

Chemical Analysis Report

NW-DIST-2023-04-26-02

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

Event Description: **Laurel Hill West**
Request ID: **RQ-2023-04-24-18**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 12-MAY-2023 09:46

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical 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: OAK CREEK BELOW TOMMY STEELE ROAD Collection Date/Time: 04/24/2023 11:10

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403007	EPA 8321B	2,4-D	0.0020	U	ug/L	P429013	
		Acesulfame K	0.10	U	ug/L	P428982	
		2,4,5-T	0.0040	U	ug/L	P429013	
		AMPA	0.10	U	ug/L	P428982	
		Acetaminophen	0.0080	U	ug/L	P429013	
		Acetamiprid	0.0020	U	ug/L	P429013	
		Endothall	0.25	U	ug/L	P428982	
		Glufosinate	0.10	U	ug/L	P428982	
		Glyphosate	0.10	U	ug/L	P428982	
		Afidopyropen	0.0020	U	ug/L	P429013	
		Bentazon	8.0E-04	U	ug/L	P429013	
		Sucralose	0.050		ug/L	P428982	
		Benzovindiflupyr	0.0020	U	ug/L	P429013	
		Carbamazepine	8.0E-04	U	ug/L	P429013	
		Clothianidin	0.0020	U	ug/L	P429013	
		Dinotefuran	0.0020	U	ug/L	P429013	
		Diuron	0.0020	U	ug/L	P429013	
		Fenuron	0.032	U	ug/L	P429013	
		Fluridone	8.0E-04	U	ug/L	P429013	
		Imazapyr	0.0040	U	ug/L	P429013	
		Hydrocodone	0.0020	U	ug/L	P429013	
		Ibuprofen	0.080	U	ug/L	P429013	
		Imidacloprid	0.0020	U	ug/L	P429013	
		Linuron	0.0040	U	ug/L	P429013	
		Mandestrobin	0.0020	U	ug/L	P429013	
		MCPP	0.0020	U	ug/L	P429013	
		Naproxen	0.0080	U	ug/L	P429013	
		Primidone	0.0040	U	ug/L	P429013	
		Pyraclostrobin	0.0020	U	ug/L	P429013	
		Silvex	0.0040	U	ug/L	P429013	
		Thiamethoxam	0.0020	U	ug/L	P429013	
		Tolfenpyrad	0.0020	U	ug/L	P429013	
		Triclopyr	0.0040	U	ug/L	P429013	
2403009	EPA 200.7 Rev. 4.4	Calcium	1.90		mg/L	P429078	
		Iron	2.84E+03		ug/L	P429078	
		Magnesium	0.92		mg/L	P429078	
		Potassium	0.51	I	mg/L	P429078	
		Sodium	2.0	I	mg/L	P429078	
		Strontium	10.3		ug/L	P429078	
		Tin	3.0	U	ug/L	P429078	
		Titanium	4.3		ug/L	P429078	
		Vanadium	2.0	U	ug/L	P429078	
		Zinc	5.0	U	ug/L	P429078	
	EPA 200.8 Rev. 5.4	Aluminum	359		ug/L	P429078	

Field ID: G4NW0395

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403009	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P429078	
		Arsenic	0.84		ug/L	P429078	
		Barium	25.7		ug/L	P429078	
		Beryllium	0.131		ug/L	P429078	
		Boron	8.1		ug/L	P429078	
		Cadmium	0.020	U	ug/L	P429078	
		Chromium	0.58	I	ug/L	P429078	
		Cobalt	2.49		ug/L	P429078	
		Copper	0.46	I	ug/L	P429078	
		Lead	0.70		ug/L	P429078	
		Manganese	177		ug/L	P429078	
		Molybdenum	0.15	U	ug/L	P429078	
		Nickel	1.2	I	ug/L	P429078	
		Selenium	0.20	U	ug/L	P429078	
		Silver	0.010	U	ug/L	P429078	
		Thallium	0.10	U	ug/L	P429078	
	SM 2340 B-2011	Hardness	8.5		mg/L	P429078	

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 and lead result was confirmed in the undigested sample on 05/01/2023.

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

Collection Date/Time: 04/24/2023 12:00

Field ID: G4NW0357

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403008	EPA 8321B	2,4-D	0.0020	U	ug/L	P429013	
		Acesulfame K	0.10	U	ug/L	P428982	
		2,4,5-T	0.0040	U	ug/L	P429013	
		AMPA	0.10	U	ug/L	P428982	
		Acetaminophen	0.0080	U	ug/L	P429013	
		Acetamiprid	0.0020	U	ug/L	P429013	
		Endothall	0.25	U	ug/L	P428982	
		Glufosinate	0.10	U	ug/L	P428982	
		Glyphosate	0.10	U	ug/L	P428982	
		Afidopyropen	0.0020	U	ug/L	P429013	
		Bentazon	8.0E-04	U	ug/L	P429013	
		Sucralose	0.25		ug/L	P428982	
		Benzovindiflupyr	0.0020	U	ug/L	P429013	
		Carbamazepine	8.0E-04	U	ug/L	P429013	
		Clothianidin	0.0020	U	ug/L	P429013	
		Dinotefuran	0.0020	U	ug/L	P429013	
		Diuron	0.0020	U	ug/L	P429013	
		Fenuron	0.032	U	ug/L	P429013	
		Fluridone	8.0E-04	U	ug/L	P429013	
		Imazapyr	0.0040	U	ug/L	P429013	
		Hydrocodone	0.0020	U	ug/L	P429013	
		Ibuprofen	0.080	U	ug/L	P429013	
		Imidacloprid	0.0045	I	ug/L	P429013	
		Linuron	0.0040	U	ug/L	P429013	
		Mandestrobin	0.0020	U	ug/L	P429013	
		MCPP	0.0020	U	ug/L	P429013	
		Naproxen	0.0080	U	ug/L	P429013	
		Primidone	0.0040	U	ug/L	P429013	
		Pyraclostrobin	0.0020	U	ug/L	P429013	
		Silvex	0.0040	U	ug/L	P429013	
		Thiamethoxam	0.0020	U	ug/L	P429013	
		Tolfenpyrad	0.0020	U	ug/L	P429013	
		Triclopyr	0.0040	U	ug/L	P429013	

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: 04/24/2023 09:50

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403006	EPA 8270E	Aldrin	0.69	U	ng/L	P428986	
		Alpha-BHC	0.11	U	ng/L	P428986	
		Alpha-Chlordane	0.21	U	ng/L	P428986	
		PCB-1016	2.1	U	ng/L	P428986	
		Beta-BHC	0.11	U	ng/L	P428986	
		PCB-1221	2.1	U	ng/L	P428986	
		Beta-Cyfluthrin	1.3	U	ng/L	P428986	
		PCB-1232	2.1	U	ng/L	P428986	
		Bifenthrin	0.53	U	ng/L	P428986	
		PCB-1242	2.1	U	ng/L	P428986	
		PCB-1248	2.1	U	ng/L	P428986	
		Chlorothalonil	3.8	U	ng/L	P428986	MS
		PCB-1254	2.1	U	ng/L	P428986	
		Cis-Nonachlor	0.21	U	ng/L	P428986	
		PCB-1260	2.1	U	ng/L	P428986	
		Cypermethrin	1.6	U	ng/L	P428986	
		Dacthal	0.16	U	ng/L	P428986	
		DDD-p,p'	0.27	U	ng/L	P428986	
		DDE-p,p'	0.21	U	ng/L	P428986	
		DDT-p,p'	0.27	U	ng/L	P428986	
		Delta-BHC	0.43	U	ng/L	P428986	
		Deltamethrin	1.3	U	ng/L	P428986	
		Dichlobenil	0.27	U	ng/L	P428986	
		Dicofol	1.3	U	ng/L	P428986	
		Dieldrin	0.43	U	ng/L	P428986	
		Endosulfan I	0.43	U	ng/L	P428986	
		Endosulfan II	0.43	U	ng/L	P428986	
		Endosulfan Sulfate	0.32	U	ng/L	P428986	
		Endrin	0.43	U	ng/L	P428986	
		Endrin Aldehyde	0.80	U	ng/L	P428986	
		Endrin Ketone	0.43	U	ng/L	P428986	
		Esfenvalerate	0.80	U	ng/L	P428986	
		Ethalfuralin	0.16	U	ng/L	P428986	
		Fenpropathrin	0.27	U	ng/L	P428986	
		Gamma-BHC	0.13	U	ng/L	P428986	
		Gamma-Chlordane	0.21	U	ng/L	P428986	
		Heptachlor	0.21	U	ng/L	P428986	
		Heptachlor Epoxide	0.27	U	ng/L	P428986	
		Hexachlorobenzene**	1.1	U	ng/L	P428986	
		Kepone	5.3	U	ng/L	P428986	
		Lambda-Cyhalothrin	0.80	U	ng/L	P428986	
		Methoprene	0.80	U	ng/L	P428986	
		Methoxychlor	0.32	U	ng/L	P428986	
		MGK-264	0.21	U	ng/L	P428986	

Field ID: G4NW0336

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2403006	EPA 8270E	Mirex	0.37	U	ng/L	P428986	
		Oxychlordane	0.32	U	ng/L	P428986	
		Permethrin	1.7	U	ng/L	P428986	
		Phenothrin	0.96	U	ng/L	P428986	
		Piperonyl Butoxide	0.16	U	ng/L	P428986	
		Prallethrin	2.1	U	ng/L	P428986	
		Tau-Fluvalinate	0.27	U	ng/L	P428986	
		Tetramethrin	0.80	U	ng/L	P428986	
		Trans-Nonachlor	0.21	U	ng/L	P428986	
		Triclosan Methyl	0.16	U	ng/L	P428986	
		Trifluralin	0.21	U	ng/L	P428986	
		Chlordane	2.1	U	ng/L	P428986	
		Toxaphene	16	U	ng/L	P428986	
2403010	EPA 200.7 Rev. 4.4	Calcium	2.25		mg/L	P429078	
		Iron	460		ug/L	P429078	
		Magnesium	1.34		mg/L	P429078	
		Potassium	0.41	I	mg/L	P429078	
		Sodium	2.4		mg/L	P429078	
		Strontium	10.9		ug/L	P429078	
		Tin	3.0	U	ug/L	P429078	
		Titanium	0.99	I	ug/L	P429078	
		Vanadium	2.0	U	ug/L	P429078	
		Zinc	5.0	U	ug/L	P429078	
	EPA 200.8 Rev. 5.4	Aluminum	74		ug/L	P429078	
		Antimony	0.050	U	ug/L	P429078	
		Arsenic	0.27		ug/L	P429078	
		Barium	23.2		ug/L	P429078	
		Beryllium	0.013	I	ug/L	P429078	
		Boron	10.2		ug/L	P429078	
		Cadmium	0.020	U	ug/L	P429078	
		Chromium	0.40	U	ug/L	P429078	
		Cobalt	0.129		ug/L	P429078	
		Copper	0.40	U	ug/L	P429078	
		Lead	0.20	U	ug/L	P429078	
		Manganese	9.67		ug/L	P429078	
		Molybdenum	0.15	U	ug/L	P429078	
		Nickel	0.50	U	ug/L	P429078	
		Selenium	0.20	U	ug/L	P429078	
	SM 2340 B-2011	Silver	0.010	U	ug/L	P429078	
		Thallium	0.10	U	ug/L	P429078	
		Hardness	11.1		mg/L	P429078	

Ref. Method and Comment:

EPA 8270E: MS precision for chlorothalonil not assessed due to no recoveries.

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429078

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: P429078

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: P428986

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: P428986

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: P428986

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: P428986

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: P428982

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P429013

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	99.5		P	80 - 120
Iron	99.3		P	80 - 120
Magnesium	101		P	80 - 120
Potassium	99.4		P	80 - 120
Sodium	101		P	80 - 120
Strontium	96.9		P	80 - 120
Tin	95.5		P	80 - 120
Titanium	99.0		P	80 - 120
Vanadium	98.8		P	80 - 120
Zinc	98.4		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	100		P	85 - 115
Barium	105		P	85 - 115
Beryllium	94.7		P	85 - 115
Boron	103		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	103		P	85 - 115
Copper	97.7		P	85 - 115
Lead	101		P	85 - 115
Manganese	98.8		P	85 - 115
Molybdenum	99.1		P	85 - 115
Nickel	100		P	85 - 115
Selenium	101		P	85 - 115
Silver	105		P	85 - 115
Thallium	97.2		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P428986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	50.1		P	10 - 92.0
Alpha-BHC	92.8		P	75 - 107
Alpha-Chlordane	70.5		P	50 - 108
Beta-BHC	95.2		P	36 - 138
Beta-Cyfluthrin	80.3		P	20 - 161
Bifenthrin	38.2		P	10 - 119
Chlorothalonil	54.8		P	26 - 186
Cis-Nonachlor	59.5		P	42 - 119
Cypermethrin	74.8		P	22 - 150
Dacthal	96.4		P	72 - 119
DDD-p,p'	54.8		P	45 - 107
DDE-p,p'	57.0		P	48 - 106
DDT-p,p'	64.0		P	48 - 110
Delta-BHC	102		P	54 - 140
Deltamethrin	86.0		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P428986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	70.7		P	36 - 117
Dicofol	73.7		P	46 - 155
Dieldrin	65.6		P	54 - 110
Endosulfan I	67.1		P	59 - 105
Endosulfan II	67.9		P	51 - 118
Endosulfan Sulfate	102		P	57 - 121
Endrin	64.0		P	10 - 120
Endrin Aldehyde	80.1		P	34 - 118
Endrin Ketone	121		P	69 - 177
Esfenvalerate	70.2		P	23 - 168
Ethalfuralin	71.5		P	49 - 99.0
Fenpropathrin	66.1		P	34 - 117
Gamma-BHC	102		P	72 - 117
Gamma-Chlordane	58.9		P	43 - 106
Heptachlor	66.8		P	41 - 98.0
Heptachlor Epoxide	87.8		P	57 - 106
Hexachlorobenzene	59.6		P	36 - 99.0
Kepone	149		P	16 - 215
Lambda-Cyhalothrin	54.1		P	21 - 177
Methoprene	43.0		P	10 - 119
Methoxychlor	74.8		P	60 - 112
MGK-264	82.6		P	26 - 122
Mirex	41.5		P	10 - 169
Oxychlordane	62.7		P	43 - 105
PCB-1016	75.0		P	48 - 112
PCB-1260	67.6		P	44 - 118
Permethrin	60.9		P	24 - 148
Phenothrin	45.7		P	10 - 106
Piperonyl Butoxide	80.9		P	10 - 139
Prallethrin	62.5		P	17 - 109
Tau-Fluvalinate	60.2		P	13 - 131
Tetramethrin	74.0		P	10 - 132
Trans-Nonachlor	60.6		P	44 - 106
Triclosan Methyl	67.0		P	59 - 109
Trifluralin	70.7		P	44 - 101

Reference Method: EPA 8276

Batch ID: P428986

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	74.5		P	61 - 116
Toxaphene	78.5		P	48 - 124

Reference Method: EPA 8321B

Batch ID: P428982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	122		P	40 - 150
AMPA	96.2		P	40 - 150
Endothall	80.7		P	40 - 150
Glufosinate	77.6		P	40 - 150
Glyphosate	98.2		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P428982

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	102		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429013

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	106		P	40 - 150
2,4,5-T	100		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Acetamiprid	81.7		P	40 - 150
Afidopyropen	66.2		P	30 - 150
Bentazon	95.9		P	30 - 150
Benzovindiflupyr	91.6		P	40 - 150
Carbamazepine	98.7		P	40 - 150
Clothianidin	95.4		P	40 - 150
Dinotefuran	99.3		P	40 - 150
Diuron	88.5		P	40 - 150
Fenuron	93.5		P	40 - 150
Fluridone	89.2		P	40 - 150
Hydrocodone	90.7		P	40 - 150
Ibuprofen	93.1		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	86.9		P	40 - 150
Linuron	87.0		P	40 - 150
Mandestrobin	88.0		P	40 - 150
MCPP	109		P	40 - 150
Naproxen	82.6		P	40 - 150
Primidone	92.2		P	40 - 150
Pyraclostrobin	86.0		P	40 - 150
Silvex	96.2		P	40 - 150
Thiamethoxam	97.2		P	40 - 150
Tolfenpyrad	59.4		P	30 - 150
Triclopyr	89.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P429078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403010	Calcium	98.5	100	P/P	80 - 120
2403010	Iron	100	102	P/P	80 - 120
2403010	Magnesium	100	103	P/P	80 - 120
2403010	Potassium	99.3	99.3	P/P	80 - 120
2403010	Sodium	100	102	P/P	80 - 120
2403010	Strontium	97.6	97.5	P/P	80 - 120
2403010	Tin	94.3	96.4	P/P	80 - 120
2403010	Titanium	97.8	97.9	P/P	80 - 120
2403010	Vanadium	97.3	97.1	P/P	80 - 120
2403010	Zinc	95.8	96.1	P/P	80 - 120
2403167	Calcium	101		P	80 - 120
2403167	Iron	101		P	80 - 120
2403167	Magnesium	101		P	80 - 120
2403167	Potassium	98.8		P	80 - 120
2403167	Sodium	101		P	80 - 120
2403167	Strontium	98.3		P	80 - 120
2403167	Tin	96.9		P	80 - 120
2403167	Titanium	97.4		P	80 - 120
2403167	Vanadium	98.4		P	80 - 120
2403167	Zinc	98.6		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403010	Aluminum	98.9	97.4	P/P	80 - 120
2403010	Antimony	105	103	P/P	80 - 120
2403010	Arsenic	99.7	99.2	P/P	80 - 120
2403010	Barium	106	103	P/P	80 - 120
2403010	Beryllium	94.9	93.4	P/P	80 - 120
2403010	Boron	105	100	P/P	80 - 120
2403010	Cadmium	101	99.4	P/P	80 - 120
2403010	Chromium	102	100	P/P	80 - 120
2403010	Cobalt	104	102	P/P	80 - 120
2403010	Copper	100	98.0	P/P	80 - 120
2403010	Lead	104	103	P/P	80 - 120
2403010	Manganese	103	98.6	P/P	80 - 120
2403010	Molybdenum	98.4	98.0	P/P	80 - 120
2403010	Nickel	101	99.3	P/P	80 - 120
2403010	Selenium	99.2	98.6	P/P	80 - 120
2403010	Silver	104	103	P/P	80 - 120
2403010	Thallium	103	101	P/P	80 - 120
2403167	Aluminum	97.8		P	80 - 120
2403167	Antimony	104		P	80 - 120
2403167	Arsenic	97.9		P	80 - 120
2403167	Barium	102		P	80 - 120
2403167	Beryllium	89.1		P	80 - 120
2403167	Boron	103		P	80 - 120
2403167	Cadmium	102		P	80 - 120
2403167	Chromium	101		P	80 - 120
2403167	Cobalt	103		P	80 - 120
2403167	Copper	96.3		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2403167	Lead	104		P	80 - 120
2403167	Manganese	101		P	80 - 120
2403167	Molybdenum	98.7		P	80 - 120
2403167	Nickel	98.2		P	80 - 120
2403167	Selenium	98.8		P	80 - 120
2403167	Silver	103		P	80 - 120
2403167	Thallium	102		P	80 - 120

Reference Method: EPA 8270E
Batch ID: P428986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402675	Aldrin	51.4	43.2	P/P	20 - 82.0
2402675	Alpha-BHC	90.9	82.5	P/P	71 - 109
2402675	Alpha-Chlordane	71.2	63.0	P/P	42 - 106
2402675	Beta-BHC	87.4	91.3	P/P	69 - 180
2402675	Beta-Cyfluthrin	65.4	72.5	P/P	18 - 175
2402675	Bifenthrin	36.8	34.0	P/P	21 - 128
2402675	Chlorothalonil	0.0	0.0	F/F	10 - 300
2402675	Cis-Nonachlor	58.1	44.7	P/P	34 - 106
2402675	Cypermethrin	61.5	67.9	P/P	22 - 158
2402675	Dacthal	87.6	88.9	P/P	54 - 116
2402675	DDD-p,p'	55.3	40.5	P/P	34 - 107
2402675	DDE-p,p'	61.0	49.1	P/P	33 - 110
2402675	DDT-p,p'	59.3	52.3	P/P	50 - 122
2402675	Delta-BHC	91.2	98.6	P/P	77 - 193
2402675	Deltamethrin	70.9	86.8	P/P	10 - 195
2402675	Dichlobenil	59.4	54.2	P/P	25 - 113
2402675	Dicofol	67.2	58.7	P/P	38 - 247
2402675	Dieldrin	68.6	53.1	P/P	45 - 118
2402675	Endosulfan I	68.0	54.0	P/P	51 - 106
2402675	Endosulfan II	67.1	55.7	P/P	37 - 122
2402675	Endosulfan Sulfate	88.3	75.8	P/P	43 - 132
2402675	Endrin	68.2	52.5	P/P	29 - 101
2402675	Endrin Aldehyde	64.9	59.2	P/P	19 - 110
2402675	Endrin Ketone	117	115	P/P	60 - 140
2402675	Esfenvalerate	57.5	69.9	P/P	26 - 199
2402675	Ethalfuralin	72.6	58.0	P/P	45 - 99.0
2402675	Fenpropathrin	61.0	53.2	P/P	35 - 120
2402675	Gamma-BHC	99.9	94.7	P/P	63 - 128
2402675	Gamma-Chlordane	61.9	50.3	P/P	40 - 104
2402675	Heptachlor	64.2	56.8	P/P	36 - 97.0
2402675	Heptachlor Epoxide	80.1	72.6	P/P	49 - 184
2402675	Hexachlorobenzene	51.8	41.1	P/P	39 - 96.0
2402675	Kepone	64.8	119	P/P	10 - 217
2402675	Lambda-Cyhalothrin	48.6	50.0	P/P	21 - 193
2402675	Methoprene	43.7	36.1	P/P	20 - 106
2402675	Methoxychlor	65.0	62.0	P/P	53 - 118
2402675	MGK-264	77.8	76.4	P/P	40 - 118
2402675	Mirex	43.6	34.7	P/P	26 - 92.0
2402675	Oxychlordane	66.2	53.6	P/P	44 - 99.0
2402675	Permethrin	52.7	53.0	P/P	33 - 182

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P428986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402675	Phenothrin	44.9	48.6	P/P	10 - 129
2402675	Piperonyl Butoxide	73.0	60.9	P/P	10 - 211
2402675	Prallethrin	67.3	52.8	P/P	24 - 113
2402675	Tau-Fluvalinate	51.1	61.4	P/P	14 - 149
2402675	Tetramethrin	69.3	68.8	P/P	17 - 151
2402675	Trans-Nonachlor	60.6	50.2	P/P	42 - 102
2402675	Triclosan Methyl	71.4	53.0	P/P	48 - 108
2402675	Trifluralin	69.0	58.3	P/P	47 - 96.0
2402808	PCB-1016	77.2	71.1	P/P	46 - 111
2402808	PCB-1260	71.0	64.9	P/P	45 - 114

Reference Method: EPA 8276

Batch ID: P428986

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402808	Chlordane	77.6	77.2	P/P	53 - 126
2402808	Toxaphene	92.8	95.5	P/P	56 - 211

Reference Method: EPA 8321B

Batch ID: P428982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402494	Acesulfame K	144	144	P/P	40 - 150
2402494	AMPA	90.5	88.5	P/P	40 - 150
2402494	Endothall	80.5	81.7	P/P	40 - 150
2402494	Glufosinate	111	88.7	P/P	40 - 150
2402494	Glyphosate	121	149	P/P	40 - 150
2402494	Sucralose	119	108	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P429013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402644	2,4,5-T	115	123	P/P	40 - 150
2402644	Acetaminophen	101	102	P/P	30 - 150
2402644	Acetamiprid	78.3	80.3	P/P	40 - 150
2402644	Afidopyropen	103	94.8	P/P	30 - 150
2402644	Benzovindiflupyr	95.0	87.1	P/P	40 - 150
2402644	Carbamazepine	91.8	82.8	P/P	40 - 150
2402644	Clothianidin	107	101	P/P	40 - 150
2402644	Dinotefuran	69.9	67.7	P/P	40 - 150
2402644	Diuron	75.7	77.1	P/P	40 - 150
2402644	Fenuron	63.6	63.6	P/P	40 - 150
2402644	Hydrocodone	61.2	60.3	P/P	40 - 150
2402644	Ibuprofen	84.7	92.0	P/P	40 - 150
2402644	Imazapyr	100	98.0	P/P	40 - 150
2402644	Imidacloprid	132	124	P/P	40 - 150
2402644	Linuron	81.7	73.9	P/P	40 - 150
2402644	Mandestrobin	95.7	87.3	P/P	40 - 150
2402644	MCP	131	131	P/P	40 - 150
2402644	Naproxen	91.2	78.0	P/P	40 - 150
2402644	Primidone	90.8	93.7	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P429013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2402644	Pyraclostrobin	94.7	85.7	P/P	40 - 150
2402644	Silvex	110	102	P/P	40 - 150
2402644	Thiamethoxam	89.0	83.4	P/P	40 - 150
2402644	Tolfenpyrad	60.8	58.8	P/P	30 - 150
2402644	Triclopyr	127	129	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403010	Calcium	1.12	Spike	P	0 - 20
2403010	Iron	1.24	Spike	P	0 - 20
2403010	Magnesium	1.53	Spike	P	0 - 20
2403010	Potassium	0.0240	Spike	P	0 - 20
2403010	Sodium	1.10	Spike	P	0 - 20
2403010	Strontium	0.0836	Spike	P	0 - 20
2403010	Tin	2.24	Spike	P	0 - 20
2403010	Titanium	0.139	Spike	P	0 - 20
2403010	Vanadium	0.275	Spike	P	0 - 20
2403010	Zinc	0.258	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2403010	Aluminum	1.35	Spike	P	0 - 20
2403010	Antimony	1.43	Spike	P	0 - 20
2403010	Arsenic	0.557	Spike	P	0 - 20
2403010	Barium	2.36	Spike	P	0 - 20
2403010	Beryllium	1.56	Spike	P	0 - 20
2403010	Boron	4.32	Spike	P	0 - 20
2403010	Cadmium	1.11	Spike	P	0 - 20
2403010	Chromium	2.00	Spike	P	0 - 20
2403010	Cobalt	1.98	Spike	P	0 - 20
2403010	Copper	2.55	Spike	P	0 - 20
2403010	Lead	1.31	Spike	P	0 - 20
2403010	Manganese	3.20	Spike	P	0 - 20
2403010	Molybdenum	0.468	Spike	P	0 - 20
2403010	Nickel	1.53	Spike	P	0 - 20
2403010	Selenium	0.570	Spike	P	0 - 20
2403010	Silver	0.735	Spike	P	0 - 20
2403010	Thallium	2.00	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P428986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402675	Aldrin	17.4	Spike	P	0 - 41
2402675	Alpha-BHC	9.60	Spike	P	0 - 25
2402675	Alpha-Chlordane	12.2	Spike	P	0 - 33
2402675	Beta-BHC	4.36	Spike	P	0 - 36
2402675	Beta-Cyfluthrin	10.3	Spike	P	0 - 42
2402675	Bifenthrin	7.71	Spike	P	0 - 53
2402675	Cis-Nonachlor	26.2	Spike	P	0 - 29
2402675	Cypermethrin	9.84	Spike	P	0 - 40
2402675	Dacthal	1.46	Spike	P	0 - 26
2402675	DDD-p,p'	31.0	Spike	P	0 - 39
2402675	DDE-p,p'	21.5	Spike	P	0 - 33
2402675	DDT-p,p'	12.5	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P428986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402675	Delta-BHC	7.77	Spike	P	0 - 37
2402675	Deltamethrin	20.1	Spike	P	0 - 100
2402675	Dichlobenil	9.02	Spike	P	0 - 40
2402675	Dicofol	13.4	Spike	P	0 - 31
2402675	Dieldrin	25.4	Spike	P	0 - 27
2402675	Endosulfan I	22.9	Spike	P	0 - 23
2402675	Endosulfan II	18.6	Spike	P	0 - 28
2402675	Endosulfan Sulfate	15.2	Spike	P	0 - 38
2402675	Endrin	26.1	Spike	P	0 - 63
2402675	Endrin Aldehyde	9.23	Spike	P	0 - 60
2402675	Endrin Ketone	1.46	Spike	P	0 - 37
2402675	Esfenvalerate	19.5	Spike	P	0 - 52
2402675	Ethalfuralin	22.5	Spike	P	0 - 23
2402675	Fenpropathrin	13.7	Spike	P	0 - 32
2402675	Gamma-BHC	5.37	Spike	P	0 - 17
2402675	Gamma-Chlordane	20.6	Spike	P	0 - 40
2402675	Heptachlor	12.2	Spike	P	0 - 29
2402675	Heptachlor Epoxide	9.91	Spike	P	0 - 25
2402675	Hexachlorobenzene	23.2	Spike	P	0 - 36
2402675	Kepone	59.2	Spike	P	0 - 93
2402675	Lambda-Cyhalothrin	2.90	Spike	P	0 - 55
2402675	Methoprene	19.0	Spike	P	0 - 53
2402675	Methoxychlor	4.71	Spike	P	0 - 29
2402675	MGK-264	1.78	Spike	P	0 - 35
2402675	Mirex	22.7	Spike	P	0 - 46
2402675	Oxychlordane	20.9	Spike	P	0 - 29
2402675	Permethrin	0.474	Spike	P	0 - 44
2402675	Phenothrin	8.04	Spike	P	0 - 56
2402675	Piperonyl Butoxide	18.0	Spike	P	0 - 100
2402675	Prallethrin	24.2	Spike	P	0 - 42
2402675	Tau-Fluvalinate	18.4	Spike	P	0 - 54
2402675	Tetramethrin	0.727	Spike	P	0 - 51
2402675	Trans-Nonachlor	18.9	Spike	P	0 - 37
2402675	Triclosan Methyl	29.5	Spike	P	0 - 31
2402675	Trifluralin	16.8	Spike	P	0 - 30
2402808	PCB-1016	8.23	Spike	P	0 - 32
2402808	PCB-1260	8.93	Spike	P	0 - 31

Reference Method: EPA 8276
Batch ID: P428986

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402808	Chlordane	0.611	Spike	P	0 - 25
2402808	Toxaphene	2.82	Spike	P	0 - 26

Reference Method: EPA 8321B
Batch ID: P428982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P428982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402494	Acesulfame K	0.560	Spike	P	0 - 30
2402494	AMPA	1.58	Spike	P	0 - 30
2402494	Endothall	1.50	Spike	P	0 - 30
2402494	Glufosinate	22.3	Spike	P	0 - 30
2402494	Glyphosate	13.4	Spike	P	0 - 30
2402494	Sucralose	9.46	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P429013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2402644	2,4-D	7.57	Spike	P	0 - 30
2402644	2,4,5-T	6.62	Spike	P	0 - 30
2402644	Acetaminophen	1.28	Spike	P	0 - 30
2402644	Acetamiprid	2.44	Spike	P	0 - 30
2402644	Afidopyropen	8.18	Spike	P	0 - 30
2402644	Bentazon	3.60	Spike	P	0 - 30
2402644	Benzovindiflupyr	8.67	Spike	P	0 - 30
2402644	Carbamazepine	10.3	Spike	P	0 - 30
2402644	Clothianidin	5.43	Spike	P	0 - 30
2402644	Dinotefuran	3.17	Spike	P	0 - 30
2402644	Diuron	1.70	Spike	P	0 - 30
2402644	Fenuron	0.0412	Spike	P	0 - 30
2402644	Fluridone	4.16	Spike	P	0 - 30
2402644	Hydrocodone	1.33	Spike	P	0 - 30
2402644	Ibuprofen	8.26	Spike	P	0 - 30
2402644	Imazapyr	1.71	Spike	P	0 - 30
2402644	Imidacloprid	5.21	Spike	P	0 - 30
2402644	Linuron	10.0	Spike	P	0 - 30
2402644	Mandestrobin	9.10	Spike	P	0 - 30
2402644	MCPP	0.202	Spike	P	0 - 30
2402644	Naproxen	15.6	Spike	P	0 - 30
2402644	Primidone	2.93	Spike	P	0 - 30
2402644	Pyraclostrobin	10.0	Spike	P	0 - 30
2402644	Silvex	7.26	Spike	P	0 - 30
2402644	Thiamethoxam	6.40	Spike	P	0 - 30
2402644	Tolfenpyrad	3.37	Spike	P	0 - 30
2402644	Triclopyr	2.00	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2403006

Field Sample ID: G4NW0336

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	77.9	P	29 - 130
EPA 8270E	Decachlorobiphenyl	75.9	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	46.0	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	54.9	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	51.5	P	30 - 101
EPA 8276	PCNB	62.0	P	48 - 121

Lab Sample ID: 2403007

Field Sample ID: G4NW0395

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	78.9	P	30 - 160
EPA 8321B	Diuron-d6	81.8	P	30 - 160
EPA 8321B	Endothall-d6	87.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	89.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.4	P	30 - 160
EPA 8321B	Primidone-d5	93.4	P	30 - 160
EPA 8321B	Sucralose-d6	103	P	30 - 160

Lab Sample ID: 2403008

Field Sample ID: G4NW0357

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	133	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.3	P	30 - 160
EPA 8321B	Diuron-d6	93.5	P	30 - 160
EPA 8321B	Endothall-d6	90.8	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.6	P	30 - 160
EPA 8321B	Primidone-d5	97.8	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A118855

Included Lab Sample IDs: 2403007, 2403008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.1	92.8	P/P	50 - 150
2,4,5-T	101	100	P/P	50 - 150
Acetaminophen	103	106	P/P	60 - 160
Acetamiprid	106	103	P/P	50 - 150
Afidopyropen	111	69.1	P/P	50 - 150
Bentazon	128	130	P/P	50 - 160
Benzovindiflupyr	108	105	P/P	50 - 150
Carbamazepine	111	107	P/P	60 - 150
Clothianidin	105	103	P/P	60 - 150
Dinotefuran	112	113	P/P	50 - 150
Diuron	122	106	P/P	60 - 160
Fenuron	106	109	P/P	60 - 150
Fluridone	114	116	P/P	60 - 160
Hydrocodone	107	96.9	P/P	60 - 150
Ibuprofen	130	88.7	P/P	50 - 160
Imazapyr	112	102	P/P	50 - 150
Imidacloprid	99.7	97.0	P/P	60 - 150
Linuron	89.2	84.1	P/P	60 - 150
Mandestrobin	99.2	101	P/P	50 - 150
MCPP	105	98.9	P/P	50 - 150
Naproxen	96.0	139	P/P	50 - 160
Primidone	103	102	P/P	60 - 150
Pyraclostrobin	105	113	P/P	60 - 150
Silvex	81.5	104	P/P	50 - 150
Thiamethoxam	112	112	P/P	50 - 150
Tolfenpyrad	98.7	104	P/P	60 - 150
Triclopyr	90.0	95.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A118862

Included Lab Sample IDs: 2403007, 2403008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	146	153	P/P	60 - 160
Sucralose	130	101	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A118863

Included Lab Sample IDs: 2403007, 2403008

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	87.9	95.5	P/P	60 - 160
Endothall	82.7	84.9	P/P	60 - 160
Glufosinate	78.7	79.0	P/P	60 - 160
Glyphosate	99.1	101	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A118865

Included Lab Sample IDs: 2403009, 2403010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A118865

Included Lab Sample IDs: 2403009, 2403010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	104	103	P/P	90 - 110
Antimony	104	105	P/P	90 - 110
Arsenic	101	99.5	P/P	90 - 110
Arsenic	99.2	98.0	P/P	90 - 110
Barium	101	102	P/P	90 - 110
Barium	99.6	101	P/P	90 - 110
Beryllium	98.8	98.4	P/P	90 - 110
Beryllium	99.9	99.4	P/P	90 - 110
Boron	96.9	98.1	P/P	90 - 110
Boron	98.9	96.5	P/P	90 - 110
Cadmium	99.1	100	P/P	90 - 110
Cadmium	99.7	98.0	P/P	90 - 110
Chromium	100	99.0	P/P	90 - 110
Chromium	99.8	102	P/P	90 - 110
Cobalt	102	103	P/P	90 - 110
Cobalt	103	100	P/P	90 - 110
Copper	96.1	95.5	P/P	90 - 110
Copper	97.8	97.7	P/P	90 - 110
Lead	101	100	P/P	90 - 110
Lead	102	100	P/P	90 - 110
Manganese	101	99.1	P/P	90 - 110
Manganese	98.2	101	P/P	90 - 110
Molybdenum	97.9	96.9	P/P	90 - 110
Molybdenum	98.4	98.0	P/P	90 - 110
Nickel	97.4	97.0	P/P	90 - 110
Nickel	99.8	99.4	P/P	90 - 110
Selenium	101	101	P/P	90 - 110
Selenium	101	99.1	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Silver	104	101	P/P	90 - 110
Thallium	98.9	97.6	P/P	90 - 110
Thallium	99.3	97.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A118874

Included Lab Sample IDs: 2403009, 2403010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	101	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Strontium	99.3	97.9	P/P	90 - 110
Tin	97.4	95.6	P/P	90 - 110
Titanium	98.8	95.7	P/P	90 - 110
Vanadium	97.9	96.5	P/P	90 - 110
Zinc	97.5	93.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A118887
Included Lab Sample IDs: 2403006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	94.9		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	95.1		P	80 - 120
Beta-BHC	92.2		P	80 - 120
Beta-Cyfluthrin	119		P	80 - 120
Bifenthrin	99.4		P	80 - 120
Chlorothalonil	96.8		P	80 - 120
Cis-Nonachlor	102		P	80 - 120
Cypermethrin	109		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	97.3		P	80 - 120
DDE-p,p'	96.9		P	80 - 120
DDT-p,p'	94.0		P	80 - 120
Delta-BHC	94.1		P	80 - 120
Deltamethrin	117		P	80 - 120
Dichlobenil	83.2		P	80 - 120
Dicofol	103		P	80 - 120
Dieldrin	97.9		P	80 - 120
Endosulfan I	95.9		P	80 - 120
Endosulfan II	97.5		P	80 - 120
Endosulfan Sulfate	104		P	80 - 120
Endrin	97.4		P	80 - 120
Endrin Aldehyde	96.9		P	80 - 120
Endrin Ketone	112		P	80 - 120
Esfenvalerate	112		P	80 - 120
Ethalfuralin	98.4		P	80 - 120
Fenpropathrin	103		P	80 - 120
Gamma-BHC	104		P	80 - 120
Gamma-Chlordane	97.0		P	80 - 120
Heptachlor	95.8		P	80 - 120
Heptachlor Epoxide	97.1		P	80 - 120
Hexachlorobenzene	103		P	80 - 120
Kepone	101		P	80 - 120
Lambda-Cyhalothrin	103		P	80 - 120
Methoprene	98.8		P	80 - 120
Methoxychlor	94.8		P	80 - 120
MGK-264	91.9		P	80 - 120
Mirex	93.4		P	80 - 120
Oxychlordane	93.9		P	80 - 120
Permethrin	104		P	80 - 120
Phenothrin	100		P	80 - 120
Piperonyl Butoxide	100		P	80 - 120
Prallethrin	97.1		P	80 - 120
Tau-Fluvalinate	117		P	80 - 120
Tetramethrin	97.8		P	80 - 120
Trans-Nonachlor	101		P	80 - 120
Triclosan Methyl	98.2		P	80 - 120
Trifluralin	101		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A118943

Included Lab Sample IDs: 2403009, 2403010

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	99.1	P/P	90 - 110
Aluminum	99.1	98.4	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A118967

Included Lab Sample IDs: 2403006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	96.1		P	80 - 120
PCB-1260	95.6		P	80 - 120

Reference Method: EPA 8276

Run ID: A119015

Included Lab Sample IDs: 2403006

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.4		P	80 - 120
Toxaphene	96.0		P	80 - 120

* 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	99.5	98.5	100	101			1.12
	Iron	99.3	100	102	101			1.24
	Magnesium	101	100	103	101			1.53
	Potassium	99.4	99.3	99.3	98.8			0.0240
	Sodium	101	100	102	101			1.10
	Strontium	96.9	97.6	97.5	98.3			0.0836
	Tin	95.5	94.3	96.4	96.9			2.24
	Titanium	99.0	97.8	97.9	97.4			0.139
	Vanadium	98.8	97.3	97.1	98.4			0.275
	Zinc	98.4	95.8	96.1	98.6			0.258
EPA 200.8 Rev. 5.4	Aluminum	102	98.9	97.4	97.8			1.35
	Antimony	107	105	103	104			1.43
	Arsenic	100	99.7	99.2	97.9			0.557
	Barium	105	106	103	102			2.36
	Beryllium	94.7	94.9	93.4	89.1			1.56
	Boron	103	105	100	103			4.32
	Cadmium	101	101	99.4	102			1.11
	Chromium	100	102	100	101			2.00
	Cobalt	103	104	102	103			1.98
	Copper	97.7	100	98.0	96.3			2.55
	Lead	101	104	103	104			1.31
	Manganese	98.8	103	98.6	101			3.20
	Molybdenum	99.1	98.4	98.0	98.7			0.468
	Nickel	100	101	99.3	98.2			1.53
	Selenium	101	99.2	98.6	98.8			0.570
	Silver	105	104	103	103			0.735
	Thallium	97.2	103	101	102			2.00
	Aldrin	50.1	51.4	43.2				17.4
	Alpha-BHC	92.8	90.9	82.5				9.60
EPA 8270E	Alpha-Chlordane	70.5	71.2	63.0				12.2
	Beta-BHC	95.2	87.4	91.3				4.36
	Beta-Cyfluthrin	80.3	65.4	72.5				10.3
	Bifenthrin	38.2	36.8	34.0				7.71
	Chlorothalonil	54.8	0.0	0.0				
	Cis-Nonachlor	59.5	58.1	44.7				26.2
	Cypermethrin	74.8	61.5	67.9				9.84
	Dacthal	96.4	87.6	88.9				1.46
	DDD-p,p'	54.8	55.3	40.5				31.0
	DDE-p,p'	57.0	61.0	49.1				21.5
	DDT-p,p'	64.0	59.3	52.3				12.5
	Delta-BHC	102	91.2	98.6				7.77
	Deltamethrin	86.0	70.9	86.8				20.1
	Dichlobenil	70.7	59.4	54.2				9.02
	Dicofol	73.7	67.2	58.7				13.4
	Dieldrin	65.6	68.6	53.1				25.4
	Endosulfan I	67.1	68.0	54.0				22.9
	Endosulfan II	67.9	67.1	55.7				18.6
	Endosulfan Sulfate	102	88.3	75.8				15.2
	Endrin	64.0	68.2	52.5				26.1
	Endrin Aldehyde	80.1	64.9	59.2				9.23
	Endrin Ketone	121	117	115				1.46
	Esfenvalerate	70.2	57.5	69.9				19.5
	Ethalfuralin	71.5	72.6	58.0				22.5
	Fenpropathrin	66.1	61.0	53.2				13.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Gamma-BHC	102	99.9	94.7			5.37
	Gamma-Chlordane	58.9	61.9	50.3			20.6
	Heptachlor	66.8	64.2	56.8			12.2
	Heptachlor Epoxide	87.8	80.1	72.6			9.91
	Hexachlorobenzene	59.6	51.8	41.1			23.2
	Kepone	149	64.8	119			59.2
	Lambda-Cyhalothrin	54.1	48.6	50.0			2.90
	Methoprene	43.0	43.7	36.1			19.0
	Methoxychlor	74.8	65.0	62.0			4.71
	MGK-264	82.6	77.8	76.4			1.78
	Mirex	41.5	43.6	34.7			22.7
	Oxychlordane	62.7	66.2	53.6			20.9
	PCB-1016	75.0	77.2	71.1			8.23
	PCB-1260	67.6	71.0	64.9			8.93
	Permethrin	60.9	52.7	53.0			0.474
	Phenothrin	45.7	44.9	48.6			8.04
	Piperonyl Butoxide	80.9	73.0	60.9			18.0
	Prallethrin	62.5	67.3	52.8			24.2
	Tau-Fluvalinate	60.2	51.1	61.4			18.4
	Tetramethrin	74.0	69.3	68.8			0.727
	Trans-Nonachlor	60.6	60.6	50.2			18.9
	Triclosan Methyl	67.0	71.4	53.0			29.5
	Trifluralin	70.7	69.0	58.3			16.8
EPA 8276	Chlordane	74.5	77.6	77.2			0.611
	Toxaphene	78.5	92.8	95.5			2.82
	2,4-D	106					7.57
EPA 8321B	2,4,5-T	100	115	123			6.62
	Acesulfame K	122	144	144			0.560
	Acetaminophen	94.9	101	102			1.28
	Acetamiprid	81.7	78.3	80.3			2.44
	Afidopyropen	66.2	103	94.8			8.18
	AMPA	96.2	90.5	88.5			1.58
	Bentazon	95.9					3.60
	Benzovindiflupyr	91.6	95.0	87.1			8.67
	Carbamazepine	98.7	91.8	82.8			10.3
	Clothianidin	95.4	107	101			5.43
	Dinotefuran	99.3	69.9	67.7			3.17
	Diuron	88.5	75.7	77.1			1.70
	Endothall	80.7	80.5	81.7			1.50
	Fenuron	93.5	63.6	63.6			0.0412
	Fluridone	89.2					4.16
	Glufosinate	77.6	111	88.7			22.3
	Glyphosate	98.2	121	149			13.4
	Hydrocodone	90.7	61.2	60.3			1.33
	Ibuprofen	93.1	84.7	92.0			8.26
	Imazapyr	99.5	100	98.0			1.71
	Imidacloprid	86.9	132	124			5.21
	Linuron	87.0	81.7	73.9			10.0
	Mandestrobin	88.0	95.7	87.3			9.10
	MCPP	109	131	131			0.202
	Naproxen	82.6	91.2	78.0			15.6
	Primidone	92.2	90.8	93.7			2.93
	Pyraclostrobin	86.0	94.7	85.7			10.0
	Silvex	96.2	110	102			7.26

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
EPA 8321B	Sucralose	102	119	108		9.46
	Thiamethoxam	97.2	89.0	83.4		6.40
	Tolfenpyrad	59.4	60.8	58.8		3.37
	Triclopyr	89.1	127	129		2.00

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	2403009, 2403010
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2403009, 2403010
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2403006
EPA 8270E	PCBs in water matrices by GC/MS/MS	2403006
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2403006
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2403007, 2403008
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2403009, 2403010

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	04/26/2023	04/27/2023 11:30	George D Taylor	04/28/2023 19:39	McKinley C Carter	2403009
	04/26/2023	04/27/2023 11:30	George D Taylor	04/28/2023 19:45	McKinley C Carter	2403010
EPA 200.8 Rev. 5.4	04/26/2023	04/27/2023 11:30	George D Taylor	04/28/2023 16:52	Conrad Hartmann	2403010
	04/26/2023	04/27/2023 11:30	George D Taylor	04/28/2023 19:52	Conrad Hartmann	2403009
	04/26/2023	04/27/2023 11:30	George D Taylor	05/03/2023 14:20	Conrad Hartmann	2403010
	04/26/2023	04/27/2023 11:30	George D Taylor	05/03/2023 16:07	Conrad Hartmann	2403009
	04/26/2023	04/27/2023 11:30	George D Taylor	05/03/2023 16:07	Conrad Hartmann	2403009
EPA 8270E	04/26/2023	04/27/2023 08:00	Fe-Val Siddell	05/02/2023 00:50	Michael Poppell	2403006
	04/26/2023	04/27/2023 08:00	Fe-Val Siddell	05/05/2023 05:54	Michael Poppell	2403006
EPA 8276	04/26/2023	04/27/2023 08:00	Fe-Val Siddell	05/03/2023 09:19	Lipi Saha	2403006
EPA 8321B	04/26/2023	04/27/2023 09:00	Hoor Shaik	04/27/2023 21:59	Juyoung Kim	2403007
	04/26/2023	04/27/2023 09:00	Hoor Shaik	04/27/2023 22:17	Juyoung Kim	2403008
	04/26/2023	04/28/2023 09:00	Manjita Shrestha	04/28/2023 14:20	Manjita Shrestha	2403007
	04/26/2023	04/28/2023 09:00	Manjita Shrestha	04/28/2023 14:34	Manjita Shrestha	2403008
	04/26/2023	04/28/2023 09:00	Manjita Shrestha	04/29/2023 03:12	Manjita Shrestha	2403007
SM 2340 B-2011	04/26/2023	04/28/2023 09:00	Manjita Shrestha	04/29/2023 03:26	Manjita Shrestha	2403008
	04/26/2023			04/28/2023 19:39	McKinley C Carter	2403009
	04/26/2023			04/28/2023 19:45	McKinley C Carter	2403010