

Chemical Analysis Report

NE-DIST-2023-11-29-02

Florida DEP Laboratory
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DOH Accreditation E31780

Event Description: **LSJR North 2**
Request ID: **RQ-2023-12-04-32**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 21-DEC-2023 09:24

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a white 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: HIGHLANDS CR AT BROWARD RD

Collection Date/Time: 11/28/2023 10:55

Field ID: 20030025

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453487	EPA 200.7 Rev. 4.4	Calcium	108		mg/L	P438980	
		Iron	180	I	ug/L	P438980	
		Magnesium	275		mg/L	P438980	
		Potassium	91		mg/L	P438980	
		Sodium	2.40E+03		mg/L	P438980	
		Strontium	1.87E+03		ug/L	P438980	
		Tin	9.0	U	ug/L	P438980	
		Titanium	2.8	I	ug/L	P438980	
	EPA 200.8 Rev. 5.4	Vanadium	6.0	U	ug/L	P438980	
		Zinc	15	U	ug/L	P438980	
		Aluminum	122		ug/L	P438455	
		Antimony	0.20	U	ug/L	P438455	
		Arsenic	1.33		ug/L	P438455	
		Barium	20.9		ug/L	P438455	
		Beryllium	0.040	U	ug/L	P438455	
		Boron	910		ug/L	P438455	
		Cadmium	0.080	U	ug/L	P438455	
		Chromium	4.0	U	ug/L	P438455	
		Cobalt	0.084	I	ug/L	P438455	
		Copper	1.6	U	ug/L	P438455	
		Lead	0.80	U	ug/L	P438455	
		Manganese	10.4		ug/L	P438455	
		Molybdenum	3.0		ug/L	P438455	
		Nickel	2.0	U	ug/L	P438455	
		Selenium	0.80	U	ug/L	P438455	
		Silver	0.040	U	ug/L	P438455	
		Thallium	0.40	U	ug/L	P438455	
	SM 2340 B-2011	Hardness	1.40E+03		mg/L	P438980	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: BLOCKHOUSE CR AT LEONID RD

Collection Date/Time: 11/28/2023 11:15

Field ID: 20030027FLA

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453484	EPA 8270E	Aldrin	0.66	U	ng/L	P438496	MS
		Alpha-BHC	0.10	U	ng/L	P438496	
		Alpha-Chlordane	0.20	U	ng/L	P438496	
		PCB-1016	2.0	U	ng/L	P438496	
		Beta-BHC	0.10	U	ng/L	P438496	
		PCB-1221	2.0	U	ng/L	P438496	
		Beta-Cyfluthrin	1.3	U	ng/L	P438496	
		PCB-1232	2.0	U	ng/L	P438496	
		Bifenthrin	0.51	U	ng/L	P438496	
		PCB-1242	2.0	U	ng/L	P438496	
		PCB-1248	2.0	U	ng/L	P438496	
		Chlorothalonil	3.7	U	ng/L	P438496	
		PCB-1254	2.0	U	ng/L	P438496	
		Cis-Nonachlor	0.20	U	ng/L	P438496	
		PCB-1260	2.0	UJ	ng/L	P438496	LCS, MS
		Cypermethrin	1.5	U	ng/L	P438496	
		Dacthal	0.15	U	ng/L	P438496	
		DDD-p,p'	0.26	U	ng/L	P438496	
		DDE-p,p'	0.20	U	ng/L	P438496	
		DDT-p,p'	0.82	U	ng/L	P438496	
		Delta-BHC	0.53	I	ng/L	P438496	
		Deltamethrin	1.3	U	ng/L	P438496	
		Dichlobenil	0.26	U	ng/L	P438496	
		Dicofol	1.3	U	ng/L	P438496	
		Dieldrin	0.41	U	ng/L	P438496	
		Endosulfan I	0.41	U	ng/L	P438496	
		Endosulfan II	0.92	U	ng/L	P438496	
		Endosulfan Sulfate	0.31	U	ng/L	P438496	
		Endrin	0.92	U	ng/L	P438496	
		Endrin Aldehyde	0.77	U	ng/L	P438496	
		Endrin Ketone	0.41	U	ng/L	P438496	
		Esfenvalerate	0.77	U	ng/L	P438496	
		Ethalfuralin	0.15	U	ng/L	P438496	
		Fenpropathrin	0.26	U	ng/L	P438496	
		Gamma-BHC	0.13	U	ng/L	P438496	
		Gamma-Chlordane	0.20	U	ng/L	P438496	
		Heptachlor	0.20	U	ng/L	P438496	
		Heptachlor Epoxide	0.26	U	ng/L	P438496	
		Hexachlorobenzene**	1.0	U	ng/L	P438496	
		Kepone	14	U	ng/L	P438496	
		Lambda-Cyhalothrin	0.77	U	ng/L	P438496	
		Methoprene	0.77	U	ng/L	P438496	
		Methoxychlor	0.31	U	ng/L	P438496	
		MGK-264	0.20	U	ng/L	P438496	

Field ID: 20030027FLA

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453484	EPA 8270E	Mirex	0.36	U	ng/L	P438496	
		Oxychlordane	0.31	U	ng/L	P438496	
		Permethrin	1.6	U	ng/L	P438496	
		Phenothrin	0.92	U	ng/L	P438496	
		Piperonyl Butoxide	0.42	I	ng/L	P438496	
		Prallethrin	2.0	U	ng/L	P438496	
		Tau-Fluvalinate	0.26	U	ng/L	P438496	
		Tetramethrin	0.77	U	ng/L	P438496	
		Trans-Nonachlor	0.20	U	ng/L	P438496	
		Triclosan Methyl	0.15	U	ng/L	P438496	
		Trifluralin	0.20	U	ng/L	P438496	
		Chlordane	2.0	U	ng/L	P438496	
		Toxaphene	15	U	ng/L	P438496	
2453486	EPA 200.7 Rev. 4.4	Calcium	98.7		mg/L	P438455	
		Iron	260	I	ug/L	P438980	
		Magnesium	246		mg/L	P438455	
		Potassium	79		mg/L	P438455	
		Sodium	2.00E+03		mg/L	P438455	
		Strontium	1.65E+03		ug/L	P438455	
		Tin	9.0	U	ug/L	P438455	
		Titanium	2.6	I	ug/L	P438455	
		Vanadium	6.0	U	ug/L	P438455	
		Zinc	15	U	ug/L	P438455	
	EPA 200.8 Rev. 5.4	Aluminum	148		ug/L	P438455	
		Antimony	0.20	U	ug/L	P438455	
		Arsenic	1.34		ug/L	P438455	
		Barium	21.9		ug/L	P438455	
		Beryllium	0.040	U	ug/L	P438455	
		Boron	812		ug/L	P438455	
		Cadmium	0.080	U	ug/L	P438455	
		Chromium	4.0	U	ug/L	P438455	
		Cobalt	1.37		ug/L	P438455	
		Copper	1.6	U	ug/L	P438455	
		Lead	0.80	U	ug/L	P438455	
		Manganese	11.1		ug/L	P438455	
		Molybdenum	2.7		ug/L	P438455	
		Nickel	2.0	U	ug/L	P438455	
		Selenium	0.80	U	ug/L	P438455	
		Silver	0.040	U	ug/L	P438455	
		Thallium	0.40	U	ug/L	P438455	
	SM 2340 B-2011	Hardness	1.26E+03		mg/L	P438455	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: TERRAPIN CREEK AT ALTA ROAD

Collection Date/Time: 11/28/2023 12:40

Field ID: 20030654

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453488	EPA 200.7 Rev. 4.4	Calcium	129		mg/L	P438455	
		Iron	370		ug/L	P438980	
		Magnesium	340		mg/L	P438455	
		Potassium	104		mg/L	P438455	
		Sodium	2.63E+03		mg/L	P438455	
		Strontium	2.09E+03		ug/L	P438455	
		Tin	9.0	U	ug/L	P438455	
		Titanium	4.0	I	ug/L	P438455	
		Vanadium	6.0	U	ug/L	P438455	
		Zinc	15	U	ug/L	P438455	
	EPA 200.8 Rev. 5.4	Aluminum	243		ug/L	P438455	
		Antimony	0.20	U	ug/L	P438455	
		Arsenic	1.41		ug/L	P438455	
		Barium	16.0		ug/L	P438455	
		Beryllium	0.040	U	ug/L	P438455	
		Boron	1.09E+03		ug/L	P438455	
		Cadmium	0.080	U	ug/L	P438455	
		Chromium	4.0	U	ug/L	P438455	
		Cobalt	0.96		ug/L	P438455	
		Copper	1.6	U	ug/L	P438455	
		Lead	0.80	U	ug/L	P438455	
		Manganese	13.1		ug/L	P438455	
		Molybdenum	3.6		ug/L	P438455	
		Nickel	2.0	U	ug/L	P438455	
		Selenium	0.80	U	ug/L	P438455	
		Silver	0.040	U	ug/L	P438455	
		Thallium	0.40	U	ug/L	P438455	
	SM 2340 B-2011	Hardness	1.72E+03		mg/L	P438455	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable because of high analyte concentration in the QC sample.

Sample Location: BLOCKHOUSE 100M ABV IRMA RD

Collection Date/Time: 11/28/2023 11:45

Field ID: G2NE1159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453485	EPA 8270E	Aldrin	0.68	U	ng/L	P438496	MS
		Alpha-BHC	0.10	U	ng/L	P438496	
		Alpha-Chlordane	0.21	U	ng/L	P438496	
		PCB-1016	2.1	U	ng/L	P438496	
		Beta-BHC	0.10	U	ng/L	P438496	
		PCB-1221	2.1	U	ng/L	P438496	
		Beta-Cyfluthrin	1.3	U	ng/L	P438496	
		PCB-1232	2.1	U	ng/L	P438496	
		Bifenthrin	0.52	U	ng/L	P438496	
		PCB-1242	2.1	U	ng/L	P438496	
		PCB-1248	2.1	U	ng/L	P438496	
		Chlorothalonil	3.8	U	ng/L	P438496	
		PCB-1254	2.1	U	ng/L	P438496	
		Cis-Nonachlor	0.21	U	ng/L	P438496	
		PCB-1260	2.1	UJ	ng/L	P438496	LCS, MS
		Cypermethrin	1.6	U	ng/L	P438496	
		Dacthal	0.16	U	ng/L	P438496	
		DDD-p,p'	0.26	U	ng/L	P438496	
		DDE-p,p'	0.21	U	ng/L	P438496	
		DDT-p,p'	0.84	U	ng/L	P438496	
		Delta-BHC	0.42	U	ng/L	P438496	
		Deltamethrin	1.3	U	ng/L	P438496	
		Dichlobenil	0.26	U	ng/L	P438496	
		Dicofol	1.3	U	ng/L	P438496	
		Dieldrin	0.42	U	ng/L	P438496	
		Endosulfan I	0.42	U	ng/L	P438496	
		Endosulfan II	0.94	U	ng/L	P438496	
		Endosulfan Sulfate	0.31	U	ng/L	P438496	
		Endrin	0.94	U	ng/L	P438496	
		Endrin Aldehyde	0.78	U	ng/L	P438496	
		Endrin Ketone	0.42	U	ng/L	P438496	
		Esfenvalerate	0.78	U	ng/L	P438496	
		Ethalfuralin	0.16	U	ng/L	P438496	
		Fenpropathrin	0.26	U	ng/L	P438496	
		Gamma-BHC	0.13	U	ng/L	P438496	
		Gamma-Chlordane	0.21	U	ng/L	P438496	
		Heptachlor	0.21	U	ng/L	P438496	
		Heptachlor Epoxide	0.26	U	ng/L	P438496	
		Hexachlorobenzene**	1.0	U	ng/L	P438496	
		Kepone	14	U	ng/L	P438496	
		Lambda-Cyhalothrin	0.78	U	ng/L	P438496	
		Methoprene	0.78	U	ng/L	P438496	
		Methoxychlor	0.31	U	ng/L	P438496	
		MGK-264	0.21	U	ng/L	P438496	

Field ID: G2NE1159

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2453485	EPA 8270E	Mirex	0.37	U	ng/L	P438496	
		Oxychlordane	0.31	U	ng/L	P438496	
		Permethrin	1.7	U	ng/L	P438496	
		Phenothrin	0.94	U	ng/L	P438496	
		Piperonyl Butoxide	0.18	I	ng/L	P438496	
		Prallethrin	2.1	U	ng/L	P438496	
		Tau-Fluvalinate	0.26	U	ng/L	P438496	
		Tetramethrin	0.78	U	ng/L	P438496	
		Trans-Nonachlor	0.21	U	ng/L	P438496	
		Triclosan Methyl	0.16	U	ng/L	P438496	
		Trifluralin	0.21	U	ng/L	P438496	
	EPA 8276	Chlordane	2.1	UJ	ng/L	P438496	SUR
		Toxaphene	16	UJ	ng/L	P438496	SUR

Ref. Method and Comment:
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.
EPA 8276: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438455

Component	Result	Code	Units
Calcium	0.075	U	mg/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 200.7 Rev. 4.4

Batch ID: P438980

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: P438455

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: P438496

Component	Result	Code	Units
Aldrin	0.65	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P438496

Component	Result	Code	Units
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E
Batch ID: P438496

Component	Result	Code	Units
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276
Batch ID: P438496

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	97.4		P	85 - 115
Magnesium	97.5		P	85 - 115
Potassium	97.2		P	85 - 115
Sodium	94.4		P	85 - 115
Strontium	94.9		P	85 - 115
Tin	95.5		P	85 - 115
Titanium	94.7		P	85 - 115
Vanadium	93.6		P	85 - 115
Zinc	93.0		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.9		P	85 - 115
Strontium	98.4		P	85 - 115
Tin	99.7		P	85 - 115
Titanium	99.7		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438455

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.7		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	98.4		P	85 - 115
Barium	101		P	85 - 115
Beryllium	89.6		P	85 - 115
Boron	105		P	85 - 115
Cadmium	99.5		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	95.3		P	85 - 115
Copper	93.8		P	85 - 115
Lead	94.9		P	85 - 115
Manganese	101		P	85 - 115
Molybdenum	97.7		P	85 - 115
Nickel	95.5		P	85 - 115
Selenium	99.3		P	85 - 115
Silver	100		P	85 - 115
Thallium	96.7		P	85 - 115

Reference Method: EPA 8270E
Batch ID: P438496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	51.2		P	30 - 96.0

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
 Batch ID: P438496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Alpha-BHC	81.5		P	70 - 109
Alpha-Chlordane	69.5		P	45 - 107
Beta-BHC	77.1		P	64 - 138
Beta-Cyfluthrin	70.9		P	17 - 141
Bifenthrin	58.1		P	10 - 113
Chlorothalonil	68.2		P	26 - 180
Cis-Nonachlor	62.0		P	37 - 102
Cypermethrin	60.9		P	20 - 133
Dacthal	72.8		P	69 - 114
DDD-p,p'	70.4		P	42 - 105
DDE-p,p'	70.4		P	42 - 106
DDT-p,p'	74.2		P	42 - 107
Delta-BHC	79.4		P	67 - 144
Deltamethrin	74.0		P	15 - 149
Dichlobenil	76.4		P	46 - 117
Dicofol	69.2		P	34 - 114
Dieldrin	71.3		P	50 - 108
Endosulfan I	73.6		P	55 - 104
Endosulfan II	79.8		P	51 - 111
Endosulfan Sulfate	76.2		P	56 - 121
Endrin	82.7		P	10 - 106
Endrin Aldehyde	57.1		P	34 - 114
Endrin Ketone	98.5		P	63 - 177
Esfenvalerate	64.7		P	29 - 143
Ethalfuralin	76.5		P	46 - 96.0
Fenpropathrin	74.5		P	28 - 115
Gamma-BHC	91.3		P	65 - 121
Gamma-Chlordane	77.8		P	39 - 103
Heptachlor	58.1		P	39 - 94.0
Heptachlor Epoxide	68.1		P	54 - 104
Hexachlorobenzene	54.4		P	36 - 100
Kepone	77.9		P	10 - 225
Lambda-Cyhalothrin	58.1		P	10 - 135
Methoprene	65.7		P	10 - 109
Methoxychlor	79.9		P	52 - 112
MGK-264	82.3		P	44 - 117
Mirex	58.8		P	20 - 90.0
Oxychlordane	100		P	44 - 102
PCB-1016	90.8		P	45 - 107
PCB-1260	127		F	40 - 118
Permethrin	62.4		P	18 - 135
Phenothrin	54.2		P	10 - 102
Piperonyl Butoxide	95.3		P	28 - 156
Prallethrin	77.9		P	28 - 113
Tau-Fluvalinate	61.4		P	10 - 123
Tetramethrin	74.8		P	18 - 158
Trans-Nonachlor	66.1		P	39 - 104
Triclosan Methyl	80.1		P	54 - 108
Trifluralin	71.0		P	46 - 97.0

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P438496

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	105		P	52 - 117
Toxaphene	120		P	44 - 125

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454028	Strontium	89.4	84.1	P/P	80 - 120
2454028	Tin	86.1	83.4	P/P	80 - 120
2454028	Titanium	96.9	95.3	P/P	80 - 120
2454028	Vanadium	95.6	94.1	P/P	80 - 120
2454028	Zinc	92.2	90.0	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453486	Iron	97.4	101	P/P	70 - 130
2453486	Strontium	86.1	91.2	P/P	70 - 130
2453486	Tin	89.4	88.2	P/P	70 - 130
2453486	Titanium	97.3	97.8	P/P	70 - 130
2453486	Vanadium	104	104	P/P	70 - 130
2453486	Zinc	101	99.5	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2454028	Aluminum	100	103	P/P	70 - 130
2454028	Antimony	101	101	P/P	70 - 130
2454028	Arsenic	109	112	P/P	70 - 130
2454028	Barium	101	101	P/P	70 - 130
2454028	Beryllium	96.4	98.0	P/P	70 - 130
2454028	Boron	93.8	103	P/P	70 - 130
2454028	Cadmium	98.7	95.1	P/P	70 - 130
2454028	Chromium	97.7	99.6	P/P	70 - 130
2454028	Cobalt	90.6	104	P/P	70 - 130
2454028	Copper	97.0	112	P/P	70 - 130
2454028	Lead	98.6	99.5	P/P	70 - 130
2454028	Manganese	95.5	95.9	P/P	70 - 130
2454028	Molybdenum	108	109	P/P	70 - 130
2454028	Nickel	92.5	93.2	P/P	70 - 130
2454028	Selenium	102	103	P/P	70 - 130
2454028	Silver	95.2	92.8	P/P	70 - 130
2454028	Thallium	99.6	101	P/P	70 - 130

Reference Method: EPA 8270E
Batch ID: P438496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453358	Aldrin	95.6	110	F/F	24 - 81.0
2453358	Alpha-BHC	93.6	87.4	P/P	65 - 110
2453358	Alpha-Chlordane	74.7	81.2	P/P	43 - 119
2453358	Beta-BHC	92.0	96.1	P/P	54 - 165
2453358	Beta-Cyfluthrin	101	102	P/P	27 - 165
2453358	Bifenthrin	71.3	74.0	P/P	17 - 117
2453358	Chlorothalonil	91.6	73.7	P/P	10 - 255
2453358	Cis-Nonachlor	69.1	70.2	P/P	34 - 98.0
2453358	Cypermethrin	68.8	77.8	P/P	25 - 143

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P438496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453358	Dacthal	93.2	92.2	P/P	55 - 139
2453358	DDD-p,p'	70.3	76.8	P/P	30 - 109
2453358	DDE-p,p'	75.1	77.4	P/P	35 - 106
2453358	DDT-p,p'	76.8	81.3	P/P	41 - 101
2453358	Delta-BHC	110	109	P/P	58 - 165
2453358	Deltamethrin	81.9	97.4	P/P	10 - 194
2453358	Dichlobenil	90.4	87.7	P/P	22 - 114
2453358	Dicofol	77.6	79.2	P/P	17 - 133
2453358	Dieldrin	78.2	80.8	P/P	45 - 129
2453358	Endosulfan I	99.2	99.2	P/P	49 - 104
2453358	Endosulfan II	97.4	100	P/P	37 - 117
2453358	Endosulfan Sulfate	81.9	80.6	P/P	38 - 128
2453358	Endrin	97.3	99.6	P/P	35 - 116
2453358	Endrin Aldehyde	79.1	74.1	P/P	19 - 108
2453358	Endrin Ketone	101	116	P/P	44 - 134
2453358	Esfenvalerate	73.2	85.3	P/P	27 - 176
2453358	Ethalfuralin	73.8	77.5	P/P	49 - 100
2453358	Fenpropathrin	83.0	87.8	P/P	34 - 117
2453358	Gamma-BHC	122	121	P/P	59 - 129
2453358	Gamma-Chlordane	92.4	98.6	P/P	33 - 107
2453358	Heptachlor	81.4	88.5	P/P	37 - 94.0
2453358	Heptachlor Epoxide	89.8	87.2	P/P	38 - 118
2453358	Hexachlorobenzene	51.5	60.3	P/P	35 - 97.0
2453358	Kepone	85.7	49.0	P/P	10 - 221
2453358	Lambda-Cyhalothrin	59.1	66.1	P/P	23 - 190
2453358	Methoprene	81.2	84.2	P/P	21 - 109
2453358	Methoxychlor	77.9	83.2	P/P	46 - 118
2453358	MGK-264	88.8	92.1	P/P	39 - 122
2453358	Mirex	67.8	76.3	P/P	25 - 90.0
2453358	Oxychlordane	80.4	80.0	P/P	42 - 100
2453358	Permethrin	64.0	75.1	P/P	33 - 181
2453358	Phenothrin	57.9	65.6	P/P	12 - 125
2453358	Piperonyl Butoxide	92.4	97.3	P/P	10 - 178
2453358	Prallethrin	85.1	83.6	P/P	24 - 122
2453358	Tau-Fluvalinate	74.7	85.4	P/P	13 - 151
2453358	Tetramethrin	73.4	78.4	P/P	16 - 172
2453358	Trans-Nonachlor	74.6	76.4	P/P	39 - 100
2453358	Triclosan Methyl	95.1	95.4	P/P	43 - 110
2453358	Trifluralin	71.2	75.5	P/P	45 - 94.0
2453465	PCB-1016	91.8	87.7	P/P	45 - 107
2453465	PCB-1260	137	124	F/F	40 - 112

Reference Method: EPA 8276
Batch ID: P438496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2453465	Chlordane	115	106	P/P	43 - 123
2453465	Toxaphene	139	129	P/P	27 - 156

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454028	Calcium	4.83	Spike	P	0 - 20
2454028	Magnesium	3.89	Spike	P	0 - 20
2454028	Potassium	1.16	Spike	P	0 - 20
2454028	Sodium	1.13	Spike	P	0 - 20
2454028	Strontium	3.08	Spike	P	0 - 20
2454028	Tin	3.08	Spike	P	0 - 20
2454028	Titanium	1.66	Spike	P	0 - 20
2454028	Vanadium	1.66	Spike	P	0 - 20
2454028	Zinc	2.33	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P438980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453486	Calcium	2.84	Spike	P	0 - 20
2453486	Iron	3.32	Spike	P	0 - 20
2453486	Magnesium	3.37	Spike	P	0 - 20
2453486	Potassium	0.287	Spike	P	0 - 20
2453486	Sodium	1.21	Spike	P	0 - 20
2453486	Strontium	2.88	Spike	P	0 - 20
2453486	Tin	1.28	Spike	P	0 - 20
2453486	Titanium	0.448	Spike	P	0 - 20
2453486	Vanadium	0.0999	Spike	P	0 - 20
2453486	Zinc	1.13	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P438455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2454028	Aluminum	2.14	Spike	P	0 - 20
2454028	Antimony	0.155	Spike	P	0 - 20
2454028	Arsenic	1.85	Spike	P	0 - 20
2454028	Barium	0.497	Spike	P	0 - 20
2454028	Beryllium	1.66	Spike	P	0 - 20
2454028	Boron	2.08	Spike	P	0 - 20
2454028	Cadmium	3.69	Spike	P	0 - 20
2454028	Chromium	1.92	Spike	P	0 - 20
2454028	Cobalt	13.5	Spike	P	0 - 20
2454028	Copper	14.1	Spike	P	0 - 20
2454028	Lead	0.915	Spike	P	0 - 20
2454028	Manganese	0.401	Spike	P	0 - 20
2454028	Molybdenum	0.727	Spike	P	0 - 20
2454028	Nickel	0.763	Spike	P	0 - 20
2454028	Selenium	1.01	Spike	P	0 - 20
2454028	Silver	2.54	Spike	P	0 - 20
2454028	Thallium	1.13	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P438496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453358	Aldrin	13.7	Spike	P	0 - 41
2453358	Alpha-BHC	6.84	Spike	P	0 - 25
2453358	Alpha-Chlordane	8.33	Spike	P	0 - 32
2453358	Beta-BHC	4.40	Spike	P	0 - 33
2453358	Beta-Cyfluthrin	0.477	Spike	P	0 - 43
2453358	Bifenthrin	3.75	Spike	P	0 - 52
2453358	Chlorothalonil	21.7	Spike	P	0 - 82
2453358	Cis-Nonachlor	1.66	Spike	P	0 - 33
2453358	Cypermethrin	12.2	Spike	P	0 - 51
2453358	Dacthal	1.10	Spike	P	0 - 27
2453358	DDD-p,p'	8.77	Spike	P	0 - 39
2453358	DDE-p,p'	3.03	Spike	P	0 - 31
2453358	DDT-p,p'	5.74	Spike	P	0 - 29
2453358	Delta-BHC	1.17	Spike	P	0 - 35
2453358	Deltamethrin	17.3	Spike	P	0 - 100
2453358	Dichlobenil	2.99	Spike	P	0 - 40
2453358	Dicofol	1.98	Spike	P	0 - 37
2453358	Dieldrin	3.20	Spike	P	0 - 27
2453358	Endosulfan I	0.0283	Spike	P	0 - 23
2453358	Endosulfan II	2.66	Spike	P	0 - 34
2453358	Endosulfan Sulfate	1.60	Spike	P	0 - 36
2453358	Endrin	2.35	Spike	P	0 - 45
2453358	Endrin Aldehyde	6.58	Spike	P	0 - 76
2453358	Endrin Ketone	13.4	Spike	P	0 - 43
2453358	Esfenvalerate	15.3	Spike	P	0 - 51
2453358	Ethalfuralin	4.84	Spike	P	0 - 22
2453358	Fenpropathrin	5.65	Spike	P	0 - 49
2453358	Gamma-BHC	0.366	Spike	P	0 - 28
2453358	Gamma-Chlordane	6.55	Spike	P	0 - 40
2453358	Heptachlor	8.41	Spike	P	0 - 29
2453358	Heptachlor Epoxide	2.98	Spike	P	0 - 33
2453358	Hexachlorobenzene	15.9	Spike	P	0 - 36
2453358	Kepone	54.4	Spike	P	0 - 85
2453358	Lambda-Cyhalothrin	11.1	Spike	P	0 - 55
2453358	Methoprene	3.67	Spike	P	0 - 53
2453358	Methoxychlor	6.58	Spike	P	0 - 50
2453358	MGK-264	3.73	Spike	P	0 - 43
2453358	Mirex	11.8	Spike	P	0 - 40
2453358	Oxychlordane	0.522	Spike	P	0 - 31
2453358	Permethrin	15.9	Spike	P	0 - 50
2453358	Phenothrin	12.4	Spike	P	0 - 58
2453358	Piperonyl Butoxide	5.17	Spike	P	0 - 100
2453358	Prallethrin	1.75	Spike	P	0 - 39
2453358	Tau-Fluvalinate	13.4	Spike	P	0 - 54
2453358	Tetramethrin	6.47	Spike	P	0 - 51
2453358	Trans-Nonachlor	2.38	Spike	P	0 - 39
2453358	Triclosan Methyl	0.348	Spike	P	0 - 31
2453358	Trifluralin	5.74	Spike	P	0 - 22
2453465	PCB-1016	4.65	Spike	P	0 - 25
2453465	PCB-1260	10.4	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P438496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2453465	Chlordane	7.70	Spike	P	0 - 28
2453465	Toxaphene	8.02	Spike	P	0 - 27

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

Quality Assurance Report Surrogates

Lab Sample ID: 2453484
Field Sample ID: 20030027FLA

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	106	P	37 - 129
EPA 8270E	Decachlorobiphenyl	95.5	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	58.1	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	58.7	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	95.0	P	28 - 102
EPA 8276	PCNB	115	P	49 - 115

Lab Sample ID: 2453485
Field Sample ID: G2NE1159

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	96.2	P	37 - 129
EPA 8270E	Decachlorobiphenyl	99.0	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	55.7	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	58.2	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	84.2	P	28 - 102
EPA 8276	PCNB	119	F	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A123042

Included Lab Sample IDs: 2453486, 2453487, 2453488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.7	99.4	P/P	90 - 110
Antimony	99.3	98.9	P/P	90 - 110
Arsenic	99.3	100	P/P	90 - 110
Barium	98.3	99.9	P/P	90 - 110
Beryllium	96.7	98.4	P/P	90 - 110
Boron	98.8	96.4	P/P	90 - 110
Cadmium	99.3	98.0	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Cobalt	95.5	96.1	P/P	90 - 110
Copper	96.4	97.3	P/P	90 - 110
Lead	94.3	94.5	P/P	90 - 110
Manganese	100	99.2	P/P	90 - 110
Molybdenum	98.3	98.0	P/P	90 - 110
Nickel	97.0	97.9	P/P	90 - 110
Selenium	98.9	97.8	P/P	90 - 110
Silver	97.6	97.3	P/P	90 - 110
Thallium	95.5	96.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123155

Included Lab Sample IDs: 2453486, 2453488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	98.0	98.2	P/P	90 - 110
Calcium	98.2	98.0	P/P	90 - 110
Magnesium	98.6	99.0	P/P	90 - 110
Magnesium	99.0	98.5	P/P	90 - 110
Potassium	98.2	98.5	P/P	90 - 110
Potassium	98.5	100	P/P	90 - 110
Sodium	95.6	94.3	P/P	90 - 110
Sodium	95.8	95.6	P/P	90 - 110
Strontium	98.1	99.4	P/P	90 - 110
Strontium	99.4	98.3	P/P	90 - 110
Tin	97.6	98.3	P/P	90 - 110
Tin	98.3	98.8	P/P	90 - 110
Titanium	98.2	99.3	P/P	90 - 110
Titanium	99.3	98.9	P/P	90 - 110
Vanadium	97.3	98.0	P/P	90 - 110
Vanadium	98.0	97.7	P/P	90 - 110
Zinc	95.9	96.6	P/P	90 - 110
Zinc	96.6	96.4	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A123183

Included Lab Sample IDs: 2453484, 2453485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	117		P	80 - 120
Alpha-BHC	98.0		P	80 - 120
Alpha-Chlordane	111		P	80 - 120
Beta-BHC	108		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A123183

Included Lab Sample IDs: 2453484, 2453485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beta-Cyfluthrin	96.9		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	105		P	80 - 120
Cis-Nonachlor	101		P	80 - 120
Cypermethrin	101		P	80 - 120
Dacthal	113		P	80 - 120
DDD-p,p'	108		P	80 - 120
DDE-p,p'	109		P	80 - 120
DDT-p,p'	99.5		P	80 - 120
Delta-BHC	101		P	80 - 120
Deltamethrin	98.0		P	80 - 120
Dichlobenil	120		P	80 - 120
Dicofol	101		P	80 - 120
Dieldrin	111		P	80 - 120
Endosulfan I	101		P	80 - 120
Endosulfan II	102		P	80 - 120
Endosulfan Sulfate	108		P	80 - 120
Endrin	101		P	80 - 120
Endrin Aldehyde	99.4		P	80 - 120
Endrin Ketone	96.4		P	80 - 120
Esfenvalerate	99.9		P	80 - 120
Ethalfuralin	98.9		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	116		P	80 - 120
Gamma-Chlordane	116		P	80 - 120
Heptachlor	102		P	80 - 120
Heptachlor Epoxide	111		P	80 - 120
Hexachlorobenzene	101		P	80 - 120
Kepone	92.2		P	80 - 120
Lambda-Cyhalothrin	98.9		P	80 - 120
Methoprene	98.3		P	80 - 120
Methoxychlor	103		P	80 - 120
MGK-264	110		P	80 - 120
Mirex	96.4		P	80 - 120
Oxychlordane	110		P	80 - 120
Permethrin	104		P	80 - 120
Phenothrin	101		P	80 - 120
Piperonyl Butoxide	98.9		P	80 - 120
Prallethrin	107		P	80 - 120
Tau-Fluvalinate	101		P	80 - 120
Tetramethrin	100		P	80 - 120
Trans-Nonachlor	113		P	80 - 120
Triclosan Methyl	97.6		P	80 - 120
Trifluralin	96.8		P	80 - 120

Reference Method: EPA 8270E

Run ID: A123194

Included Lab Sample IDs: 2453484, 2453485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	98.7		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A123194

Included Lab Sample IDs: 2453484, 2453485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1260	99.5		P	80 - 120

Reference Method: EPA 8276

Run ID: A123295

Included Lab Sample IDs: 2453484, 2453485

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	101		P	80 - 120
Chlordane	98.0		P	80 - 120
Toxaphene	102		P	80 - 120
Toxaphene	103		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A123297

Included Lab Sample IDs: 2453486, 2453487, 2453488

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.2	97.4	P/P	90 - 110
Iron	97.0	98.3	P/P	90 - 110
Iron	98.3	99.3	P/P	90 - 110
Magnesium	98.2	98.7	P/P	90 - 110
Potassium	102	103	P/P	90 - 110
Sodium	99.3	101	P/P	90 - 110
Strontium	98.6	99.3	P/P	90 - 110
Tin	101	98.8	P/P	90 - 110
Titanium	99.0	98.7	P/P	90 - 110
Vanadium	98.4	98.0	P/P	90 - 110
Zinc	99.5	98.9	P/P	90 - 110

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 200.7 Rev. 4.4	Calcium	97.4					4.83
	Calcium	102					2.84
	Iron	105	97.4	101			3.32
	Magnesium	97.5					3.89
	Magnesium	104					3.37
	Potassium	97.2					1.16
	Potassium	101					0.287
	Sodium	94.4					1.13
	Sodium	99.9					1.21
	Strontium	94.9	89.4	84.1			3.08
	Strontium	98.4	86.1	91.2			2.88
	Tin	95.5	86.1	83.4			3.08
	Tin	99.7	89.4	88.2			1.28
	Titanium	94.7	96.9	95.3			1.66
	Titanium	99.7	97.3	97.8			0.448
	Vanadium	93.6	95.6	94.1			1.66
	Vanadium	100	104	104			0.0999
	Zinc	93.0	92.2	90.0			2.33
	Zinc	98.9	101	99.5			1.13
EPA 200.8 Rev. 5.4	Aluminum	99.7	100	103			2.14
	Antimony	101	101	101			0.155
	Arsenic	98.4	109	112			1.85
	Barium	101	101	101			0.497
	Beryllium	89.6	96.4	98.0			1.66
	Boron	105	93.8	103			2.08
	Cadmium	99.5	98.7	95.1			3.69
	Chromium	101	97.7	99.6			1.92
	Cobalt	95.3	90.6	104			13.5
	Copper	93.8	97.0	112			14.1
	Lead	94.9	98.6	99.5			0.915
	Manganese	101	95.5	95.9			0.401
	Molybdenum	97.7	108	109			0.727
	Nickel	95.5	92.5	93.2			0.763
	Selenium	99.3	102	103			1.01
	Silver	100	95.2	92.8			2.54
	Thallium	96.7	99.6	101			1.13
EPA 8270E	Aldrin	51.2	95.6	110			13.7
	Alpha-BHC	81.5	93.6	87.4			6.84
	Alpha-Chlordane	69.5	74.7	81.2			8.33
	Beta-BHC	77.1	92.0	96.1			4.40
	Beta-Cyfluthrin	70.9	101	102			0.477
	Bifenthrin	58.1	71.3	74.0			3.75
	Chlorothalonil	68.2	91.6	73.7			21.7
	Cis-Nonachlor	62.0	69.1	70.2			1.66
	Cypermethrin	60.9	68.8	77.8			12.2
	Dacthal	72.8	93.2	92.2			1.10
	DDD-p,p'	70.4	70.3	76.8			8.77
	DDE-p,p'	70.4	75.1	77.4			3.03
	DDT-p,p'	74.2	76.8	81.3			5.74
	Delta-BHC	79.4	110	109			1.17
	Deltamethrin	74.0	81.9	97.4			17.3
	Dichlobenil	76.4	90.4	87.7			2.99
	Dicofol	69.2	77.6	79.2			1.98
	Dieldrin	71.3	78.2	80.8			3.20

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Endosulfan I	73.6	99.2	99.2		0.0283
	Endosulfan II	79.8	97.4	100		2.66
	Endosulfan Sulfate	76.2	81.9	80.6		1.60
	Endrin	82.7	97.3	99.6		2.35
	Endrin Aldehyde	57.1	79.1	74.1		6.58
	Endrin Ketone	98.5	101	116		13.4
	Esfenvalerate	64.7	73.2	85.3		15.3
	Ethalfuralin	76.5	73.8	77.5		4.84
	Fenpropathrin	74.5	83.0	87.8		5.65
	Gamma-BHC	91.3	122	121		0.366
	Gamma-Chlordane	77.8	92.4	98.6		6.55
	Heptachlor	58.1	81.4	88.5		8.41
	Heptachlor Epoxide	68.1	89.8	87.2		2.98
	Hexachlorobenzene	54.4	51.5	60.3		15.9
	Kepone	77.9	85.7	49.0		54.4
	Lambda-Cyhalothrin	58.1	59.1	66.1		11.1
	Methoprene	65.7	81.2	84.2		3.67
	Methoxychlor	79.9	77.9	83.2		6.58
	MGK-264	82.3	88.8	92.1		3.73
	Mirex	58.8	67.8	76.3		11.8
	Oxychlordane	100	80.4	80.0		0.522
	PCB-1016	90.8	91.8	87.7		4.65
	PCB-1260	127	137	124		10.4
	Permethrin	62.4	64.0	75.1		15.9
	Phenothrin	54.2	57.9	65.6		12.4
	Piperonyl Butoxide	95.3	92.4	97.3		5.17
	Prallethrin	77.9	85.1	83.6		1.75
	Tau-Fluvalinate	61.4	74.7	85.4		13.4
	Tetramethrin	74.8	73.4	78.4		6.47
	Trans-Nonachlor	66.1	74.6	76.4		2.38
	Triclosan Methyl	80.1	95.1	95.4		0.348
	Trifluralin	71.0	71.2	75.5		5.74
EPA 8276	Chlordane	105	115	106		7.70
	Toxaphene	120	139	129		8.02

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	2453486, 2453487, 2453488
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2453486, 2453487, 2453488
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2453484, 2453485
EPA 8270E	PCBs in water matrices by GC/MS/MS	2453484, 2453485
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2453484, 2453485
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2453486, 2453487, 2453488

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	11/29/2023	12/04/2023 14:05	George D Taylor	12/12/2023 08:27	McKinley C Carter	2453486
	11/29/2023	12/04/2023 14:05	George D Taylor	12/12/2023 08:34	McKinley C Carter	2453486
	11/29/2023	12/04/2023 14:05	George D Taylor	12/12/2023 09:25	McKinley C Carter	2453488
	11/29/2023	12/04/2023 14:05	George D Taylor	12/12/2023 09:32	McKinley C Carter	2453488
	11/29/2023	12/14/2023 13:40	George D Taylor	12/18/2023 17:31	Samatha Luckman	2453486
	11/29/2023	12/14/2023 13:40	George D Taylor	12/18/2023 19:05	Samatha Luckman	2453487
	11/29/2023	12/14/2023 13:40	George D Taylor	12/18/2023 19:14	Samatha Luckman	2453487
	11/29/2023	12/14/2023 13:40	George D Taylor	12/18/2023 19:22	Samatha Luckman	2453488
	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 20:45	Emily M Philpot	2453486
EPA 200.8 Rev. 5.4	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 20:55	Emily M Philpot	2453487
	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 21:04	Emily M Philpot	2453488
	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 22:49	Emily M Philpot	2453486
	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 22:59	Emily M Philpot	2453487
	11/29/2023	12/04/2023 14:05	George D Taylor	12/05/2023 23:08	Emily M Philpot	2453488
EPA 8270E	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/08/2023 02:47	Lipi Saha	2453484
	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/08/2023 03:17	Lipi Saha	2453485
	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/12/2023 03:29	Julie Wi	2453484
	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/12/2023 04:00	Julie Wi	2453485
EPA 8276	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/16/2023 07:03	Arthur Maknenko	2453484
	11/29/2023	12/04/2023 08:00	Fe-Val Siddell	12/16/2023 08:54	Arthur Maknenko	2453485
SM 2340 B-2011	11/29/2023			12/12/2023 08:27	McKinley C Carter	2453486
	11/29/2023			12/12/2023 09:32	McKinley C Carter	2453488
	11/29/2023			12/18/2023 19:05	Samatha Luckman	2453487