

Chemical Analysis Report

SE-DIST-2022-04-13-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Sebastian Boat**
Request ID: **RQ-2022-02-14-55**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

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

Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 04-MAY-2022 12:12

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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, Nutrients 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 Prong Sebastian @ Park Dock

Collection Date/Time: 04/12/2022 12:30

Field ID: G5SE0079

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318659	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P412330	
	SM 2320 B-2011	Total Alkalinity	155		mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	8	I	mg/L	P412859	
	SM 4500-F- C-2011	Fluoride	0.59		mg F/L	P413150	
2318660	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P412410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P412825	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P412399	
	EPA 365.1 Rev. 2.0	Total-P	0.082		mg P/L	P412600	
	SM 5310 B-2011	Organic Carbon	9.6		mg C/L	P412477	
2318668	EPA 8270E	Aldrin	0.68	U	ng/L	P412338	
		Alpha-BHC	0.11	U	ng/L	P412338	
		Alpha-Chlordane	0.21	U	ng/L	P412338	
		PCB-1016	2.1	U	ng/L	P412338	
		Beta-BHC	0.11	U	ng/L	P412338	
		PCB-1221	2.1	U	ng/L	P412338	
		Beta-Cyfluthrin**	1.3	U	ng/L	P412338	
		PCB-1232	2.1	U	ng/L	P412338	
		Bifenthrin**	0.53	U	ng/L	P412338	
		PCB-1242	2.1	U	ng/L	P412338	
		Carbophenothion	0.95	U	ng/L	P412338	
		PCB-1248	2.1	U	ng/L	P412338	
		Chlorothalonil	1.3	U	ng/L	P412338	
		PCB-1254	2.1	U	ng/L	P412338	
		Cis-Nonachlor**	0.21	U	ng/L	P412338	
		PCB-1260	2.1	U	ng/L	P412338	
		Cypermethrin	1.6	U	ng/L	P412338	
		Dacthal**	0.16	U	ng/L	P412338	
		DDD-p,p'	0.26	U	ng/L	P412338	
		DDE-p,p'	0.21	U	ng/L	P412338	
		DDT-p,p'	0.26	U	ng/L	P412338	
		Delta-BHC	0.42	U	ng/L	P412338	
		Deltamethrin**	1.3	U	ng/L	P412338	
		Dichlobenil**	0.26	U	ng/L	P412338	
		Dicofol	1.3	U	ng/L	P412338	
		Dieldrin	0.42	U	ng/L	P412338	
		Endosulfan I	0.42	U	ng/L	P412338	
		Endosulfan II	0.42	U	ng/L	P412338	
		Endosulfan Sulfate	0.32	U	ng/L	P412338	
		Endrin	0.42	U	ng/L	P412338	
		Endrin Aldehyde	0.79	U	ng/L	P412338	
		Endrin Ketone	0.42	U	ng/L	P412338	MS, RPD
		Esfenvalerate**	0.79	U	ng/L	P412338	
		Ethalfuralin**	0.16	U	ng/L	P412338	
		Fenpropathrin**	0.26	U	ng/L	P412338	

Field ID: G5SE0079

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318668	EPA 8270E	Gamma-BHC	0.13	U	ng/L	P412338	
		Gamma-Chlordane	0.21	U	ng/L	P412338	
		Heptachlor	0.21	U	ng/L	P412338	
		Heptachlor Epoxide	0.26	U	ng/L	P412338	
		Hexachlorobenzene**	1.1	U	ng/L	P412338	
		Kepone**	5.3	U	ng/L	P412338	
		Lambda-Cyhalothrin**	0.79	U	ng/L	P412338	
		Methoprene**	0.79	U	ng/L	P412338	
		Methoxychlor	0.32	U	ng/L	P412338	
		MGK-264**	0.21	U	ng/L	P412338	
		Mirex	0.74	U	ng/L	P412338	
		Oxychlordane**	0.32	U	ng/L	P412338	
		Permethrin	1.7	U	ng/L	P412338	
		Phenothrin**	0.95	U	ng/L	P412338	
		Piperonyl Butoxide**	0.16	U	ng/L	P412338	
		Prallethrin**	2.1	U	ng/L	P412338	
		Tau-Fluvalinate**	0.26	U	ng/L	P412338	
		Tetramethrin**	0.79	U	ng/L	P412338	
		Trans-Nonachlor**	0.21	U	ng/L	P412338	
		Triclosan Methyl**	0.16	U	ng/L	P412338	
		Trifluralin	0.21	U	ng/L	P412338	
	EPA 8276	Chlordane	2.6	U	ng/L	P412338	
		Toxaphene	16	U	ng/L	P412338	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Sebastian @ Dale Winbrow

Collection Date/Time: 04/12/2022 12:45

Field ID: G5SE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318669	EPA 8270E	Aldrin	0.67	U	ng/L	P412338	
		Alpha-BHC	0.10	U	ng/L	P412338	
		Alpha-Chlordane	0.20	U	ng/L	P412338	
		PCB-1016	2.0	U	ng/L	P412338	
		Beta-BHC	0.10	U	ng/L	P412338	
		PCB-1221	2.0	U	ng/L	P412338	
		Beta-Cyfluthrin**	1.3	U	ng/L	P412338	
		PCB-1232	2.0	U	ng/L	P412338	
		Bifenthrin**	0.51	U	ng/L	P412338	
		PCB-1242	2.0	U	ng/L	P412338	
		Carbophenothion	0.92	U	ng/L	P412338	
		PCB-1248	2.0	U	ng/L	P412338	
		Chlorothalonil	1.3	U	ng/L	P412338	
		PCB-1254	2.0	U	ng/L	P412338	
		Cis-Nonachlor**	0.20	U	ng/L	P412338	
		PCB-1260	2.0	U	ng/L	P412338	
		Cypermethrin	1.5	U	ng/L	P412338	
		Dacthal**	0.15	U	ng/L	P412338	
		DDD-p,p'	0.30	I	ng/L	P412338	
		DDE-p,p'	0.20	U	ng/L	P412338	
		DDT-p,p'	0.27	I	ng/L	P412338	
		Delta-BHC	0.41	U	ng/L	P412338	
		Deltamethrin**	1.3	U	ng/L	P412338	
		Dichlobenil**	0.26	U	ng/L	P412338	
		Dicofol	1.3	U	ng/L	P412338	
		Dieldrin	0.41	U	ng/L	P412338	
		Endosulfan I	0.41	U	ng/L	P412338	
		Endosulfan II	0.41	U	ng/L	P412338	
		Endosulfan Sulfate	0.31	U	ng/L	P412338	
		Endrin	0.41	U	ng/L	P412338	
		Endrin Aldehyde	0.77	U	ng/L	P412338	
		Endrin Ketone	0.41	U	ng/L	P412338	MS, RPD
		Esfenvalerate**	0.77	U	ng/L	P412338	
		Ethalfuralin**	0.15	U	ng/L	P412338	
		Fenpropathrin**	0.26	U	ng/L	P412338	
		Gamma-BHC	0.13	U	ng/L	P412338	
		Gamma-Chlordane	0.20	U	ng/L	P412338	
		Heptachlor	0.20	U	ng/L	P412338	
		Heptachlor Epoxide	0.26	U	ng/L	P412338	
		Hexachlorobenzene**	1.0	U	ng/L	P412338	
		Kepone**	5.1	U	ng/L	P412338	
		Lambda-Cyhalothrin**	0.77	U	ng/L	P412338	
		Methoprene**	0.77	U	ng/L	P412338	
		Methoxychlor	0.31	U	ng/L	P412338	

Field ID: G5SE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318669	EPA 8270E	MGK-264**	0.20	U	ng/L	P412338	
		Mirex	0.72	U	ng/L	P412338	
		Oxychlordane**	0.31	U	ng/L	P412338	
		Permethrin	1.6	U	ng/L	P412338	
		Phenothrin**	0.92	U	ng/L	P412338	
		Piperonyl Butoxide**	0.16	I	ng/L	P412338	
		Prallethrin**	2.0	U	ng/L	P412338	
		Tau-Fluvalinate**	0.26	U	ng/L	P412338	
		Tetramethrin**	0.77	U	ng/L	P412338	
		Trans-Nonachlor**	0.20	U	ng/L	P412338	
		Triclosan Methyl**	0.15	U	ng/L	P412338	
		Trifluralin	0.20	U	ng/L	P412338	
		Chlordane	2.6	U	ng/L	P412338	
2318670	EPA 8276	Toxaphene	15	U	ng/L	P412338	
	EPA 8321B	Acesulfame K	0.10	U	ug/L	P412352	
		2,4-D	0.0098		ug/L	P412370	
		AMPA	1.0	U	ug/L	P412352	
		2,4,5-T	0.0040	U	ug/L	P412370	
		Acetaminophen	0.0080	U	ug/L	P412370	
		Endothall	0.25	U	ug/L	P412352	
		Acetamiprid	0.0020	U	ug/L	P412370	
		Glufosinate	1.0	U	ug/L	P412352	
		Glyphosate	1.0	U	ug/L	P412352	
		Afidopyropen	0.0020	U	ug/L	P412370	
		Sucralose	0.26		ug/L	P412352	
		Bentazon	0.020		ug/L	P412370	
		Benzovindiflupyr	0.0020	U	ug/L	P412370	
		Carbamazepine	0.0014	I	ug/L	P412370	
		Clothianidin	0.0020	U	ug/L	P412370	
		Dinotefuran	0.0020	U	ug/L	P412370	
		Diuron	0.0020	U	ug/L	P412370	
		Fenuron	0.032	U	ug/L	P412370	
		Fluridone	0.0011	I	ug/L	P412370	
		Imazapyr	0.21		ug/L	P412370	
		Hydrocodone	0.0020	U	ug/L	P412370	
		Ibuprofen	0.020	U	ug/L	P412370	
		Imidacloprid	0.012		ug/L	P412370	MS
		Linuron	0.0040	U	ug/L	P412370	
		Mandestrobin	0.0020	U	ug/L	P412370	
		MCPP	0.0040	U	ug/L	P412370	
		Naproxen	0.0080	U	ug/L	P412370	
		Primidone	0.0040	U	ug/L	P412370	MS, RPD
		Pyraclostrobin	0.0020	U	ug/L	P412370	
		Silvex	0.0040	U	ug/L	P412370	
		Thiamethoxam	0.0020	U	ug/L	P412370	MS

Field ID: G5SE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318670	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P412370	
		Triclopyr	0.0040	U	ug/L	P412370	

Ref. Method and Comment:
EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: Sebastian 970m downstream of S-157

Collection Date/Time: 04/12/2022 13:40

Field ID: G5SE0084

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318655	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P412330	
	SM 2320 B-2011	Total Alkalinity	154		mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	11		mg/L	P412859	
	SM 4500-F- C-2011	Fluoride	0.80		mg F/L	P412811	
2318657	EPA 350.1 Rev. 2.0	Ammonia-N	0.007		mg N/L	P412410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P412737	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412399	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P412600	
	SM 5310 B-2011	Organic Carbon	8.0		mg C/L	P412477	
2318676	EPA 200.7 Rev. 4.4	Calcium	254		mg/L	P412394	
		Iron	190	I	ug/L	P412394	
		Magnesium	626		mg/L	P412394	
		Strontium	5.99E+03		ug/L	P412394	
		Tin	60	U	ug/L	P412394	
		Titanium	3.6	I	ug/L	P412394	
		Vanadium	6.0	U	ug/L	P412394	
		Zinc	15	U	ug/L	P412394	
	EPA 200.8 Rev. 5.4	Aluminum	86	I	ug/L	P412394	
		Antimony	0.20	U	ug/L	P412394	
		Arsenic	1.77		ug/L	P412394	
		Beryllium	0.10	U	ug/L	P412394	
		Cadmium	0.080	U	ug/L	P412394	
		Chromium	1.6	U	ug/L	P412394	
		Cobalt	0.14	I	ug/L	P412394	
		Copper	2.3	I	ug/L	P412394	
		Lead	0.80	U	ug/L	P412394	
		Manganese	11.6		ug/L	P412394	
		Molybdenum	6.6		ug/L	P412394	
		Nickel	2.0	U	ug/L	P412394	
		Selenium	0.80	U	ug/L	P412394	
		Silver	0.040	U	ug/L	P412394	
		Thallium	0.40	U	ug/L	P412394	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: C-54 Confluence 1.25 miles downstream of S-157

Collection Date/Time: 04/12/2022 14:00

Field ID: G5SE0116

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2318656	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P412330	
	SM 2320 B-2011	Total Alkalinity	150		mg CaCO3/L	P412808	
	SM 2540 D-2011	TSS	10	IA	mg/L	P412859	
	SM 4500-F- C-2011	Fluoride	0.83		mg F/L	P412811	
2318658	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P412410	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.77		mg N/L	P412737	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P412399	
	EPA 365.1 Rev. 2.0	Total-P	0.093		mg P/L	P412600	
	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P412477	
2318677	EPA 200.7 Rev. 4.4	Calcium	268		mg/L	P412394	
		Iron	180	I	ug/L	P412394	
		Magnesium	641		mg/L	P412394	
		Strontium	6.29E+03		ug/L	P412394	
		Tin	60	U	ug/L	P412394	
		Titanium	3.5	I	ug/L	P412394	
		Vanadium	6.0	U	ug/L	P412394	
		Zinc	15	U	ug/L	P412394	
		Aluminum	60	I	ug/L	P412394	
		Antimony	0.20	U	ug/L	P412394	
	EPA 200.8 Rev. 5.4	Arsenic	1.84		ug/L	P412394	
		Beryllium	0.10	U	ug/L	P412394	
		Cadmium	0.080	U	ug/L	P412394	
		Chromium	1.6	U	ug/L	P412394	
		Cobalt	0.085	I	ug/L	P412394	
		Copper	1.6	U	ug/L	P412394	
		Lead	0.80	U	ug/L	P412394	
		Manganese	11.8		ug/L	P412394	
		Molybdenum	7.0		ug/L	P412394	
		Nickel	2.0	U	ug/L	P412394	
		Selenium	0.80	U	ug/L	P412394	
		Silver	0.040	U	ug/L	P412394	
		Thallium	0.40	U	ug/L	P412394	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P412330

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P412394

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	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: P412394

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0
Batch ID: P412410

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412737

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P412825

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P412399

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P412600

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 8270E

Batch ID: P412338

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
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	1.2	U	ng/L
Chlorothalonil	1.2	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P412338

Component	Result	Code	Units
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
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	0.70	U	ng/L
Mirex	0.70	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P412338

Component	Result	Code	Units
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: P412338

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Chlordane	2.5	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: EPA 8321B

Batch ID: P412352

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: P412370

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P412370

Component	Result	Code	Units
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	0.020	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P412808

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-2011

Batch ID: P412859

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500-F- C-2011

Batch ID: P413150

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P412477

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P412330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.6		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	110		P	85 - 115
Magnesium	104		P	85 - 115
Strontium	104		P	85 - 115
Tin	102		P	85 - 115
Titanium	106		P	85 - 115
Vanadium	99.1		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	94.0		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	98.4		P	85 - 115
Cobalt	103		P	85 - 115
Copper	98.6		P	85 - 115
Lead	103		P	85 - 115
Manganese	99.6		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	100		P	85 - 115
Selenium	99.0		P	85 - 115
Silver	105		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P412410

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P412399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P412600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	99.6		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P412338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	47.4		P	10 - 93.0
Alpha-BHC	96.4		P	75 - 106
Alpha-Chlordane	78.6		P	50 - 109
Beta-BHC	102		P	36 - 138
Beta-Cyfluthrin	65.1		P	23 - 167
Bifenthrin	47.0		P	11 - 123
Carbophenothion	47.1		P	18 - 96.0
Chlorothalonil	47.8		P	27 - 190
Cis-Nonachlor	67.6		P	40 - 111
Cypermethrin	65.6		P	25 - 155
Dacthal	89.4		P	72 - 119
DDD-p,p'	73.4		P	47 - 108
DDE-p,p'	74.6		P	48 - 107
DDT-p,p'	74.1		P	49 - 111
Delta-BHC	107		P	54 - 138
Deltamethrin	76.5		P	22 - 189
Dichlobenil	89.7		P	32 - 113
Dicofol	72.3		P	50 - 108
Dieldrin	76.7		P	56 - 110
Endosulfan I	80.2		P	60 - 105
Endosulfan II	78.0		P	50 - 120
Endosulfan Sulfate	87.7		P	55 - 121
Endrin	77.6		P	31 - 119
Endrin Aldehyde	100		P	36 - 116
Endrin Ketone	103		P	69 - 177
Esfenvalerate	67.4		P	10 - 179
Ethalfuralin	80.1		P	49 - 99.0
Fenpropathrin	60.8		P	35 - 119
Gamma-BHC	94.4		P	69 - 120
Gamma-Chlordane	72.7		P	45 - 107
Heptachlor	70.4		P	41 - 100
Heptachlor Epoxide	92.6		P	58 - 106
Hexachlorobenzene	73.7		P	39 - 100
Kepone	108		P	10 - 191
Lambda-Cyhalothrin	51.3		P	21 - 206
Methoprene	48.8		P	10 - 129
Methoxychlor	85.4		P	61 - 111
MGK-264	72.4		P	20 - 123
Mirex	52.9		P	10 - 182
Oxychlordane	78.6		P	39 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P412338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
PCB-1016	83.8		P	49 - 111
PCB-1260	101		P	42 - 116
Permethrin	64.6		P	26 - 152
Phenothrin	39.8		P	10 - 109
Piperonyl Butoxide	96.3		P	19 - 147
Prallethrin	69.6		P	14 - 109
Tau-Fluvalinate	52.4		P	16 - 134
Tetramethrin	86.5		P	10 - 125
Trans-Nonachlor	66.6		P	45 - 107
Triclosan Methyl	78.9		P	60 - 110
Trifluralin	75.6		P	44 - 101

Reference Method: EPA 8276

Batch ID: P412338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	96.4		P	61 - 118
Toxaphene	81.2		P	51 - 122

Reference Method: EPA 8321B

Batch ID: P412352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	86.5		P	40 - 150
AMPA	99.5		P	40 - 150
Endothall	114		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	127		P	40 - 150
Sucralose	78.2		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P412370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	111		P	40 - 150
2,4,5-T	99.3		P	40 - 150
Acetaminophen	65.5		P	30 - 150
Acetamiprid	95.4		P	40 - 150
Afidopyropen	61.6		P	40 - 150
Bentazon	101		P	30 - 150
Benzovindiflupyr	82.8		P	40 - 150
Carbamazepine	95.2		P	40 - 150
Clothianidin	102		P	40 - 150
Dinotefuran	80.8		P	40 - 150
Diuron	90.1		P	40 - 150
Fenuron	84.4		P	40 - 150
Fluridone	77.8		P	40 - 150
Hydrocodone	92.8		P	40 - 150
Ibuprofen	149		P	40 - 150
Imazapyr	132		P	40 - 150
Imidacloprid	91.3		P	40 - 150
Linuron	86.9		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P412370

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	82.7		P	40 - 150
MCPD	106		P	40 - 150
Naproxen	119		P	40 - 150
Primidone	124		P	40 - 150
Pyraclostrobin	72.7		P	40 - 150
Silvex	106		P	40 - 150
Thiamethoxam	97.5		P	40 - 150
Tolfenpyrad	40.3		P	30 - 150
Triclopyr	95.5		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P412808

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.7		P	94 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	93 - 104

Reference Method: SM 4500-F- C-2011

Batch ID: P413150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.6		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P412477

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318261	Iron	104	105	P/P	70 - 130
2318261	Tin	77.6	89.5	P/P	70 - 130
2318261	Titanium	86.0	90.4	P/P	70 - 130
2318261	Vanadium	101	101	P/P	70 - 130
2318261	Zinc	100	101	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318261	Aluminum	119	126	P/P	70 - 130
2318261	Antimony	101	101	P/P	70 - 130
2318261	Arsenic	115	117	P/P	70 - 130
2318261	Beryllium	108	105	P/P	70 - 130
2318261	Cadmium	94.9	94.6	P/P	70 - 130
2318261	Chromium	103	102	P/P	70 - 130
2318261	Cobalt	114	115	P/P	70 - 130
2318261	Copper	109	110	P/P	70 - 130
2318261	Lead	110	111	P/P	70 - 130
2318261	Manganese	98.5	98.6	P/P	70 - 130
2318261	Molybdenum	115	116	P/P	70 - 130
2318261	Nickel	119	120	P/P	70 - 130
2318261	Selenium	103	103	P/P	70 - 130
2318261	Silver	95.7	95.2	P/P	70 - 130
2318261	Thallium	111	112	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P412410

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318819	Ammonia-N	99.6	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318657	Kjeldahl Nitrogen	103	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318238	Kjeldahl Nitrogen	102	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P412399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318322	NO2NO3-N	98.0	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P412600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318357	Total-P	98.8	97.7	P/P	90 - 110

Reference Method: EPA 8270E

Batch ID: P412338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318339	Aldrin	64.4	64.7	P/P	10 - 89.0
2318339	Alpha-BHC	94.2	95.4	P/P	71 - 105
2318339	Alpha-Chlordane	72.7	72.2	P/P	43 - 107
2318339	Beta-BHC	118	120	P/P	57 - 152
2318339	Beta-Cyfluthrin	78.7	79.6	P/P	29 - 186
2318339	Bifenthrin	61.7	63.5	P/P	19 - 119
2318339	Carbophenothion	71.0	70.1	P/P	19 - 107
2318339	Chlorothalonil	129	157	P/P	10 - 245
2318339	Cis-Nonachlor	66.7	72.7	P/P	36 - 110
2318339	Cypermethrin	84.2	84.6	P/P	24 - 169
2318339	Dacthal	87.8	87.9	P/P	62 - 115
2318339	DDD-p,p'	73.0	73.2	P/P	36 - 109
2318339	DDE-p,p'	75.9	75.7	P/P	30 - 114
2318339	DDT-p,p'	80.7	80.5	P/P	42 - 108
2318339	Delta-BHC	126	131	P/P	60 - 164
2318339	Deltamethrin	60.7	63.2	P/P	10 - 210
2318339	Dichlobenil	61.3	56.2	P/P	23 - 108
2318339	Dicofol	77.1	76.2	P/P	44 - 109
2318339	Dieldrin	78.4	80.2	P/P	37 - 119
2318339	Endosulfan I	81.4	82.1	P/P	52 - 105
2318339	Endosulfan II	72.9	74.6	P/P	35 - 127
2318339	Endosulfan Sulfate	80.0	78.9	P/P	39 - 130
2318339	Endrin	79.1	78.6	P/P	30 - 116
2318339	Endrin Aldehyde	81.8	86.1	P/P	20 - 110
2318339	Endrin Ketone	96.2	140	P/F	48 - 134
2318339	Esfenvalerate	86.9	86.5	P/P	10 - 199
2318339	Ethalfuralin	86.9	87.4	P/P	48 - 95.0
2318339	Fenpropathrin	77.1	77.2	P/P	37 - 121
2318339	Gamma-BHC	99.1	104	P/P	61 - 126
2318339	Gamma-Chlordane	78.4	77.8	P/P	39 - 105
2318339	Heptachlor	76.0	75.7	P/P	38 - 96.0
2318339	Heptachlor Epoxide	96.8	94.0	P/P	42 - 114
2318339	Hexachlorobenzene	82.7	83.0	P/P	39 - 93.0
2318339	Kepone	58.0	68.3	P/P	10 - 215
2318339	Lambda-Cyhalothrin	72.8	75.6	P/P	10 - 204
2318339	Methoprene	71.0	72.1	P/P	17 - 108
2318339	Methoxychlor	98.5	97.3	P/P	56 - 115
2318339	MGK-264	82.1	79.5	P/P	35 - 120
2318339	Mirex	60.6	62.2	P/P	10 - 178
2318339	Oxychlordane	79.3	82.9	P/P	47 - 91.0
2318339	Permethrin	77.8	79.3	P/P	27 - 170
2318339	Phenothrin	65.1	66.4	P/P	10 - 133
2318339	Piperonyl Butoxide	93.3	96.5	P/P	23 - 150
2318339	Prallethrin	75.1	79.2	P/P	21 - 113
2318339	Tau-Fluvalinate	70.2	70.2	P/P	16 - 158
2318339	Tetramethrin	106	102	P/P	22 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P412338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318339	Trans-Nonachlor	72.5	76.1	P/P	43 - 102
2318339	Triclosan Methyl	79.6	80.2	P/P	49 - 109
2318339	Trifluralin	86.1	86.6	P/P	48 - 93.0
2318668	PCB-1016	85.4	82.1	P/P	46 - 110
2318668	PCB-1260	84.4	86.1	P/P	42 - 111

Reference Method: EPA 8276

Batch ID: P412338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318668	Chlordane	91.5	88.2	P/P	55 - 128
2318668	Toxaphene	90.1	90.5	P/P	57 - 211

Reference Method: EPA 8321B

Batch ID: P412352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318391	Acesulfame K	95.8	101	P/P	40 - 150
2318391	AMPA	80.2	91.9	P/P	40 - 150
2318391	Endothall	115	122	P/P	40 - 150
2318391	Glufosinate	110	112	P/P	40 - 150
2318391	Glyphosate	101	117	P/P	40 - 150
2318391	Sucralose	74.2	81.7	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P412370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318635	2,4-D	117	116	P/P	40 - 150
2318635	2,4,5-T	106	115	P/P	40 - 150
2318635	Acetaminophen	85.5	95.5	P/P	30 - 150
2318635	Acetamiprid	112	113	P/P	40 - 150
2318635	Afidopyropen	88.4	75.9	P/P	40 - 150
2318635	Bentazon	52.9	77.1	P/P	30 - 150
2318635	Benzovindiflupyr	91.0	81.7	P/P	40 - 150
2318635	Carbamazepine	112	121	P/P	40 - 150
2318635	Clothianidin	112	118	P/P	40 - 150
2318635	Dinotefuran	121	121	P/P	40 - 150
2318635	Diuron	72.1	66.9	P/P	40 - 150
2318635	Fenuron	80.2	82.5	P/P	40 - 150
2318635	Fluridone	87.0	71.3	P/P	40 - 150
2318635	Hydrocodone	92.4	105	P/P	40 - 150
2318635	Ibuprofen	94.5	95.9	P/P	40 - 150
2318635	Imazapyr	90.8	100	P/P	40 - 150
2318635	Imidacloprid	183	167	F/F	40 - 150
2318635	Linuron	71.4	78.1	P/P	40 - 150
2318635	Mandestrobin	90.6	98.8	P/P	40 - 150
2318635	MCPP	120	111	P/P	40 - 150
2318635	Naproxen	116	90.3	P/P	40 - 150
2318635	Primidone	189	118	F/P	40 - 150
2318635	Pyraclostrobin	79.9	76.5	P/P	40 - 150
2318635	Silvex	104	126	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P412370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318635	Thiamethoxam	173	165	F/F	40 - 150
2318635	Tolfenpyrad	59.3	60.5	P/P	30 - 150
2318635	Triclopyr	103	103	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P412811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2319759	Fluoride	99.1	97.7	P/P	92 - 107

Reference Method: SM 4500-F- C-2011
Batch ID: P413150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318659	Fluoride	96.8	97.7	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P412477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2318660	Organic Carbon	87.1	88.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P412330

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318623	Turbidity	6.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P412394

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318261	Calcium	1.90	Spike	P	0 - 20
2318261	Iron	0.366	Spike	P	0 - 20
2318261	Magnesium	1.35	Spike	P	0 - 20
2318261	Strontium	1.36	Spike	P	0 - 20
2318261	Tin	14.2	Spike	P	0 - 20
2318261	Titanium	3.70	Spike	P	0 - 20
2318261	Vanadium	0.135	Spike	P	0 - 20
2318261	Zinc	0.786	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P412394

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318261	Aluminum	5.23	Spike	P	0 - 20
2318261	Antimony	0.132	Spike	P	0 - 20
2318261	Arsenic	1.40	Spike	P	0 - 20
2318261	Beryllium	2.97	Spike	P	0 - 20
2318261	Cadmium	0.257	Spike	P	0 - 20
2318261	Chromium	0.0921	Spike	P	0 - 20
2318261	Cobalt	0.851	Spike	P	0 - 20
2318261	Copper	1.06	Spike	P	0 - 20
2318261	Lead	0.719	Spike	P	0 - 20
2318261	Manganese	0.138	Spike	P	0 - 20
2318261	Molybdenum	1.08	Spike	P	0 - 20
2318261	Nickel	0.597	Spike	P	0 - 20
2318261	Selenium	0.317	Spike	P	0 - 20
2318261	Silver	0.538	Spike	P	0 - 20
2318261	Thallium	1.09	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P412410

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318819	Ammonia-N	0.555	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412737

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318657	Kjeldahl Nitrogen	0.318	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P412825

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318238	Kjeldahl Nitrogen	3.64	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P412399

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318322	NO2NO3-N	2.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P412600

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318357	Total-P	1.11	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P412338

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318339	Aldrin	0.350	Spike	P	0 - 37
2318339	Alpha-BHC	1.23	Spike	P	0 - 16
2318339	Alpha-Chlordane	0.737	Spike	P	0 - 28
2318339	Beta-BHC	1.77	Spike	P	0 - 32
2318339	Beta-Cyfluthrin	1.25	Spike	P	0 - 41
2318339	Bifenthrin	2.92	Spike	P	0 - 36
2318339	Carbophenothion	1.29	Spike	P	0 - 81
2318339	Chlorothalonil	18.9	Spike	P	0 - 54
2318339	Cis-Nonachlor	8.63	Spike	P	0 - 33
2318339	Cypermethrin	0.458	Spike	P	0 - 38
2318339	Dacthal	0.0569	Spike	P	0 - 23
2318339	DDD-p,p'	0.340	Spike	P	0 - 35
2318339	DDE-p,p'	0.320	Spike	P	0 - 27
2318339	DDT-p,p'	0.186	Spike	P	0 - 31
2318339	Delta-BHC	4.15	Spike	P	0 - 30
2318339	Deltamethrin	4.11	Spike	P	0 - 76
2318339	Dichlobenil	8.80	Spike	P	0 - 33
2318339	Dicofol	1.15	Spike	P	0 - 24
2318339	Dieldrin	2.03	Spike	P	0 - 35
2318339	Endosulfan I	0.849	Spike	P	0 - 25
2318339	Endosulfan II	2.32	Spike	P	0 - 31
2318339	Endosulfan Sulfate	1.43	Spike	P	0 - 38
2318339	Endrin	0.626	Spike	P	0 - 53
2318339	Endrin Aldehyde	5.18	Spike	P	0 - 81
2318339	Endrin Ketone	37.4	Spike	F	0 - 33
2318339	Esfenvalerate	0.483	Spike	P	0 - 46
2318339	Ethalfuralin	0.606	Spike	P	0 - 22
2318339	Fenpropathrin	0.113	Spike	P	0 - 29
2318339	Gamma-BHC	4.68	Spike	P	0 - 17
2318339	Gamma-Chlordane	0.730	Spike	P	0 - 28

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P412338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318339	Heptachlor	0.488	Spike	P	0 - 28
2318339	Heptachlor Epoxide	2.89	Spike	P	0 - 23
2318339	Hexachlorobenzene	0.405	Spike	P	0 - 22
2318339	Kepone	5.54	Spike	P	0 - 61
2318339	Lambda-Cyhalothrin	3.76	Spike	P	0 - 52
2318339	Methoprene	1.49	Spike	P	0 - 38
2318339	Methoxychlor	1.20	Spike	P	0 - 29
2318339	MGK-264	3.23	Spike	P	0 - 41
2318339	Mirex	2.61	Spike	P	0 - 39
2318339	Oxychlordane	4.45	Spike	P	0 - 33
2318339	Permethrin	1.88	Spike	P	0 - 39
2318339	Phenothrin	2.08	Spike	P	0 - 52
2318339	Piperonyl Butoxide	3.38	Spike	P	0 - 91
2318339	Prallethrin	5.33	Spike	P	0 - 34
2318339	Tau-Fluvalinate	0.0401	Spike	P	0 - 41
2318339	Tetramethrin	3.60	Spike	P	0 - 43
2318339	Trans-Nonachlor	4.79	Spike	P	0 - 31
2318339	Triclosan Methyl	0.745	Spike	P	0 - 24
2318339	Trifluralin	0.503	Spike	P	0 - 23
2318668	PCB-1016	3.95	Spike	P	0 - 32
2318668	PCB-1260	2.02	Spike	P	0 - 31

Reference Method: EPA 8276

Batch ID: P412338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318668	Chlordane	3.63	Spike	P	0 - 25
2318668	Toxaphene	0.501	Spike	P	0 - 24

Reference Method: EPA 8321B

Batch ID: P412352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318391	Acesulfame K	4.94	Spike	P	0 - 30
2318391	AMPA	12.5	Spike	P	0 - 30
2318391	Endothall	5.70	Spike	P	0 - 30
2318391	Glufosinate	1.81	Spike	P	0 - 30
2318391	Glyphosate	14.5	Spike	P	0 - 30
2318391	Sucralose	9.25	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P412370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318635	2,4-D	0.113	Spike	P	0 - 30
2318635	2,4,5-T	7.72	Spike	P	0 - 30
2318635	Acetaminophen	11.1	Spike	P	0 - 30
2318635	Acetamiprid	1.04	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P412370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318635	Afidopyropen	15.2	Spike	P	0 - 30
2318635	Bentazon	22.1	Spike	P	0 - 30
2318635	Benzovindiflupyr	10.7	Spike	P	0 - 30
2318635	Carbamazepine	7.34	Spike	P	0 - 30
2318635	Clothianidin	5.34	Spike	P	0 - 30
2318635	Dinotefuran	0.630	Spike	P	0 - 30
2318635	Diuron	7.49	Spike	P	0 - 30
2318635	Fenuron	2.87	Spike	P	0 - 30
2318635	Fluridone	14.6	Spike	P	0 - 30
2318635	Hydrocodone	12.4	Spike	P	0 - 30
2318635	Ibuprofen	1.45	Spike	P	0 - 30
2318635	Imazapyr	7.20	Spike	P	0 - 30
2318635	Imidacloprid	8.73	Spike	P	0 - 30
2318635	Linuron	8.98	Spike	P	0 - 30
2318635	Mandestrobin	8.70	Spike	P	0 - 30
2318635	MCPP	7.89	Spike	P	0 - 30
2318635	Naproxen	25.0	Spike	P	0 - 30
2318635	Primidone	46.2	Spike	F	0 - 30
2318635	Pyraclostrobin	4.37	Spike	P	0 - 30
2318635	Silvex	19.4	Spike	P	0 - 30
2318635	Thiamethoxam	4.96	Spike	P	0 - 30
2318635	Tolfenpyrad	1.99	Spike	P	0 - 30
2318635	Triclopyr	0.0367	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P412808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Total Alkalinity	3.36	Sample	P	0 - 5.2

Reference Method: SM 4500-F- C-2011

Batch ID: P412811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2319759	Fluoride	0.953	Spike	P	0 - 2.1

Reference Method: SM 4500-F- C-2011

Batch ID: P413150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318659	Fluoride	0.520	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P412477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2318660	Organic Carbon	1.12	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2318668
Field Sample ID: G5SE0079

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	81.6	P	38 - 115
EPA 8270E	Decachlorobiphenyl	94.6	P	31 - 118
EPA 8270E	Tetrachloro-m-xylene	74.8	P	29 - 98.0
EPA 8270E	Tetrachloro-m-xylene	73.4	P	28 - 96.0
EPA 8276	Decachlorobiphenyl	82.4	P	30 - 97.0
EPA 8276	PCNB	80.4	P	45 - 119

Lab Sample ID: 2318669
Field Sample ID: G5SE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	63.0	P	38 - 115
EPA 8270E	Decachlorobiphenyl	93.9	P	31 - 118
EPA 8270E	Tetrachloro-m-xylene	77.8	P	29 - 98.0
EPA 8270E	Tetrachloro-m-xylene	77.6	P	28 - 96.0
EPA 8276	Decachlorobiphenyl	79.4	P	30 - 97.0
EPA 8276	PCNB	80.9	P	45 - 119

Lab Sample ID: 2318670
Field Sample ID: G5SE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	109	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	66.5	P	30 - 160
EPA 8321B	Endothall-d6	102	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	48.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	110	P	30 - 160
EPA 8321B	Primidone-d5	135	P	30 - 160
EPA 8321B	Sucralose-d6	68.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A111457

Included Lab Sample IDs: 2318655, 2318656, 2318659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A111492

Included Lab Sample IDs: 2318657, 2318658, 2318660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A111496

Included Lab Sample IDs: 2318657, 2318658, 2318660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A111518

Included Lab Sample IDs: 2318657, 2318658, 2318660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	93.0	P/P	90 - 110
Organic Carbon	98.0	94.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111539

Included Lab Sample IDs: 2318676, 2318677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	98.6	P/P	90 - 110
Aluminum	101	103	P/P	90 - 110
Antimony	98.2	98.5	P/P	90 - 110
Antimony	98.5	99.3	P/P	90 - 110
Arsenic	102	102	P/P	90 - 110
Arsenic	102	103	P/P	90 - 110
Beryllium	97.0	97.1	P/P	90 - 110
Beryllium	97.1	96.9	P/P	90 - 110
Cadmium	96.7	97.2	P/P	90 - 110
Cadmium	97.2	96.9	P/P	90 - 110
Chromium	95.7	97.4	P/P	90 - 110
Chromium	96.7	95.7	P/P	90 - 110
Copper	103	103	P/P	90 - 110
Copper	103	104	P/P	90 - 110
Lead	98.0	97.8	P/P	90 - 110
Lead	98.7	98.0	P/P	90 - 110
Manganese	96.4	98.0	P/P	90 - 110
Manganese	97.8	96.4	P/P	90 - 110
Molybdenum	97.8	98.1	P/P	90 - 110
Molybdenum	98.1	97.8	P/P	90 - 110
Nickel	104	105	P/P	90 - 110
Nickel	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111539

Included Lab Sample IDs: 2318676, 2318677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	97.3	97.4	P/P	90 - 110
Selenium	97.4	99.0	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	96.5	96.6	P/P	90 - 110
Thallium	97.5	96.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A111562

Included Lab Sample IDs: 2318676, 2318677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	101	105	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A111588

Included Lab Sample IDs: 2318668, 2318669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.8		P	80 - 120
Chlordane	97.7		P	80 - 120
Toxaphene	104		P	80 - 120
Toxaphene	95.8		P	80 - 120

Reference Method: EPA 8270E

Run ID: A111594

Included Lab Sample IDs: 2318668, 2318669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	98.7		P	80 - 120
Alpha-BHC	99.5		P	80 - 120
Alpha-Chlordane	95.6		P	80 - 120
Beta-BHC	99.3		P	80 - 120
Beta-Cyfluthrin	92.9		P	80 - 120
Bifenthrin	93.9		P	80 - 120
Carbophenothion	95.2		P	80 - 120
Chlorothalonil	112		P	80 - 120
Cis-Nonachlor	96.4		P	80 - 120
Cypermethrin	95.3		P	80 - 120
Dacthal	96.6		P	80 - 120
DDD-p,p'	96.4		P	80 - 120
DDE-p,p'	98.1		P	80 - 120
DDT-p,p'	100		P	80 - 120
Delta-BHC	103		P	80 - 120
Deltamethrin	93.8		P	80 - 120
Dichlobenil	95.5		P	80 - 120
Dicofol	93.5		P	80 - 120
Dieldrin	94.3		P	80 - 120
Endosulfan I	100		P	80 - 120
Endosulfan II	97.4		P	80 - 120
Endosulfan Sulfate	100		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A111594

Included Lab Sample IDs: 2318668, 2318669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endrin	99.9		P	80 - 120
Endrin Aldehyde	91.8		P	80 - 120
Endrin Ketone	103		P	80 - 120
Esfenvalerate	96.8		P	80 - 120
Ethalfuralin	97.8		P	80 - 120
Fenpropathrin	95.8		P	80 - 120
Gamma-BHC	100		P	80 - 120
Gamma-Chlordane	97.2		P	80 - 120
Heptachlor	99.2		P	80 - 120
Heptachlor Epoxide	98.4		P	80 - 120
Hexachlorobenzene	99.3		P	80 - 120
Kepone	110		P	80 - 120
Lambda-Cyhalothrin	92.8		P	80 - 120
Methoprene	97.4		P	80 - 120
Methoxychlor	99.5		P	80 - 120
MGK-264	94.4		P	80 - 120
Mirex	97.6		P	80 - 120
Oxychlordane	99.1		P	80 - 120
Permethrin	95.6		P	80 - 120
Phenothrin	94.5		P	80 - 120
Piperonyl Butoxide	93.7		P	80 - 120
Prallethrin	99.5		P	80 - 120
Tau-Fluvalinate	94.7		P	80 - 120
Tetramethrin	95.0		P	80 - 120
Trans-Nonachlor	96.7		P	80 - 120
Triclosan Methyl	97.3		P	80 - 120
Trifluralin	99.7		P	80 - 120

Reference Method: EPA 8321B

Run ID: A111604

Included Lab Sample IDs: 2318670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	83.0	81.5	P/P	60 - 160
Sucralose	70.7	77.2	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A111607

Included Lab Sample IDs: 2318670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.7	86.7	P/P	60 - 160
Endothall	104	101	P/P	60 - 160
Glufosinate	84.2	92.7	P/P	60 - 160
Glyphosate	109	105	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111618

Included Lab Sample IDs: 2318676, 2318677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
-----------	---------	---------	------------	----------------

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A111618

Included Lab Sample IDs: 2318676, 2318677

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	105	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Strontium	101	101	P/P	90 - 110
Tin	99.0	101	P/P	90 - 110
Titanium	102	102	P/P	90 - 110
Vanadium	102	102	P/P	90 - 110
Zinc	102	104	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A111632

Included Lab Sample IDs: 2318668, 2318669

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	97.0		P	80 - 120
PCB-1260	97.8		P	80 - 120

Reference Method: EPA 8321B

Run ID: A111642

Included Lab Sample IDs: 2318670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	99.8	101	P/P	50 - 150
2,4,5-T	102	93.4	P/P	50 - 150
Acetaminophen	90.5	81.8	P/P	60 - 160
Acetamiprid	103	108	P/P	50 - 150
Afidopyropen	117	113	P/P	50 - 150
Bentazon	87.7	108	P/P	50 - 160
Benzovindiflupyr	105	105	P/P	50 - 150
Carbamazepine	94.2	83.9	P/P	60 - 150
Clothianidin	105	110	P/P	60 - 150
Dinotefuran	94.4	85.9	P/P	50 - 150
Diuron	97.3	99.0	P/P	60 - 160
Fenuron	92.2	89.0	P/P	60 - 150
Fluridone	92.9	94.8	P/P	60 - 160
Hydrocodone	98.9	90.0	P/P	60 - 150
Ibuprofen	142	139	P/P	50 - 160
Imazapyr	103	125	P/P	50 - 150
Imidacloprid	95.0	89.3	P/P	60 - 150
Linuron	80.8	84.0	P/P	60 - 150
Mandestrobin	103	95.9	P/P	50 - 150
MCPP	109	112	P/P	50 - 150
Naproxen	73.3	92.9	P/P	50 - 160
Primidone	62.8	88.6	P/P	60 - 150
Pyraclostrobin	91.1	97.3	P/P	60 - 150
Silvex	107	106	P/P	50 - 150
Thiamethoxam	100	102	P/P	50 - 150
Tolfenpyrad	113	64.8	P/P	60 - 150
Triclopyr	83.4	111	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A111656

Included Lab Sample IDs: 2318655, 2318656, 2318659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	98.2	P/P	90 - 110
Total Alkalinity	98.2	95.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111656

Included Lab Sample IDs: 2318655, 2318656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A111662

Included Lab Sample IDs: 2318657, 2318658, 2318660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111674

Included Lab Sample IDs: 2318657, 2318658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	95.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A111752

Included Lab Sample IDs: 2318660

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	98.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A111807

Included Lab Sample IDs: 2318659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	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 180.1 Rev. 2.0	Turbidity	96.6				6.67	
EPA 200.7 Rev. 4.4	Calcium	107					1.90
	Iron	110	104	105			0.366
	Magnesium	104					1.35
	Strontium	104					1.36
	Tin	102	77.6	89.5			14.2
	Titanium	106	86.0	90.4			3.70
	Vanadium	99.1	101	101			0.135
	Zinc	105	100	101			0.786
EPA 200.8 Rev. 5.4	Aluminum	103	119	126			5.23
	Antimony	101	101	101			0.132
	Arsenic	102	115	117			1.40
	Beryllium	94.0	108	105			2.97
	Cadmium	100	94.9	94.6			0.257
	Chromium	98.4	103	102			0.0921
	Cobalt	103	114	115			0.851
	Copper	98.6	109	110			1.06
	Lead	103	110	111			0.719
	Manganese	99.6	98.5	98.6			0.138
	Molybdenum	101	115	116			1.08
	Nickel	100	119	120			0.597
	Selenium	99.0	103	103			0.317
	Silver	105	95.7	95.2			0.538
	Thallium	105	111	112			1.09
EPA 350.1 Rev. 2.0	Ammonia-N	94.4	99.6	100			0.555
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.4	103	102			0.318
	Kjeldahl Nitrogen	95.1	102	108			3.64
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	98.0	100			2.02
EPA 365.1 Rev. 2.0	Total-P	99.6	98.8	97.7			1.11
EPA 8270E	Aldrin	47.4	64.4	64.7			0.350
	Alpha-BHC	96.4	94.2	95.4			1.23
	Alpha-Chlordane	78.6	72.7	72.2			0.737
	Beta-BHC	102	118	120			1.77
	Beta-Cyfluthrin	65.1	78.7	79.6			1.25
	Bifenthrin	47.0	61.7	63.5			2.92
	Carbophenothion	47.1	71.0	70.1			1.29
	Chlorothalonil	47.8	129	157			18.9
	Cis-Nonachlor	67.6	66.7	72.7			8.63
	Cypermethrin	65.6	84.2	84.6			0.458
	Dacthal	89.4	87.8	87.9			0.0569
	DDD-p,p'	73.4	73.0	73.2			0.340
	DDE-p,p'	74.6	75.9	75.7			0.320
	DDT-p,p'	74.1	80.7	80.5			0.186
	Delta-BHC	107	126	131			4.15
	Deltamethrin	76.5	60.7	63.2			4.11
	Dichlobenil	89.7	61.3	56.2			8.80
	Dicofol	72.3	77.1	76.2			1.15
	Dieldrin	76.7	78.4	80.2			2.03
	Endosulfan I	80.2	81.4	82.1			0.849
	Endosulfan II	78.0	72.9	74.6			2.32
	Endosulfan Sulfate	87.7	80.0	78.9			1.43
	Endrin	77.6	79.1	78.6			0.626
	Endrin Aldehyde	100	81.8	86.1			5.18
	Endrin Ketone	103	96.2	140			37.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Esfenvalerate	67.4	86.9	86.5			0.483
	Ethalfuralin	80.1	86.9	87.4			0.606
	Fenpropathrin	60.8	77.1	77.2			0.113
	Gamma-BHC	94.4	99.1	104			4.68
	Gamma-Chlordane	72.7	78.4	77.8			0.730
	Heptachlor	70.4	76.0	75.7			0.488
	Heptachlor Epoxide	92.6	96.8	94.0			2.89
	Hexachlorobenzene	73.7	82.7	83.0			0.405
	Kepone	108	58.0	68.3			5.54
	Lambda-Cyhalothrin	51.3	72.8	75.6			3.76
	Methoprene	48.8	71.0	72.1			1.49
	Methoxychlor	85.4	98.5	97.3			1.20
	MGK-264	72.4	82.1	79.5			3.23
	Mirex	52.9	60.6	62.2			2.61
	Oxychlordane	78.6	79.3	82.9			4.45
	PCB-1016	83.8	85.4	82.1			3.95
	PCB-1260	101	84.4	86.1			2.02
	Permethrin	64.6	77.8	79.3			1.88
	Phenothrin	39.8	65.1	66.4			2.08
	Piperonyl Butoxide	96.3	93.3	96.5			3.38
	Prallethrin	69.6	75.1	79.2			5.33
	Tau-Fluvalinate	52.4	70.2	70.2			0.0401
	Tetramethrin	86.5	106	102			3.60
	Trans-Nonachlor	66.6	72.5	76.1			4.79
	Triclosan Methyl	78.9	79.6	80.2			0.745
	Trifluralin	75.6	86.1	86.6			0.503
EPA 8276	Chlordane	96.4	91.5	88.2			3.63
	Toxaphene	81.2	90.1	90.5			0.501
EPA 8321B	2,4-D	111	117	116			0.113
	2,4,5-T	99.3	106	115			7.72
	Acesulfame K	86.5	95.8	101			4.94
	Acetaminophen	65.5	85.5	95.5			11.1
	Acetamiprid	95.4	112	113			1.04
	Afidopyropen	61.6	88.4	75.9			15.2
	AMPA	99.5	80.2	91.9			12.5
	Bentazon	101	52.9	77.1			22.1
	Benzovindiflupyr	82.8	91.0	81.7			10.7
	Carbamazepine	95.2	112	121			7.34
	Clothianidin	102	112	118			5.34
	Dinotefuran	80.8	121	121			0.630
	Diuron	90.1	72.1	66.9			7.49
	Endothall	114	115	122			5.70
	Fenuron	84.4	80.2	82.5			2.87
	Fluridone	77.8	87.0	71.3			14.6
	Glufosinate	109	110	112			1.81
	Glyphosate	127	101	117			14.5
	Hydrocodone	92.8	92.4	105			12.4
	Ibuprofen	149	94.5	95.9			1.45
	Imazapyr	132	90.8	100			7.20
	Imidacloprid	91.3	183	167			8.73
	Linuron	86.9	71.4	78.1			8.98
	Mandestrobin	82.7	90.6	98.8			8.70
	MCPP	106	120	111			7.89
	Naproxen	119	116	90.3			25.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8321B	Primidone	124	189	118		46.2
	Pyraclostrobin	72.7	79.9	76.5		4.37
	Silvex	106	104	126		19.4
	Sucralose	78.2	74.2	81.7		9.25
	Thiamethoxam	97.5	173	165		4.96
	Tolfenpyrad	40.3	59.3	60.5		1.99
	Triclopyr	95.5	103	103		0.0367
SM 2320 B-2011	Total Alkalinity	97.7				3.36
SM 4500-F- C-2011	Fluoride	101	99.1	97.7		0.953
	Fluoride	99.6	96.8	97.7		0.520
SM 5310 B-2011	Organic Carbon	97.6	87.1	88.4		1.12

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2318655, 2318656, 2318659
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2318676, 2318677
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2318676, 2318677
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2318657, 2318658, 2318660
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2318657, 2318658, 2318660
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2318657, 2318658, 2318660
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2318657, 2318658, 2318660
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2318668, 2318669
EPA 8270E	PCBs in water matrices by GC/MS/MS	2318668, 2318669
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2318668, 2318669
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2318670
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2318655, 2318656, 2318659
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2318655, 2318656, 2318659
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2318655, 2318656, 2318659
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2318657, 2318658, 2318660

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/13/2022			04/13/2022 14:12	Khloe J Berg	2318655
	04/13/2022			04/13/2022 14:13	Khloe J Berg	2318656
	04/13/2022			04/13/2022 14:14	Khloe J Berg	2318659
EPA 200.7 Rev. 4.4	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/22/2022 00:10	Josef B Mick	2318676
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/22/2022 00:18	Josef B Mick	2318676
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/22/2022 00:26	Josef B Mick	2318677
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/22/2022 00:34	Josef B Mick	2318677
EPA 200.8 Rev. 5.4	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/18/2022 19:04	Alexander Thompson	2318676
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/18/2022 20:12	Alexander Thompson	2318677
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/18/2022 21:00	Alexander Thompson	2318676
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/18/2022 22:17	Alexander Thompson	2318677
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/19/2022 13:21	Alexander Thompson	2318676
	04/13/2022	04/15/2022 09:45	Megan Whitefoot	04/19/2022 13:27	Alexander Thompson	2318677
EPA 350.1 Rev. 2.0	04/13/2022			04/15/2022 11:31	Ping Hua	2318657
	04/13/2022			04/15/2022 11:32	Ping Hua	2318658
	04/13/2022			04/15/2022 11:33	Ping Hua	2318660
EPA 351.2 Rev. 2.0	04/13/2022	04/22/2022 08:58	Samantha L Bates	04/25/2022 16:10	Samantha L Bates	2318657
	04/13/2022	04/22/2022 08:58	Samantha L Bates	04/25/2022 16:15	Samantha L Bates	2318658
	04/13/2022	04/26/2022 16:44	Samantha L Bates	04/27/2022 13:16	Samantha L Bates	2318660
EPA 353.2 Rev. 2.0	04/13/2022			04/14/2022 16:37	Nathaniel J Jones	2318657
	04/13/2022			04/14/2022 16:38	Nathaniel J Jones	2318658
	04/13/2022			04/14/2022 16:39	Nathaniel J Jones	2318660
EPA 365.1 Rev. 2.0	04/13/2022	04/21/2022 17:55	Simonne.V. Calhoun	04/22/2022 16:16	Sarah A Nixon	2318657
	04/13/2022	04/21/2022 17:55	Simonne.V. Calhoun	04/22/2022 16:17	Sarah A Nixon	2318658
	04/13/2022	04/21/2022 17:55	Simonne.V. Calhoun	04/22/2022 16:18	Sarah A Nixon	2318660
EPA 8270E	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/18/2022 21:33	Julie Wi	2318668
	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/19/2022 01:06	Julie Wi	2318669
	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/19/2022 22:40	Vandana T. Nagar	2318668
	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/19/2022 23:09	Vandana T. Nagar	2318669
EPA 8276	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/20/2022 02:26	Arthur Maknenko	2318668
	04/13/2022	04/15/2022 08:00	Rasheda Ghaffari	04/20/2022 14:28	Arthur Maknenko	2318669
EPA 8321B	04/13/2022	04/14/2022 11:00	Manjita Shrestha	04/15/2022 21:26	Manjita Shrestha	2318670
	04/13/2022	04/14/2022 11:00	Manjita Shrestha	04/15/2022 21:30	Manjita Shrestha	2318670
	04/13/2022	04/14/2022 11:00	Manjita Shrestha	04/16/2022 07:08	Manjita Shrestha	2318670
	04/13/2022	04/15/2022 08:30	Hoor Shaik	04/16/2022 22:46	Juyoung Kim	2318670
SM 2320 B-2011	04/13/2022			04/22/2022 09:21	Sarah A Nixon	2318655
	04/13/2022			04/22/2022 09:35	Sarah A Nixon	2318656
	04/13/2022			04/22/2022 10:30	Sarah A Nixon	2318659
SM 2540 D-2011	04/13/2022			04/18/2022 15:45	Yijie Li	2318655, 2318656, 2318659
SM 4500-F- C-2011	04/13/2022			04/22/2022 13:33	Sarah A Nixon	2318655

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	04/13/2022			04/22/2022 13:38	Sarah A Nixon	2318656
	04/13/2022			04/29/2022 01:25	Dale L. Simmons	2318659
SM 5310 B-2011	04/13/2022			04/15/2022 22:57	Judith K. Clark	2318660
	04/13/2022			04/16/2022 01:48	Judith K. Clark	2318657
	04/13/2022			04/16/2022 02:03	Judith K. Clark	2318658