	77.5	P/P	50 - 150

Reference Method: EPA 8270E

Run ID: A120169

Included Lab Sample IDs: 2418911

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	93.1		P	80 - 120
PCB-1260	95.5		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A120209

Included Lab Sample IDs: 2418914, 2418915, 2418916

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Magnesium	102	105	P/P	90 - 110
Potassium	100	102	P/P	90 - 110
Sodium	99.1	101	P/P	90 - 110
Strontium	102	99.9	P/P	90 - 110
Tin	104	101	P/P	90 - 110
Titanium	101	98.4	P/P	90 - 110
Vanadium	102	99.1	P/P	90 - 110
Zinc	103	102	P/P	90 - 110

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	105	107	107	109			0.0610
	Iron	105	109	108	108			0.715
	Magnesium	105	106	105	108			0.502
	Potassium	101	103	103	101			0.0725
	Sodium	101	99.3	105				0.618
	Strontium	99.5	102	101	102			0.387
	Tin	101	105	101	104			3.97
	Titanium	100	103	103	96.5			0.0837
	Vanadium	100	104	104	105			0.108
	Zinc	99.2	102	103	104			0.0786
EPA 200.8 Rev. 5.4	Aluminum	103	103	103	99.0			0.204
	Antimony	103	104	106	101			1.27
	Arsenic	102	101	102	98.7			0.374
	Barium	106	106	106	105			0.0980
	Beryllium	99.8	101	101	93.7			0.211
	Boron	103	104	103	102			0.308
	Cadmium	101	101	102	101			1.20
	Chromium	98.9	97.5	97.7	97.3			0.174
	Cobalt	98.8	98.4	98.0	98.3			0.391
	Copper	98.2	99.2	98.7	97.0			0.527
	Lead	96.0	96.8	97.8	95.2			1.07
	Manganese	98.8	99.1	98.6	98.7			0.398
	Molybdenum	101	101	102	96.2			0.495
	Nickel	99.2	98.2	97.9	97.2			0.344
	Selenium	102	103	100	96.9			2.93
	Silver	104	104	104	102			0.197
	Thallium	102	104	106	104			1.28
EPA 8270E	Aldrin	49.6	45.8	39.4				14.9
	Alpha-BHC	81.1	79.3	74.7				5.96
	Alpha-Chlordane	73.8	68.6	62.8				8.78
	Beta-BHC	99.6	123	133				7.65
	Beta-Cyfluthrin	75.4	86.4	79.2				8.75
	Bifenthrin	52.5	65.5	52.7				21.7
	Chlorothalonil	110	142	167				16.0
	Cis-Nonachlor	72.5	65.4	57.3				13.3
	Cypermethrin	99.1	121	114				6.10
	Dacthal	85.5	78.3	81.8				4.34
	DDD-p,p'	69.0	63.1	59.0				6.61
	DDE-p,p'	70.9	62.1	55.5				11.3
	DDT-p,p'	68.0	64.5	55.0				16.0
	Delta-BHC	86.9	95.3	96.8				1.56
	Deltamethrin	139	171	163				4.76
	Dichlobenil	56.1	34.0	39.8				15.7
	Dicofol	73.7	70.8	62.6				12.3
	Dieldrin	79.4	71.8	63.2				11.0
	Endosulfan I	80.3	87.7	76.0				14.3
	Endosulfan II	78.5	79.5	71.1				11.2
	Endosulfan Sulfate	78.8	68.5	72.0				4.95
	Endrin	76.8	69.0	66.0				4.51
	Endrin Aldehyde	76.5	62.2	64.3				3.34
	Endrin Ketone	97.1	114	115				0.875
	Esfenvalerate	95.2	111	110				1.59
	Ethalfuralin	73.6	66.4	63.3				4.74
	Fenpropathrin	72.3	74.0	69.3				6.59

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Gamma-BHC	92.2	112	118		5.05
	Gamma-Chlordane	70.9	65.2	58.8		10.3
	Heptachlor	73.7	87.9	72.8		18.8
	Heptachlor Epoxide	83.6	82.2	73.5		11.2
	Hexachlorobenzene	68.6	65.7	57.5		13.2
	Kepone	63.5	73.8	78.8		6.56
	Lambda-Cyhalothrin	71.5	91.7	85.6		6.92
	Methoprene	66.1	66.5	58.3		13.1
	Methoxychlor	71.3	66.0	62.6		5.19
	MGK-264	86.3	78.5	79.2		0.898
	Mirex	51.2	53.0	43.1		20.6
	Oxychlordane	75.2	74.7	66.0		12.4
	PCB-1016	58.2	60.1	54.2		10.3
	PCB-1260	56.8	43.9	49.1		11.3
	Permethrin	86.9	99.7	91.5		8.59
	Phenothrin	67.9	68.6	45.9		39.6
	Piperonyl Butoxide	88.9	82.6	90.6		9.22
	Prallethrin	78.5	70.1	67.7		3.48
	Tau-Fluvalinate	87.4	109	117		7.57
	Tetramethrin	79.9	81.1	72.6		11.2
	Trans-Nonachlor	72.0	65.2	58.4		11.0
	Triclosan Methyl	74.5	75.0	69.3		7.80
	Trifluralin	75.0	66.8	58.5		13.3
EPA 8276	Chlordane	48.6	42.9	39.9		7.31
	Toxaphene	50.6	48.6	44.5		8.94
EPA 8321B	2,4-D	105				0.743
	2,4,5-T	86.1	100	101		0.391
	Acesulfame K	79.4	92.4	94.6		2.35
	Acetaminophen	95.0	93.1	85.4		8.58
	Acetamiprid	84.4	72.7	72.9		0.230
	Afidopyropen	64.2	51.3	64.4		22.6
	AMPA	95.6	81.3	75.7		7.09
	Bentazon	114				1.12
	Benzovindiflupyr	93.4	89.4	97.9		9.04
	Carbamazepine	77.8	65.7	68.5		4.24
	Clothianidin	97.9	98.8	89.3		10.1
	Dinotefuran	102	75.0	82.9		10.0
	Diuron	82.4	54.1	37.6		28.5
	Endothall	97.5	117	122		4.22
	Fenuron	95.0	75.3	77.8		3.25
	Fluridone	94.0	86.7	96.4		7.68
	Glufosinate	100	86.7	82.7		4.79
	Glyphosate	95.9	96.1	99.6		3.60
	Hydrocodone	86.9	63.6	62.1		2.40
	Ibuprofen	82.3	66.0	58.3		12.4
	Imazapyr	95.4				2.11
	Imidacloprid	74.0				1.56
	Linuron	82.7	76.6	71.6		6.73
	Mandestrobin	98.7	93.2	97.1		4.08
	MCPP	101	115	109		4.84
	Naproxen	68.7	64.9	86.9		29.0
	Primidone	75.6	75.8	82.8		8.84
	Pyraclostrobin	88.1	95.6	97.5		2.04
	Silvex	78.9	78.9	83.6		5.76

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Sucralose	112	95.7	89.2			2.90
	Thiamethoxam	78.7	63.5	68.7			7.92
	Tolfenpyrad	53.0	57.0	56.3			1.28
	Triclopyr	93.6	101	104			2.66

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	2418914, 2418915, 2418916
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2418914, 2418915, 2418916
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2418911
EPA 8270E	PCBs in water matrices by GC/MS/MS	2418911
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2418911
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2418912, 2418913
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2418914, 2418915, 2418916

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	06/21/2023	06/22/2023 12:45	George D Taylor	07/06/2023 15:33	Samatha Luckman	2418914
	06/21/2023	06/22/2023 12:45	George D Taylor	07/06/2023 15:38	Samatha Luckman	2418915
	06/21/2023	06/22/2023 12:45	George D Taylor	07/06/2023 15:44	Samatha Luckman	2418916
EPA 200.8 Rev. 5.4	06/21/2023	06/22/2023 12:45	George D Taylor	06/23/2023 16:12	Emily M Philpot	2418914
	06/21/2023	06/22/2023 12:45	George D Taylor	06/23/2023 16:22	Emily M Philpot	2418915
	06/21/2023	06/22/2023 12:45	George D Taylor	06/23/2023 17:00	Emily M Philpot	2418916
EPA 8270E	06/21/2023	06/23/2023 08:00	Fe-Val Siddell	06/27/2023 22:44	Michael Poppell	2418911
	06/21/2023	06/23/2023 08:00	Fe-Val Siddell	06/30/2023 03:00	Lipi Saha	2418911
EPA 8276	06/21/2023	06/23/2023 08:00	Fe-Val Siddell	06/28/2023 14:29	Arthur Maknenko	2418911
EPA 8321B	06/21/2023	06/22/2023 09:00	Hoor Shaik	06/26/2023 20:09	Juyoung Kim	2418912
	06/21/2023	06/22/2023 09:00	Hoor Shaik	06/26/2023 20:28	Juyoung Kim	2418913
	06/21/2023	06/23/2023 16:00	Hana Lee	06/24/2023 04:32	Tae K Lee	2418912
	06/21/2023	06/23/2023 16:00	Hana Lee	06/24/2023 04:46	Tae K Lee	2418913
	06/21/2023	06/23/2023 16:00	Hana Lee	06/24/2023 16:40	Tae K Lee	2418912
SM 2340 B-2011	06/21/2023	06/23/2023 16:00	Hana Lee	06/24/2023 16:53	Tae K Lee	2418913
	06/21/2023			07/06/2023 15:33	Samatha Luckman	2418914
	06/21/2023			07/06/2023 15:38	Samatha Luckman	2418915
	06/21/2023			07/06/2023 15:44	Samatha Luckman	2418916