

Chemical Analysis Report

SE-DIST-2023-05-04-01

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

Event Description: **SMP - Vero Beach**
Request ID: **RQ-2023-04-24-28**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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2199 South Rock Road
Fort Pierce, FL 34945
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Certified by: Colin Wright, Program Administrator

Date Certified: 23-MAY-2023 11:09



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: SOUTH CANAL AT US 1

Collection Date/Time: 05/03/2023 12:50

Field ID: G5SE0044

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405731	EPA 200.7 Rev. 4.4	Calcium	102		mg/L	P429542	
		Iron	520		ug/L	P429542	
		Magnesium	45.6		mg/L	P429542	
		Potassium	10.7		mg/L	P429542	
		Sodium	218		mg/L	P429542	
		Strontium	7.49E+03		ug/L	P429542	
		Tin	3.0	U	ug/L	P429542	
		Titanium	1.4	I	ug/L	P429542	
		Vanadium	2.0	U	ug/L	P429542	
		Zinc	5.8	I	ug/L	P429542	
	EPA 200.8 Rev. 5.4	Aluminum	233		ug/L	P429542	
		Antimony	0.097	I	ug/L	P429542	
		Arsenic	0.73		ug/L	P429542	
		Barium	49.1		ug/L	P429542	
		Beryllium	0.021	I	ug/L	P429542	
		Boron	118		ug/L	P429542	
		Cadmium	0.020	U	ug/L	P429542	
		Chromium	0.63	I	ug/L	P429542	
		Cobalt	0.108		ug/L	P429542	
		Copper	1.28		ug/L	P429542	
		Lead	0.26	I	ug/L	P429542	
		Manganese	9.48		ug/L	P429542	
		Molybdenum	0.87		ug/L	P429542	
		Nickel	0.50	U	ug/L	P429542	
		Selenium	0.27	I	ug/L	P429542	
		Silver	0.010	U	ug/L	P429542	
		Thallium	0.10	U	ug/L	P429542	
	SM 2340 B-2011	Hardness	443		mg/L	P429542	

Sample Location: FB

Collection Date/Time: 05/03/2023 13:00

Field ID: FB_05032023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405732	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P429542	
		Iron	30	U	ug/L	P429542	
		Magnesium	0.040	U	mg/L	P429542	
		Potassium	0.30	U	mg/L	P429542	
		Sodium	0.50	U	mg/L	P429542	
		Strontium	2.0	U	ug/L	P429542	
		Tin	3.0	U	ug/L	P429542	
		Titanium	0.75	U	ug/L	P429542	
		Vanadium	2.0	U	ug/L	P429542	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P429542	
		Aluminum	5.0	U	ug/L	P429542	
		Antimony	0.050	U	ug/L	P429542	
		Arsenic	0.050	U	ug/L	P429542	
		Barium	0.20	U	ug/L	P429542	
		Beryllium	0.010	U	ug/L	P429542	
		Boron	2.0	U	ug/L	P429542	
		Cadmium	0.020	U	ug/L	P429542	
		Chromium	0.40	U	ug/L	P429542	
		Cobalt	0.020	U	ug/L	P429542	
		Copper	0.40	U	ug/L	P429542	
		Lead	0.20	U	ug/L	P429542	
		Manganese	0.10	U	ug/L	P429542	
		Molybdenum	0.15	U	ug/L	P429542	
		Nickel	0.50	U	ug/L	P429542	
		Selenium	0.20	U	ug/L	P429542	
		Silver	0.010	U	ug/L	P429542	
		Thallium	0.10	U	ug/L	P429542	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P429542	

Sample Location: NORTH CANAL ATUS1

Collection Date/Time: 05/03/2023 10:30

Field ID: G5SE0043

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405730	EPA 8321B	2,4-D	0.047		ug/L	P429412	
		Acesulfame K	0.18	I	ug/L	P429323	
		2,4,5-T	0.0040	U	ug/L	P429412	
		AMPA	0.88		ug/L	P429323	
		Acetaminophen	0.0080	U	ug/L	P429412	
		Acetamiprid	0.0020	U	ug/L	P429412	
		Endothall	0.25	U	ug/L	P429323	
		Glufosinate	0.10	U	ug/L	P429323	
		Glyphosate	0.99		ug/L	P429323	
		Afidopyropen	0.0020	U	ug/L	P429412	
		Sucralose	3.1		ug/L	P429323	
		Bentazon	0.23		ug/L	P429412	MS
		Benzovindiflupyr	0.0020	U	ug/L	P429412	
		Carbamazepine	0.0029	I	ug/L	P429412	
		Clothianidin	0.0057	I	ug/L	P429412	
		Dinotefuran	0.011		ug/L	P429412	
		Diuron	0.0045	I	ug/L	P429412	
		Fenuron	0.032	U	ug/L	P429412	
		Fluridone	0.0055		ug/L	P429412	
		Imazapyr	0.19		ug/L	P429412	
		Hydrocodone	0.0020	U	ug/L	P429412	
		Ibuprofen	0.080	U	ug/L	P429412	
		Imidacloprid	0.011		ug/L	P429412	
		Linuron	0.0040	U	ug/L	P429412	
		Mandestrobin	0.0020	U	ug/L	P429412	
		MCPP	0.020		ug/L	P429412	
		Naproxen	0.0080	U	ug/L	P429412	
		Primidone	0.018		ug/L	P429412	
		Pyraclostrobin	0.0020	U	ug/L	P429412	
		Silvex	0.0040	U	ug/L	P429412	
		Thiamethoxam	0.026		ug/L	P429412	
		Tolfenpyrad	0.0020	U	ug/L	P429412	
		Triclopyr	0.0040	U	ug/L	P429412	

Sample Location: VERO NORTH CANAL AT 66TH AVE

Collection Date/Time: 05/03/2023 10:00

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405727	EPA 8270E	Aldrin	0.66	U	ng/L	P429278	
		Alpha-BHC	0.10	U	ng/L	P429278	
		Alpha-Chlordane	0.20	U	ng/L	P429278	
		PCB-1016	2.0	U	ng/L	P429278	
		Beta-BHC	0.10	U	ng/L	P429278	
		PCB-1221	2.0	U	ng/L	P429278	
		Beta-Cyfluthrin	1.3	U	ng/L	P429278	
		PCB-1232	2.0	U	ng/L	P429278	
		Bifenthrin	0.51	U	ng/L	P429278	
		PCB-1242	2.0	U	ng/L	P429278	
		PCB-1248	2.0	U	ng/L	P429278	
		Chlorothalonil	3.6	U	ng/L	P429278	
		PCB-1254	2.0	U	ng/L	P429278	
		Cis-Nonachlor	0.20	UJ	ng/L	P429278	CCV
		PCB-1260	2.0	U	ng/L	P429278	
		Cypermethrin	1.5	U	ng/L	P429278	
		Dacthal	0.15	UJ	ng/L	P429278	LCS, MS, RPD
		DDD-p,p'	0.47	I	ng/L	P429278	
		DDE-p,p'	0.20	U	ng/L	P429278	
		DDT-p,p'	0.47	I	ng/L	P429278	
		Delta-BHC	0.40	U	ng/L	P429278	
		Deltamethrin	1.3	U	ng/L	P429278	
		Dichlobenil	0.25	U	ng/L	P429278	
		Dicofol	1.3	U	ng/L	P429278	
		Dieldrin	0.42	I	ng/L	P429278	
		Endosulfan I	0.40	U	ng/L	P429278	
		Endosulfan II	0.40	U	ng/L	P429278	
		Endosulfan Sulfate	0.30	U	ng/L	P429278	
		Endrin	0.40	U	ng/L	P429278	
		Endrin Aldehyde	0.76	U	ng/L	P429278	
		Endrin Ketone	0.40	U	ng/L	P429278	
		Esfenvalerate	0.76	U	ng/L	P429278	
		Ethalfuralin	0.15	U	ng/L	P429278	
		Fenpropathrin	0.25	U	ng/L	P429278	RPD
		Gamma-BHC	0.13	U	ng/L	P429278	
		Gamma-Chlordane	0.21	I	ng/L	P429278	
		Heptachlor	0.20	U	ng/L	P429278	
		Heptachlor Epoxide	0.25	U	ng/L	P429278	RPD
		Hexachlorobenzene**	1.0	U	ng/L	P429278	
		Kepone	5.1	UJ	ng/L	P429278	CCV
		Lambda-Cyhalothrin	0.76	U	ng/L	P429278	
		Methoprene	0.76	U	ng/L	P429278	
		Methoxychlor	0.30	U	ng/L	P429278	

Field ID: G5SE0069

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2405729	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P429412	
		Triclopyr	0.0040	U	ug/L	P429412	

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429542

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: P429542

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: P429278

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: P429278

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: P429278

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: P429278

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: P429323

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: P429412

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: P429542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	100		P	80 - 120
Iron	100		P	80 - 120
Magnesium	101		P	80 - 120
Potassium	100		P	80 - 120
Sodium	99.5		P	80 - 120
Strontium	102		P	80 - 120
Tin	102		P	80 - 120
Titanium	100		P	80 - 120
Vanadium	99.7		P	80 - 120
Zinc	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429542

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	98.9		P	85 - 115
Boron	103		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.6		P	85 - 115
Cobalt	103		P	85 - 115
Copper	98.5		P	85 - 115
Lead	105		P	85 - 115
Manganese	99.7		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	102		P	85 - 115
Silver	106		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 8270E

Batch ID: P429278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	37.1		P	10 - 92.0
Alpha-BHC	98.5		P	75 - 107
Alpha-Chlordane	59.6		P	50 - 108
Beta-BHC	83.5		P	36 - 138
Beta-Cyfluthrin	55.6		P	20 - 161
Bifenthrin	48.6		P	10 - 119
Chlorothalonil	61.5		P	26 - 186
Cis-Nonachlor	69.3		P	42 - 119
Cypermethrin	129		P	22 - 150
Dacthal	66.8		F	72 - 119
DDD-p,p'	78.9		P	45 - 107
DDE-p,p'	68.2		P	48 - 106
DDT-p,p'	68.2		P	48 - 110
Delta-BHC	100		P	54 - 140
Deltamethrin	64.1		P	22 - 189

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P429278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dichlobenil	116		P	36 - 117
Dicofol	56.1		P	46 - 155
Dieldrin	84.9		P	54 - 110
Endosulfan I	80.4		P	59 - 105
Endosulfan II	75.0		P	51 - 118
Endosulfan Sulfate	61.5		P	57 - 121
Endrin	82.5		P	10 - 120
Endrin Aldehyde	48.2		P	34 - 118
Endrin Ketone	87.8		P	69 - 177
Esfenvalerate	61.6		P	23 - 168
Ethalfuralin	70.0		P	49 - 99.0
Fenpropathrin	48.8		P	34 - 117
Gamma-BHC	114		P	72 - 117
Gamma-Chlordane	52.0		P	43 - 106
Heptachlor	78.8		P	41 - 98.0
Heptachlor Epoxide	69.4		P	57 - 106
Hexachlorobenzene	77.1		P	36 - 99.0
Kepone	126		P	16 - 215
Lambda-Cyhalothrin	65.1		P	21 - 177
Methoprene	45.3		P	10 - 119
Methoxychlor	79.5		P	60 - 112
MGK-264	92.2		P	26 - 122
Mirex	60.6		P	10 - 169
Oxychlordane	71.2		P	43 - 105
PCB-1016	79.5		P	48 - 112
PCB-1260	114		P	44 - 118
Permethrin	67.9		P	24 - 148
Phenothrin	50.3		P	10 - 106
Piperonyl Butoxide	87.3		P	10 - 139
Prallethrin	57.1		P	17 - 109
Tau-Fluvalinate	53.8		P	13 - 131
Tetramethrin	74.2		P	10 - 132
Trans-Nonachlor	46.1		P	44 - 106
Triclosan Methyl	73.5		P	59 - 109
Trifluralin	69.4		P	44 - 101

Reference Method: EPA 8276

Batch ID: P429278

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	78.7		P	61 - 116
Toxaphene	90.8		P	48 - 124

Reference Method: EPA 8321B

Batch ID: P429323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	144		P	40 - 150
AMPA	97.2		P	40 - 150
Endothall	77.8		P	40 - 150
Glufosinate	79.1		P	40 - 150
Glyphosate	96.7		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P429323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	118		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	94.0		P	40 - 150
2,4,5-T	91.9		P	40 - 150
Acetaminophen	74.1		P	30 - 150
Acetamiprid	82.4		P	40 - 150
Afidopyropen	68.1		P	30 - 150
Bentazon	139		P	30 - 150
Benzovindiflupyr	79.3		P	40 - 150
Carbamazepine	72.2		P	40 - 150
Clothianidin	84.7		P	40 - 150
Dinotefuran	94.6		P	40 - 150
Diuron	70.0		P	40 - 150
Fenuron	81.9		P	40 - 150
Fluridone	73.3		P	40 - 150
Hydrocodone	78.2		P	40 - 150
Ibuprofen	73.6		P	40 - 150
Imazapyr	88.6		P	40 - 150
Imidacloprid	83.3		P	40 - 150
Linuron	68.3		P	40 - 150
Mandestrobin	82.6		P	40 - 150
MCPP	98.2		P	40 - 150
Naproxen	75.7		P	40 - 150
Primidone	84.1		P	40 - 150
Pyraclostrobin	77.6		P	40 - 150
Silvex	87.8		P	40 - 150
Thiamethoxam	79.7		P	40 - 150
Tolfenpyrad	51.9		P	30 - 150
Triclopyr	91.7		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405704	Calcium	99.2		P	80 - 120
2405704	Iron	105	103	P/P	80 - 120
2405704	Magnesium	104	102	P/P	80 - 120
2405704	Potassium	104	103	P/P	80 - 120
2405704	Sodium	98.9		P	80 - 120
2405704	Strontium	104	103	P/P	80 - 120
2405704	Tin	101	99.4	P/P	80 - 120
2405704	Titanium	101	102	P/P	80 - 120
2405704	Vanadium	101	102	P/P	80 - 120
2405704	Zinc	104	103	P/P	80 - 120
2406025	Calcium	99.2		P	80 - 120
2406025	Iron	102		P	80 - 120
2406025	Magnesium	100		P	80 - 120
2406025	Potassium	100		P	80 - 120
2406025	Sodium	98.9		P	80 - 120
2406025	Strontium	101		P	80 - 120
2406025	Tin	97.8		P	80 - 120
2406025	Titanium	101		P	80 - 120
2406025	Vanadium	100		P	80 - 120
2406025	Zinc	98.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405704	Aluminum	98.9	100	P/P	80 - 120
2405704	Antimony	107	107	P/P	80 - 120
2405704	Arsenic	102	101	P/P	80 - 120
2405704	Barium	103	104	P/P	80 - 120
2405704	Beryllium	99.1	98.6	P/P	80 - 120
2405704	Boron	100	102	P/P	80 - 120
2405704	Cadmium	103	103	P/P	80 - 120
2405704	Chromium	97.5	97.4	P/P	80 - 120
2405704	Cobalt	101	101	P/P	80 - 120
2405704	Copper	96.8	96.6	P/P	80 - 120
2405704	Lead	104	104	P/P	80 - 120
2405704	Manganese	97.9	97.1	P/P	80 - 120
2405704	Molybdenum	103	101	P/P	80 - 120
2405704	Nickel	97.5	96.8	P/P	80 - 120
2405704	Selenium	102	101	P/P	80 - 120
2405704	Silver	103	102	P/P	80 - 120
2405704	Thallium	103	103	P/P	80 - 120
2406025	Aluminum	98.8		P	80 - 120
2406025	Antimony	107		P	80 - 120
2406025	Arsenic	100		P	80 - 120
2406025	Barium	103		P	80 - 120
2406025	Beryllium	96.8		P	80 - 120
2406025	Boron	103		P	80 - 120
2406025	Cadmium	101		P	80 - 120
2406025	Chromium	96.8		P	80 - 120
2406025	Cobalt	101		P	80 - 120
2406025	Copper	96.2		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2406025	Lead	105		P	80 - 120
2406025	Manganese	98.0		P	80 - 120
2406025	Molybdenum	100		P	80 - 120
2406025	Nickel	96.5		P	80 - 120
2406025	Selenium	101		P	80 - 120
2406025	Silver	104		P	80 - 120
2406025	Thallium	104		P	80 - 120

Reference Method: EPA 8270E

Batch ID: P429278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2404645	Aldrin	47.8	50.2	P/P	20 - 82.0
2404645	Alpha-BHC	94.3	95.7	P/P	71 - 109
2404645	Alpha-Chlordane	73.2	71.5	P/P	42 - 106
2404645	Beta-BHC	141	102	P/P	69 - 180
2404645	Beta-Cyfluthrin	113	85.6	P/P	18 - 175
2404645	Bifenthrin	72.8	53.5	P/P	21 - 128
2404645	Chlorothalonil	32.6	65.1	P/P	10 - 300
2404645	Cis-Nonachlor	51.3	52.7	P/P	34 - 106
2404645	Cypermethrin	93.4	120	P/P	22 - 158
2404645	Dacthal	146	107	F/P	54 - 116
2404645	DDD-p,p'	79.0	75.3	P/P	34 - 107
2404645	DDE-p,p'	53.8	39.6	P/P	33 - 110
2404645	DDT-p,p'	68.5	60.2	P/P	50 - 122
2404645	Delta-BHC	95.1	106	P/P	77 - 193
2404645	Deltamethrin	58.7	43.7	P/P	10 - 195
2404645	Dichlobenil	96.7	80.3	P/P	25 - 113
2404645	Dicofol	71.8	67.3	P/P	38 - 247
2404645	Dieldrin	65.5	62.9	P/P	45 - 118
2404645	Endosulfan I	66.9	65.2	P/P	51 - 106
2404645	Endosulfan II	69.1	69.5	P/P	37 - 122
2404645	Endosulfan Sulfate	125	87.8	P/P	43 - 132
2404645	Endrin	93.1	71.3	P/P	29 - 101
2404645	Endrin Aldehyde	68.9	78.2	P/P	19 - 110
2404645	Endrin Ketone	80.1	70.5	P/P	60 - 140
2404645	Esfenvalerate	50.8	49.1	P/P	26 - 199
2404645	Ethalfuralin	66.9	71.9	P/P	45 - 99.0
2404645	Fenpropathrin	95.4	66.5	P/P	35 - 120
2404645	Gamma-BHC	111	95.7	P/P	63 - 128
2404645	Gamma-Chlordane	69.8	70.8	P/P	40 - 104
2404645	Heptachlor	69.6	61.1	P/P	36 - 97.0
2404645	Heptachlor Epoxide	108	74.2	P/P	49 - 184
2404645	Hexachlorobenzene	85.6	70.6	P/P	39 - 96.0
2404645	Kepone	111	54.4	P/P	10 - 217
2404645	Lambda-Cyhalothrin	94.3	75.8	P/P	21 - 193
2404645	Methoprene	62.0	56.4	P/P	20 - 106
2404645	Methoxychlor	53.7	60.8	P/P	53 - 118
2404645	MGK-264	53.3	49.7	P/P	40 - 118
2404645	Mirex	48.4	39.2	P/P	26 - 92.0
2404645	Oxychlordane	61.7	75.4	P/P	44 - 99.0
2404645	Permethrin	53.1	75.4	P/P	33 - 182

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P429278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2404645	Phenothrin	74.8	77.7	P/P	10 - 129
2404645	Piperonyl Butoxide	61.6	86.1	P/P	10 - 211
2404645	Prallethrin	73.3	73.2	P/P	24 - 113
2404645	Tau-Fluvalinate	50.0	39.3	P/P	14 - 149
2404645	Tetramethrin	117	87.8	P/P	17 - 151
2404645	Trans-Nonachlor	72.4	64.7	P/P	42 - 102
2404645	Triclosan Methyl	65.4	84.4	P/P	48 - 108
2404645	Trifluralin	61.5	66.2	P/P	47 - 96.0
2405764	PCB-1016	64.4	79.8	P/P	46 - 111
2405764	PCB-1260	73.4	87.4	P/P	45 - 114

Reference Method: EPA 8276

Batch ID: P429278

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405764	Chlordane	76.6	83.0	P/P	53 - 126
2405764	Toxaphene	93.8	96.0	P/P	56 - 211

Reference Method: EPA 8321B

Batch ID: P429323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405697	Acesulfame K	133	135	P/P	40 - 150
2405697	AMPA	91.2	90.8	P/P	40 - 150
2405697	Endothall	77.2	76.0	P/P	40 - 150
2405697	Glufosinate	67.6	69.6	P/P	40 - 150
2405697	Glyphosate	82.8	91.7	P/P	40 - 150
2405697	Sucralose	109	136	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P429412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405330	2,4-D	113	110	P/P	40 - 150
2405330	2,4,5-T	115	109	P/P	40 - 150
2405330	Acetaminophen	85.7	84.1	P/P	30 - 150
2405330	Acetamiprid	98.6	96.6	P/P	40 - 150
2405330	Afidopyropen	99.1	95.3	P/P	30 - 150
2405330	Bentazon	164	174	F/F	30 - 150
2405330	Benzovindiflupyr	81.9	87.3	P/P	40 - 150
2405330	Carbamazepine	82.6	84.1	P/P	40 - 150
2405330	Clothianidin	99.7	99.2	P/P	40 - 150
2405330	Dinotefuran	112	116	P/P	40 - 150
2405330	Diuron	72.5	73.5	P/P	40 - 150
2405330	Fenuron	77.3	84.5	P/P	40 - 150
2405330	Fluridone	81.8	96.1	P/P	40 - 150
2405330	Hydrocodone	80.7	85.4	P/P	40 - 150
2405330	Ibuprofen	86.5	78.2	P/P	40 - 150
2405330	Imazapyr	143	114	P/P	40 - 150
2405330	Imidacloprid	104	102	P/P	40 - 150
2405330	Linuron	74.5	74.5	P/P	40 - 150
2405330	Mandestrobin	94.1	90.4	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P429412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2405330	MCP	126	110	P/P	40 - 150
2405330	Naproxen	93.3	73.3	P/P	40 - 150
2405330	Primidone	98.8	95.8	P/P	40 - 150
2405330	Pyraclostrobin	85.1	85.7	P/P	40 - 150
2405330	Silvex	112	117	P/P	40 - 150
2405330	Thiamethoxam	98.5	95.4	P/P	40 - 150
2405330	Tolfenpyrad	51.2	49.7	P/P	30 - 150
2405330	Triclopyr	105	103	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405704	Calcium	1.17	Spike	P	0 - 20
2405704	Iron	1.58	Spike	P	0 - 20
2405704	Magnesium	1.48	Spike	P	0 - 20
2405704	Potassium	0.505	Spike	P	0 - 20
2405704	Sodium	0.341	Spike	P	0 - 20
2405704	Strontium	1.30	Spike	P	0 - 20
2405704	Tin	1.73	Spike	P	0 - 20
2405704	Titanium	0.741	Spike	P	0 - 20
2405704	Vanadium	0.432	Spike	P	0 - 20
2405704	Zinc	0.175	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405704	Aluminum	1.15	Spike	P	0 - 20
2405704	Antimony	0.0221	Spike	P	0 - 20
2405704	Arsenic	0.678	Spike	P	0 - 20
2405704	Barium	0.369	Spike	P	0 - 20
2405704	Beryllium	0.549	Spike	P	0 - 20
2405704	Boron	0.948	Spike	P	0 - 20
2405704	Cadmium	0.285	Spike	P	0 - 20
2405704	Chromium	0.202	Spike	P	0 - 20
2405704	Cobalt	0.0975	Spike	P	0 - 20
2405704	Copper	0.165	Spike	P	0 - 20
2405704	Lead	0.260	Spike	P	0 - 20
2405704	Manganese	0.716	Spike	P	0 - 20
2405704	Molybdenum	1.46	Spike	P	0 - 20
2405704	Nickel	0.800	Spike	P	0 - 20
2405704	Selenium	1.12	Spike	P	0 - 20
2405704	Silver	0.598	Spike	P	0 - 20
2405704	Thallium	0.226	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P429278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2404645	Aldrin	4.87	Spike	P	0 - 41
2404645	Alpha-BHC	1.51	Spike	P	0 - 25
2404645	Alpha-Chlordane	2.34	Spike	P	0 - 33
2404645	Beta-BHC	32.1	Spike	P	0 - 36
2404645	Beta-Cyfluthrin	27.3	Spike	P	0 - 42
2404645	Bifenthrin	30.7	Spike	P	0 - 53
2404645	Chlorothalonil	66.5	Spike	P	0 - 71
2404645	Cis-Nonachlor	2.74	Spike	P	0 - 29
2404645	Cypermethrin	25.2	Spike	P	0 - 40
2404645	Dacthal	30.6	Spike	F	0 - 26
2404645	DDD-p,p'	4.80	Spike	P	0 - 39
2404645	DDE-p,p'	30.5	Spike	P	0 - 33

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P429278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2404645	DDT-p,p'	12.9	Spike	P	0 - 40
2404645	Delta-BHC	10.8	Spike	P	0 - 37
2404645	Deltamethrin	29.4	Spike	P	0 - 100
2404645	Dichlobenil	18.5	Spike	P	0 - 40
2404645	Dicofol	6.41	Spike	P	0 - 31
2404645	Dieldrin	3.62	Spike	P	0 - 27
2404645	Endosulfan I	2.64	Spike	P	0 - 23
2404645	Endosulfan II	0.599	Spike	P	0 - 28
2404645	Endosulfan Sulfate	34.9	Spike	P	0 - 38
2404645	Endrin	26.6	Spike	P	0 - 63
2404645	Endrin Aldehyde	12.6	Spike	P	0 - 60
2404645	Endrin Ketone	12.8	Spike	P	0 - 37
2404645	Esfenvalerate	3.41	Spike	P	0 - 52
2404645	Ethalfuralin	7.17	Spike	P	0 - 23
2404645	Fenpropathrin	35.7	Spike	F	0 - 32
2404645	Gamma-BHC	14.4	Spike	P	0 - 17
2404645	Gamma-Chlordane	1.51	Spike	P	0 - 40
2404645	Heptachlor	12.9	Spike	P	0 - 29
2404645	Heptachlor Epoxide	32.8	Spike	F	0 - 25
2404645	Hexachlorobenzene	19.2	Spike	P	0 - 36
2404645	Kepone	68.4	Spike	P	0 - 93
2404645	Lambda-Cyhalothrin	21.7	Spike	P	0 - 55
2404645	Methoprene	9.48	Spike	P	0 - 53
2404645	Methoxychlor	12.4	Spike	P	0 - 29
2404645	MGK-264	6.94	Spike	P	0 - 35
2404645	Mirex	21.0	Spike	P	0 - 46
2404645	Oxychlordane	20.0	Spike	P	0 - 29
2404645	Permethrin	34.6	Spike	P	0 - 44
2404645	Phenothrin	3.80	Spike	P	0 - 56
2404645	Piperonyl Butoxide	33.1	Spike	P	0 - 100
2404645	Prallethrin	0.176	Spike	P	0 - 42
2404645	Tau-Fluvalinate	23.8	Spike	P	0 - 54
2404645	Tetramethrin	28.8	Spike	P	0 - 51
2404645	Trans-Nonachlor	11.3	Spike	P	0 - 37
2404645	Triclosan Methyl	25.3	Spike	P	0 - 31
2404645	Trifluralin	7.37	Spike	P	0 - 30
2405764	PCB-1016	21.4	Spike	P	0 - 32
2405764	PCB-1260	17.4	Spike	P	0 - 31

Reference Method: EPA 8276
Batch ID: P429278

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405764	Chlordane	7.50	Spike	P	0 - 25
2405764	Toxaphene	2.38	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P429323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405697	Acesulfame K	1.22	Spike	P	0 - 30
2405697	AMPA	0.419	Spike	P	0 - 30
2405697	Endothall	1.55	Spike	P	0 - 30
2405697	Glufosinate	3.03	Spike	P	0 - 30
2405697	Glyphosate	10.1	Spike	P	0 - 30
2405697	Sucralose	19.1	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P429412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2405330	2,4-D	2.74	Spike	P	0 - 30
2405330	2,4,5-T	5.85	Spike	P	0 - 30
2405330	Acetaminophen	1.85	Spike	P	0 - 30
2405330	Acetamiprid	2.02	Spike	P	0 - 30
2405330	Afidopyropen	3.85	Spike	P	0 - 30
2405330	Bentazon	5.03	Spike	P	0 - 30
2405330	Benzovindiflupyr	6.39	Spike	P	0 - 30
2405330	Carbamazepine	1.79	Spike	P	0 - 30
2405330	Clothianidin	0.475	Spike	P	0 - 30
2405330	Dinotefuran	3.54	Spike	P	0 - 30
2405330	Diuron	1.32	Spike	P	0 - 30
2405330	Fenuron	8.83	Spike	P	0 - 30
2405330	Fluridone	16.1	Spike	P	0 - 30
2405330	Hydrocodone	5.60	Spike	P	0 - 30
2405330	Ibuprofen	9.98	Spike	P	0 - 30
2405330	Imazapyr	20.0	Spike	P	0 - 30
2405330	Imidacloprid	2.17	Spike	P	0 - 30
2405330	Linuron	0.0137	Spike	P	0 - 30
2405330	Mandestrobin	3.98	Spike	P	0 - 30
2405330	MCPP	13.5	Spike	P	0 - 30
2405330	Naproxen	23.9	Spike	P	0 - 30
2405330	Primidone	3.10	Spike	P	0 - 30
2405330	Pyraclostrobin	0.684	Spike	P	0 - 30
2405330	Silvex	3.93	Spike	P	0 - 30
2405330	Thiamethoxam	3.27	Spike	P	0 - 30
2405330	Tolfenpyrad	2.86	Spike	P	0 - 30
2405330	Triclopyr	2.18	Spike	P	0 - 30

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

Quality Assurance Report Surrogates

Lab Sample ID: 2405727
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	90.5	P	29 - 130
EPA 8270E	Decachlorobiphenyl	60.5	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	65.0	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	78.5	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	59.8	P	30 - 101
EPA 8276	PCNB	112	P	48 - 121

Lab Sample ID: 2405729
Field Sample ID: G5SE0069

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	80.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	63.8	P	30 - 160
EPA 8321B	Diuron-d6	57.3	P	30 - 160
EPA 8321B	Endothall-d6	90.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	93.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	61.4	P	30 - 160
EPA 8321B	Primidone-d5	79.7	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Lab Sample ID: 2405730
Field Sample ID: G5SE0043

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	114	P	30 - 160
EPA 8321B	Acetaminophen-d4	91.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.1	P	30 - 160
EPA 8321B	Diuron-d6	56.8	P	30 - 160
EPA 8321B	Endothall-d6	87.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	51.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	70.1	P	30 - 160
EPA 8321B	Primidone-d5	81.5	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A118997

Included Lab Sample IDs: 2405729, 2405730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	155	151	P/P	60 - 160
Sucralose	103	109	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A118999

Included Lab Sample IDs: 2405729, 2405730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	84.6	99.8	P/P	50 - 150
2,4-D	92.2	84.6	P/P	50 - 150
2,4,5-T	85.6	94.0	P/P	50 - 150
2,4,5-T	94.0	84.3	P/P	50 - 150
Acetaminophen	86.4	86.6	P/P	60 - 160
Acetaminophen	86.6	88.8	P/P	60 - 160
Acetamiprid	105	109	P/P	50 - 150
Acetamiprid	106	105	P/P	50 - 150
Afidopyropen	108	96.4	P/P	50 - 150
Afidopyropen	96.4	108	P/P	50 - 150
Bentazon	127	139	P/P	50 - 160
Bentazon	141	118	P/P	50 - 160
Benzovindiflupyr	106	95.9	P/P	50 - 150
Benzovindiflupyr	95.9	102	P/P	50 - 150
Carbamazepine	108	107	P/P	60 - 150
Carbamazepine	97.7	108	P/P	60 - 150
Clothianidin	106	99.3	P/P	60 - 150
Clothianidin	99.3	100	P/P	60 - 150
Dinotefuran	113	113	P/P	50 - 150
Dinotefuran	113	112	P/P	50 - 150
Diuron	102	107	P/P	60 - 160
Diuron	107	101	P/P	60 - 160
Fenuron	101	99.0	P/P	60 - 150
Fenuron	99.0	98.8	P/P	60 - 150
Fluridone	106	119	P/P	60 - 160
Fluridone	118	106	P/P	60 - 160
Hydrocodone	104	109	P/P	60 - 150
Hydrocodone	109	104	P/P	60 - 150
Ibuprofen	72.3	72.6	P/P	50 - 160
Ibuprofen	86.9	72.3	P/P	50 - 160
Imazapyr	102	90.5	P/P	50 - 150
Imazapyr	91.0	102	P/P	50 - 150
Imidacloprid	95.2	97.3	P/P	60 - 150
Imidacloprid	96.9	95.2	P/P	60 - 150
Linuron	110	89.1	P/P	60 - 150
Linuron	89.1	99.7	P/P	60 - 150
Mandestrobin	101	101	P/P	50 - 150
Mandestrobin	111	101	P/P	50 - 150
MCPP	89.1	91.9	P/P	50 - 150
MCPP	91.4	89.1	P/P	50 - 150
Naproxen	120	98.8	P/P	50 - 160
Naproxen	98.8	64.0	P/P	50 - 160
Primidone	101	102	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A118999

Included Lab Sample IDs: 2405729, 2405730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	102	96.1	P/P	60 - 150
Pyraclostrobin	101	103	P/P	60 - 150
Pyraclostrobin	103	102	P/P	60 - 150
Silvex	101	87.6	P/P	50 - 150
Silvex	87.6	82.3	P/P	50 - 150
Thiamethoxam	92.3	93.5	P/P	50 - 150
Thiamethoxam	93.5	93.9	P/P	50 - 150
Tolfenpyrad	93.6	94.5	P/P	60 - 150
Tolfenpyrad	95.3	93.6	P/P	60 - 150
Triclopyr	85.2	84.8	P/P	50 - 150
Triclopyr	87.5	85.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A119009

Included Lab Sample IDs: 2405729, 2405730

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.1	90.2	P/P	60 - 160
Endothall	79.9	82.0	P/P	60 - 160
Glufosinate	79.4	79.5	P/P	60 - 160
Glyphosate	97.4	98.9	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119053

Included Lab Sample IDs: 2405731, 2405732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	100	P/P	90 - 110
Aluminum	101	101	P/P	90 - 110
Antimony	105	106	P/P	90 - 110
Antimony	106	105	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Barium	100	102	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Beryllium	97.1	98.3	P/P	90 - 110
Beryllium	98.3	97.1	P/P	90 - 110
Boron	97.2	98.3	P/P	90 - 110
Boron	98.3	98.9	P/P	90 - 110
Cadmium	101	102	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	97.9	99.6	P/P	90 - 110
Chromium	99.6	97.3	P/P	90 - 110
Cobalt	102	103	P/P	90 - 110
Cobalt	103	102	P/P	90 - 110
Copper	96.1	96.8	P/P	90 - 110
Copper	96.9	96.1	P/P	90 - 110
Lead	103	103	P/P	90 - 110
Lead	103	103	P/P	90 - 110
Manganese	101	99.0	P/P	90 - 110
Manganese	97.7	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119053

Included Lab Sample IDs: 2405731, 2405732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Molybdenum	100	101	P/P	90 - 110
Molybdenum	99.9	100	P/P	90 - 110
Nickel	98.0	97.1	P/P	90 - 110
Nickel	98.3	98.0	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Selenium	103	103	P/P	90 - 110
Silver	103	104	P/P	90 - 110
Silver	104	105	P/P	90 - 110
Thallium	101	102	P/P	90 - 110
Thallium	102	101	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A119089

Included Lab Sample IDs: 2405727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	97.5		P	80 - 120
PCB-1260	108		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A119091

Included Lab Sample IDs: 2405731, 2405732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.2	98.9	P/P	90 - 110
Calcium	99.2	97.9	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Iron	102	101	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Magnesium	102	99.5	P/P	90 - 110
Potassium	102	101	P/P	90 - 110
Potassium	99.9	99.9	P/P	90 - 110
Sodium	98.3	99.1	P/P	90 - 110
Sodium	99.5	99.2	P/P	90 - 110
Strontium	101	101	P/P	90 - 110
Strontium	102	103	P/P	90 - 110
Tin	98.1	97.6	P/P	90 - 110
Tin	98.5	98.8	P/P	90 - 110
Titanium	98.7	99.2	P/P	90 - 110
Titanium	99.5	99.6	P/P	90 - 110
Vanadium	98.5	98.9	P/P	90 - 110
Vanadium	98.7	98.3	P/P	90 - 110
Zinc	96.2	95.6	P/P	90 - 110
Zinc	97.8	99.3	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A119118

Included Lab Sample IDs: 2405727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.4		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A119118
Included Lab Sample IDs: 2405727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Toxaphene	91.1		P	80 - 120

Reference Method: EPA 8270E
Run ID: A119165
Included Lab Sample IDs: 2405727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	108		P	80 - 120
Alpha-BHC	99.1		P	80 - 120
Alpha-Chlordane	94.5		P	80 - 120
Beta-BHC	95.0		P	80 - 120
Beta-Cyfluthrin	97.0		P	80 - 120
Bifenthrin	104		P	80 - 120
Chlorothalonil	94.1		P	80 - 120
Cis-Nonachlor	74.1*		F	80 - 120
Cypermethrin	103		P	80 - 120
Dacthal	81.4		P	80 - 120
DDD-p,p'	80.6		P	80 - 120
DDE-p,p'	103		P	80 - 120
DDT-p,p'	99.9		P	80 - 120
Delta-BHC	83.7		P	80 - 120
Deltamethrin	93.8		P	80 - 120
Dichlobenil	81.6		P	80 - 120
Dicofol	94.9		P	80 - 120
Dieldrin	114		P	80 - 120
Endosulfan I	96.8		P	80 - 120
Endosulfan II	103		P	80 - 120
Endosulfan Sulfate	89.7		P	80 - 120
Endrin	82.1		P	80 - 120
Endrin Aldehyde	110		P	80 - 120
Endrin Ketone	109		P	80 - 120
Esfenvalerate	97.7		P	80 - 120
Ethalfuralin	83.5		P	80 - 120
Fenpropathrin	86.9		P	80 - 120
Gamma-BHC	92.7		P	80 - 120
Gamma-Chlordane	97.2		P	80 - 120
Heptachlor	81.9		P	80 - 120
Heptachlor Epoxide	109		P	80 - 120
Hexachlorobenzene	108		P	80 - 120
Kepone	57.1*		F	80 - 120
Lambda-Cyhalothrin	90.5		P	80 - 120
Methoprene	95.8		P	80 - 120
Methoxychlor	101		P	80 - 120
MGK-264	86.2		P	80 - 120
Mirex	102		P	80 - 120
Oxychlordane	114		P	80 - 120
Permethrin	105		P	80 - 120
Phenothrin	94.3		P	80 - 120
Piperonyl Butoxide	101		P	80 - 120
Prallethrin	118		P	80 - 120
Tau-Fluvalinate	98.8		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270E
Run ID: A119165
Included Lab Sample IDs: 2405727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tetramethrin	113		P	80 - 120
Trans-Nonachlor	104		P	80 - 120
Triclosan Methyl	119		P	80 - 120
Trifluralin	92.5		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			Precision SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	100	99.2	99.2			1.17
	Iron	100	105	103	102		1.58
	Magnesium	101	104	102	100		1.48
	Potassium	100	104	103	100		0.505
	Sodium	99.5	98.9	98.9			0.341
	Strontium	102	104	103	101		1.30
	Tin	102	101	99.4	97.8		1.73
	Titanium	100	101	102	101		0.741
	Vanadium	99.7	101	102	100		0.432
	Zinc	102	104	103	98.7		0.175
EPA 200.8 Rev. 5.4	Aluminum	102	98.9	100	98.8		1.15
	Antimony	108	107	107	107		0.0221
	Arsenic	102	102	101	100		0.678
	Barium	105	103	104	103		0.369
	Beryllium	98.9	99.1	98.6	96.8		0.549
	Boron	103	100	102	103		0.948
	Cadmium	102	103	103	101		0.285
	Chromium	98.6	97.5	97.4	96.8		0.202
	Cobalt	103	101	101	101		0.0975
	Copper	98.5	96.8	96.6	96.2		0.165
	Lead	105	104	104	105		0.260
	Manganese	99.7	97.9	97.1	98.0		0.716
	Molybdenum	101	103	101	100		1.46
	Nickel	98.0	97.5	96.8	96.5		0.800
	Selenium	102	102	101	101		1.12
	Silver	106	103	102	104		0.598
	Thallium	101	103	103	104		0.226
EPA 8270E	Aldrin	37.1	47.8	50.2			4.87
	Alpha-BHC	98.5	94.3	95.7			1.51
	Alpha-Chlordane	59.6	73.2	71.5			2.34
	Beta-BHC	83.5	141	102			32.1
	Beta-Cyfluthrin	55.6	113	85.6			27.3
	Bifenthrin	48.6	72.8	53.5			30.7
	Chlorothalonil	61.5	32.6	65.1			66.5
	Cis-Nonachlor	69.3	51.3	52.7			2.74
	Cypermethrin	129	93.4	120			25.2
	Dacthal	66.8	146	107			30.6
	DDD-p,p'	78.9	79.0	75.3			4.80
	DDE-p,p'	68.2	53.8	39.6			30.5
	DDT-p,p'	68.2	68.5	60.2			12.9
	Delta-BHC	100	95.1	106			10.8
	Deltamethrin	64.1	58.7	43.7			29.4
	Dichlobenil	116	96.7	80.3			18.5
	Dicofol	56.1	71.8	67.3			6.41
	Dieldrin	84.9	65.5	62.9			3.62
	Endosulfan I	80.4	66.9	65.2			2.64
	Endosulfan II	75.0	69.1	69.5			0.599
	Endosulfan Sulfate	61.5	125	87.8			34.9
	Endrin	82.5	93.1	71.3			26.6
	Endrin Aldehyde	48.2	68.9	78.2			12.6
	Endrin Ketone	87.8	80.1	70.5			12.8
	Esfenvalerate	61.6	50.8	49.1			3.41
	Ethalfuralin	70.0	66.9	71.9			7.17
	Fenpropathrin	48.8	95.4	66.5			35.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Gamma-BHC	114	111	95.7			14.4
	Gamma-Chlordane	52.0	69.8	70.8			1.51
	Heptachlor	78.8	69.6	61.1			12.9
	Heptachlor Epoxide	69.4	108	74.2			32.8
	Hexachlorobenzene	77.1	85.6	70.6			19.2
	Kepone	126	111	54.4			68.4
	Lambda-Cyhalothrin	65.1	94.3	75.8			21.7
	Methoprene	45.3	62.0	56.4			9.48
	Methoxychlor	79.5	53.7	60.8			12.4
	MGK-264	92.2	53.3	49.7			6.94
	Mirex	60.6	48.4	39.2			21.0
	Oxychlordane	71.2	61.7	75.4			20.0
	PCB-1016	79.5	64.4	79.8			21.4
	PCB-1260	114	73.4	87.4			17.4
	Permethrin	67.9	53.1	75.4			34.6
	Phenothrin	50.3	74.8	77.7			3.80
	Piperonyl Butoxide	87.3	61.6	86.1			33.1
	Prallethrin	57.1	73.3	73.2			0.176
	Tau-Fluvalinate	53.8	50.0	39.3			23.8
	Tetramethrin	74.2	117	87.8			28.8
	Trans-Nonachlor	46.1	72.4	64.7			11.3
	Triclosan Methyl	73.5	65.4	84.4			25.3
	Trifluralin	69.4	61.5	66.2			7.37
EPA 8276	Chlordane	78.7	76.6	83.0			7.50
	Toxaphene	90.8	93.8	96.0			2.38
EPA 8321B	2,4-D	94.0	113	110			2.74
	2,4,5-T	91.9	115	109			5.85
	Acesulfame K	144	133	135			1.22
	Acetaminophen	74.1	85.7	84.1			1.85
	Acetamiprid	82.4	98.6	96.6			2.02
	Afidopyropen	68.1	99.1	95.3			3.85
	AMPA	97.2	91.2	90.8			0.419
	Bentazon	139	164	174			5.03
	Benzovindiflupyr	79.3	81.9	87.3			6.39
	Carbamazepine	72.2	82.6	84.1			1.79
	Clothianidin	84.7	99.7	99.2			0.475
	Dinotefuran	94.6	112	116			3.54
	Diuron	70.0	72.5	73.5			1.32
	Endothall	77.8	77.2	76.0			1.55
	Fenuron	81.9	77.3	84.5			8.83
	Fluridone	73.3	81.8	96.1			16.1
	Glufosinate	79.1	67.6	69.6			3.03
	Glyphosate	96.7	82.8	91.7			10.1
	Hydrocodone	78.2	80.7	85.4			5.60
	Ibuprofen	73.6	86.5	78.2			9.98
	Imazapyr	88.6	143	114			20.0
	Imidacloprid	83.3	104	102			2.17
	Linuron	68.3	74.5	74.5			0.0137
	Mandestrobin	82.6	94.1	90.4			3.98
	MCPP	98.2	126	110			13.5
	Naproxen	75.7	93.3	73.3			23.9
	Primidone	84.1	98.8	95.8			3.10
	Pyraclostrobin	77.6	85.1	85.7			0.684
	Silvex	87.8	112	117			3.93

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS	MS		
EPA 8321B	Sucralose	118	109	136		19.1
	Thiamethoxam	79.7	98.5	95.4		3.27
	Tolfenpyrad	51.9	51.2	49.7		2.86
	Triclopyr	91.7	105	103		2.18

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	2405731, 2405732
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2405731, 2405732
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2405727
EPA 8270E	PCBs in water matrices by GC/MS/MS	2405727
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2405727
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2405729, 2405730
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2405731, 2405732

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	05/04/2023	05/08/2023 12:00	George D Taylor	05/10/2023 18:59	McKinley C Carter	2405732
	05/04/2023	05/08/2023 12:00	George D Taylor	05/10/2023 21:47	McKinley C Carter	2405731
	05/04/2023	05/08/2023 12:00	George D Taylor	05/10/2023 21:54	McKinley C Carter	2405731
EPA 200.8 Rev. 5.4	05/04/2023	05/08/2023 12:00	George D Taylor	05/09/2023 13:28	Emily M Philpot	2405732
	05/04/2023	05/08/2023 12:00	George D Taylor	05/09/2023 15:51	Emily M Philpot	2405731
EPA 8270E	05/04/2023	05/08/2023 09:00	Fe-Val Siddell	05/11/2023 03:05	Julie Wi	2405727
	05/04/2023	05/08/2023 09:00	Fe-Val Siddell	05/13/2023 01:05	Michael Poppell	2405727
EPA 8276	05/04/2023	05/08/2023 09:00	Fe-Val Siddell	05/11/2023 12:59	Arthur Maknenko	2405727
EPA 8321B	05/04/2023	05/05/2023 09:00	Hoor Shaik	05/05/2023 21:22	Juyoung Kim	2405729
	05/04/2023	05/05/2023 09:00	Hoor Shaik	05/05/2023 22:00	Juyoung Kim	2405730
	05/04/2023	05/05/2023 09:00	Hoor Shaik	05/08/2023 10:41	Juyoung Kim	2405730
	05/04/2023	05/05/2023 13:00	Manjita Shrestha	05/05/2023 19:43	Manjita Shrestha	2405729
	05/04/2023	05/05/2023 13:00	Manjita Shrestha	05/05/2023 19:56	Manjita Shrestha	2405730
	05/04/2023	05/05/2023 13:00	Manjita Shrestha	05/06/2023 19:36	Manjita Shrestha	2405729
	05/04/2023	05/05/2023 13:00	Manjita Shrestha	05/06/2023 19:50	Manjita Shrestha	2405730
SM 2340 B-2011	05/04/2023			05/10/2023 18:59	McKinley C Carter	2405732
	05/04/2023			05/10/2023 21:47	McKinley C Carter	2405731