

Chemical Analysis Report

TLH-ROC-2022-01-13-01

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

Event Description: **Run 5**
Request ID: **RQ-2022-01-03-55**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 03-FEB-2022 14:20

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored 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, 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: Bailey Mill Creek @ Wilson Rd

Collection Date/Time: 01/13/2022 10:00

Field ID: G1TLHR0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2299719	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P408515	
	EPA 300.0 Rev. 2.1	Chloride	7.9		mg Cl/L	P409186	
		Sulfate	0.20	U	mg SO4/L	P409192	
	SM 2120 B-2011	Color (true)**	84		PCU	P408518	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P408794	
	SM 2540 C-2011	TDS	99		mg/L	P408978	
	SM 2540 D-2011	TSS	2	I	mg/L	P408951	
	SM 4500 F-C-2011	Fluoride	0.059	I	mg F/L	P408797	
2299720	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P409022	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P408850	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P408733	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P408651	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P408958	
2299721	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.015		mg P/L	P408507	
2299726	EPA 8321B	2,4-D	0.0020	U	ug/L	P408581	
		Acesulfame K	0.10	U	ug/L	P408582	
		2,4,5-T	0.0040	U	ug/L	P408581	
		AMPA	0.10	U	ug/L	P408582	MS
		Acetaminophen	0.0080	U	ug/L	P408581	
		Acetamiprid	0.0020	U	ug/L	P408581	
		Endothall	0.25	U	ug/L	P408582	MS
		Glufosinate	0.10	U	ug/L	P408582	
		Glyphosate	0.10	U	ug/L	P408582	
		Afidopyrophen	0.0020	U	ug/L	P408581	
		Bentazon	8.0E-04	U	ug/L	P408581	
		Sucralose	0.024	I	ug/L	P408582	MS
		Benzovindiflupyr	0.0020	U	ug/L	P408581	
		Carbamazepine	8.0E-04	U	ug/L	P408581	
		Clothianidin	0.0020	U	ug/L	P408581	MS
		Dinotefuran	0.0020	U	ug/L	P408581	
		Diuron	0.0020	U	ug/L	P408581	
		Fenuron	0.016	U	ug/L	P408581	
		Fluridone	8.0E-04	U	ug/L	P408581	
		Imazapyr	0.066		ug/L	P408581	
		Hydrocodone	0.0020	U	ug/L	P408581	
		Ibuprofen	0.020	U	ug/L	P408581	
		Imidacloprid	0.0020	U	ug/L	P408581	MS
		Linuron	0.0040	U	ug/L	P408581	
		Mandestrobin	0.0020	U	ug/L	P408581	
		MCP	0.0040	U	ug/L	P408581	
		Naproxen	0.0080	U	ug/L	P408581	
		Primidone	0.0040	U	ug/L	P408581	RPD
		Pyraclostrobin	0.0020	U	ug/L	P408581	

Field ID: G1TLHR0081

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2299726	EPA 8321B	Silvex	0.0040	U	ug/L	P408581	
		Thiamethoxam	0.0020	U	ug/L	P408581	MS
		Tolfenpyrad	0.0020	U	ug/L	P408581	
		Triclopyr	0.0040	U	ug/L	P408581	
2299728	EPA 200.7 Rev. 4.4	Calcium	25.3		mg/L	P408710	
		Iron	240		ug/L	P408710	
		Magnesium	3.35		mg/L	P408710	
		Potassium	0.43	I	mg/L	P408710	
		Sodium	3.8		mg/L	P408710	
		Strontium	24.0		ug/L	P408710	
		Tin	3.7	I	ug/L	P408710	
		Titanium	1.0	I	ug/L	P408710	
		Vanadium	2.0	U	ug/L	P408710	
		Zinc	5.0	U	ug/L	P408710	
	EPA 200.8 Rev. 5.4	Aluminum	43		ug/L	P408710	
		Antimony	0.050	U	ug/L	P408710	
		Arsenic	0.17	I	ug/L	P408710	
		Barium	6.70		ug/L	P408710	
		Beryllium	0.010	U	ug/L	P408710	
		Boron**	11.2		ug/L	P408710	
		Cadmium	0.020	U	ug/L	P408710	
		Chromium	0.40	U	ug/L	P408710	
		Cobalt	0.066	I	ug/L	P408710	
		Copper	0.40	U	ug/L	P408710	
	SM 2340B	Lead	0.20	U	ug/L	P408710	
		Manganese	10.7		ug/L	P408710	
		Molybdenum	0.15	U	ug/L	P408710	
		Nickel	0.50	U	ug/L	P408710	
		Selenium	0.20	U	ug/L	P408710	
		Silver	0.010	U	ug/L	P408710	
		Thallium	0.10	U	ug/L	P408710	
		Hardness	77.0		mg/L	P408710	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 8321B: MS accuracy for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese are unavailable because of high analyte concentration in the QC sample.

Sample Location: Moore Branch @ Cody Church Rd

Collection Date/Time: 01/13/2022 11:00

Field ID: G1TLHR0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2299725	EPA 8270E	Aldrin	0.75	U	ng/L	P408463	
		Alpha-BHC	0.12	U	ng/L	P408463	
		Alpha-Chlordane	0.23	U	ng/L	P408463	
		Beta-BHC	0.12	U	ng/L	P408463	
		Beta-Cyfluthrin**	1.4	U	ng/L	P408463	
		Bifenthrin**	0.58	U	ng/L	P408463	
		Carbophenothion	1.0	U	ng/L	P408463	
		Chlorothalonil	1.4	U	ng/L	P408463	
		Cis-Nonachlor**	0.23	U	ng/L	P408463	
		Cypermethrin	1.7	U	ng/L	P408463	
		Dacthal**	0.17	U	ng/L	P408463	
		DDD-p,p'	0.29	U	ng/L	P408463	
		DDE-p,p'	0.23	U	ng/L	P408463	
		DDT-p,p'	0.29	U	ng/L	P408463	
		Delta-BHC	0.46	U	ng/L	P408463	
		Deltamethrin**	1.4	U	ng/L	P408463	
		Dichlobenil**	0.29	U	ng/L	P408463	RPD
		Dicofol	1.4	U	ng/L	P408463	
		Dieldrin	0.46	U	ng/L	P408463	
		Endosulfan I	0.46	U	ng/L	P408463	
		Endosulfan II	0.46	U	ng/L	P408463	
		Endosulfan Sulfate	0.35	U	ng/L	P408463	
		Endrin	0.46	U	ng/L	P408463	
		Endrin Aldehyde	0.86	U	ng/L	P408463	
		Endrin Ketone	0.46	U	ng/L	P408463	
		Esfenvalerate**	0.86	U	ng/L	P408463	
		Ethalfuralin**	0.17	U	ng/L	P408463	
		Fenpropathrin**	0.29	U	ng/L	P408463	
		Gamma-BHC	0.14	U	ng/L	P408463	
		Gamma-Chlordane	0.23	U	ng/L	P408463	
		Heptachlor	0.23	U	ng/L	P408463	
		Heptachlor Epoxide	0.29	U	ng/L	P408463	
		Hexachlorobenzene	1.2	U	ng/L	P408463	
		Kepone**	5.8	UJ	ng/L	P408463	CCV
		Lambda-Cyhalothrin**	0.86	U	ng/L	P408463	
		Methoprene**	0.86	U	ng/L	P408463	
		Methoxychlor	0.35	U	ng/L	P408463	
		MGK-264**	0.23	U	ng/L	P408463	
		Mirex	0.81	U	ng/L	P408463	
		Oxychlordane**	0.35	U	ng/L	P408463	
		Permethrin	1.8	U	ng/L	P408463	
		Phenothrin**	1.0	U	ng/L	P408463	
		Piperonyl Butoxide**	0.17	UJ	ng/L	P408463	CCV
		Prallethrin**	2.3	U	ng/L	P408463	

Field ID: G1TLHR0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2299725	EPA 8270E	Tau-Fluvalinate**	0.29	U	ng/L	P408463	
		Tetramethrin**	0.86	UJ	ng/L	P408463	CCV
		Trans-Nonachlor**	0.23	U	ng/L	P408463	
		Triclosan Methyl**	0.17	U	ng/L	P408463	
		Trifluralin	0.23	U	ng/L	P408463	
	EPA 8276	Chlordane	2.9	U	ng/L	P408463	
		Toxaphene	17	U	ng/L	P408463	
2299727	EPA 200.7 Rev. 4.4	Calcium	1.25		mg/L	P408710	
		Iron	390		ug/L	P408710	
		Magnesium	0.84		mg/L	P408710	
		Potassium	0.30	U	mg/L	P408710	
		Sodium	3.1		mg/L	P408710	
		Strontium	6.3	I	ug/L	P408710	
		Tin	3.0	U	ug/L	P408710	
		Titanium	1.9	I	ug/L	P408710	
		Vanadium	2.0	U	ug/L	P408710	
		Zinc	5.0	U	ug/L	P408710	
	EPA 200.8 Rev. 5.4	Aluminum	277		ug/L	P408710	
		Antimony	0.050	U	ug/L	P408710	
		Arsenic	0.15	I	ug/L	P408710	
		Barium	10.4		ug/L	P408710	
		Beryllium	0.029	I	ug/L	P408710	
		Boron**	10.4		ug/L	P408710	
		Cadmium	0.020	U	ug/L	P408710	
		Chromium	0.45	I	ug/L	P408710	
		Cobalt	0.136		ug/L	P408710	
		Copper	0.40	U	ug/L	P408710	
		Lead	0.20	U	ug/L	P408710	
		Manganese	61.7		ug/L	P408710	
		Molybdenum	0.15	U	ug/L	P408710	
		Nickel	0.50	U	ug/L	P408710	
		Selenium	0.20	U	ug/L	P408710	
		Silver	0.010	U	ug/L	P408710	
		Thallium	0.10	U	ug/L	P408710	
	SM 2340B	Hardness	6.6		mg/L	P408710	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for manganese 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: P408515

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408710

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: P408710

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 300.0 Rev. 2.1
Batch ID: P409186

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409192

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409022

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408850

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408733

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408651

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408507

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: EPA 8270E
Batch ID: P408463

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P408463

Component	Result	Code	Units
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P408463

Component	Result	Code	Units
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
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: P408463

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: P408581

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P408581

Component	Result	Code	Units
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: EPA 8321B

Batch ID: P408582

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: SM 2120 B-2011

Batch ID: P408518

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P408794

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

Reference Method: SM 2540 C-2011

Batch ID: P408978

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P408951

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P408958

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P408710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	103		P	85 - 115
Sodium	102		P	85 - 115
Strontium	104		P	85 - 115
Tin	108		P	85 - 115
Titanium	107		P	85 - 115
Vanadium	106		P	85 - 115
Zinc	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408710

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	99.2		P	85 - 115
Arsenic	102		P	85 - 115
Barium	105		P	85 - 115
Beryllium	102		P	85 - 115
Boron	97.6		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	102		P	85 - 115
Cobalt	99.3		P	85 - 115
Copper	102		P	85 - 115
Lead	95.5		P	85 - 115
Manganese	100		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	103		P	85 - 115
Selenium	99.7		P	85 - 115
Silver	102		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409186

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409022

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408850

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	100		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	104		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408651

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408507

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 8270E
Batch ID: P408463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	58.8		P	10 - 93.0
Alpha-BHC	94.8		P	75 - 106
Alpha-Chlordane	84.4		P	50 - 109
Beta-BHC	109		P	65 - 135
Beta-Cyfluthrin	74.1		P	23 - 167
Bifenthrin	57.6		P	11 - 123
Carbophenothion	49.4		P	18 - 96.0
Chlorothalonil	84.8		P	26 - 182
Cis-Nonachlor	76.9		P	40 - 111
Cypermethrin	83.3		P	25 - 155
Dacthal	98.1		P	73 - 112
DDD-p,p'	85.2		P	47 - 108
DDE-p,p'	77.6		P	48 - 107
DDT-p,p'	75.5		P	49 - 111
Delta-BHC	112		P	68 - 143
Deltamethrin	84.1		P	16 - 176
Dichlobenil	96.5		P	32 - 113
Dicofol	77.3		P	50 - 108
Dieldrin	84.1		P	56 - 110
Endosulfan I	84.3		P	60 - 105
Endosulfan II	89.0		P	50 - 120
Endosulfan Sulfate	95.0		P	55 - 121
Endrin	84.3		P	35 - 117
Endrin Aldehyde	84.9		P	36 - 116
Endrin Ketone	123		P	56 - 130
Esfenvalerate	66.6		P	10 - 179
Ethalfuralin	78.3		P	49 - 99.0
Fenpropathrin	76.0		P	35 - 119

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P408463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Gamma-BHC	101		P	72 - 115
Gamma-Chlordane	79.1		P	45 - 107
Heptachlor	72.6		P	41 - 100
Heptachlor Epoxide	90.8		P	58 - 106
Hexachlorobenzene	78.2		P	39 - 100
Kepone	134		P	10 - 191
Lambda-Cyhalothrin	68.6		P	10 - 186
Methoprene	47.0		P	10 - 129
Methoxychlor	94.9		P	61 - 111
MGK-264	85.8		P	20 - 123
Mirex	53.1		P	10 - 182
Oxychlordane	78.1		P	39 - 110
Permethrin	75.2		P	26 - 152
Phenothrin	47.3		P	10 - 109
Piperonyl Butoxide	96.1		P	27 - 142
Prallethrin	67.7		P	14 - 109
Tau-Fluvalinate	65.0		P	16 - 134
Tetramethrin	83.6		P	10 - 125
Trans-Nonachlor	78.7		P	45 - 107
Triclosan Methyl	87.6		P	60 - 110
Trifluralin	77.6		P	49 - 98.0

Reference Method: EPA 8276

Batch ID: P408463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	78.0		P	61 - 118
Toxaphene	67.6		P	51 - 122

Reference Method: EPA 8321B

Batch ID: P408581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	40 - 150
2,4,5-T	106		P	40 - 150
Acetaminophen	85.5		P	30 - 150
Acetamiprid	96.7		P	40 - 150
Afidopyropen	80.4		P	40 - 150
Bentazon	81.0		P	30 - 150
Benzovindiflupyr	117		P	40 - 150
Carbamazepine	112		P	40 - 150
Clothianidin	92.7		P	40 - 150
Dinotefuran	105		P	40 - 150
Diuron	82.3		P	40 - 150
Fenuron	100		P	40 - 150
Fluridone	73.4		P	40 - 150
Hydrocodone	86.4		P	40 - 150
Ibuprofen	145		P	40 - 150
Imazapyr	104		P	40 - 150
Imidacloprid	79.9		P	40 - 150
Linuron	91.7		P	40 - 150
Mandestrobin	114		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P408581

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
MCPPE	102		P	40 - 150
Naproxen	98.8		P	40 - 150
Primidone	91.6		P	40 - 150
Pyraclostrobin	89.6		P	40 - 150
Silvex	75.6		P	40 - 150
Thiamethoxam	99.5		P	40 - 150
Tolfenpyrad	51.7		P	30 - 150
Triclopyr	126		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P408582

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	137		P	40 - 150
Endothall	106		P	40 - 150
Glufosinate	139		P	40 - 150
Glyphosate	130		P	40 - 150
Sucralose	108		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P408518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.4		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P408794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P408797

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P408958

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P408710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299623	Calcium	99.2		P	80 - 120
2299623	Iron	105	107	P/P	80 - 120
2299623	Magnesium	103		P	80 - 120
2299623	Potassium	103	105	P/P	80 - 120
2299623	Sodium	103		P	80 - 120
2299623	Strontium	104	103	P/P	80 - 120
2299623	Tin	105	105	P/P	80 - 120
2299623	Titanium	105	106	P/P	80 - 120
2299623	Vanadium	107	107	P/P	80 - 120
2299623	Zinc	83.8	84.3	P/P	80 - 120
2299727	Calcium	112		P	80 - 120
2299727	Iron	110		P	80 - 120
2299727	Magnesium	110		P	80 - 120
2299727	Potassium	110		P	80 - 120
2299727	Sodium	107		P	80 - 120
2299727	Strontium	106		P	80 - 120
2299727	Tin	108		P	80 - 120
2299727	Titanium	108		P	80 - 120
2299727	Vanadium	107		P	80 - 120
2299727	Zinc	106		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P408710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299623	Aluminum	100	98.9	P/P	80 - 120
2299623	Antimony	104	103	P/P	80 - 120
2299623	Arsenic	104	102	P/P	80 - 120
2299623	Barium	106	106	P/P	80 - 120
2299623	Beryllium	104	102	P/P	80 - 120
2299623	Boron	98.6	97.2	P/P	80 - 120
2299623	Cadmium	105	102	P/P	80 - 120
2299623	Chromium	107	106	P/P	80 - 120
2299623	Cobalt	100	98.7	P/P	80 - 120
2299623	Copper	99.0	98.3	P/P	80 - 120
2299623	Lead	99.1	96.9	P/P	80 - 120
2299623	Molybdenum	106	105	P/P	80 - 120
2299623	Nickel	101	99.6	P/P	80 - 120
2299623	Selenium	102	101	P/P	80 - 120
2299623	Silver	100	100	P/P	80 - 120
2299623	Thallium	109	108	P/P	80 - 120
2299727	Aluminum	102		P	80 - 120
2299727	Antimony	99.9		P	80 - 120
2299727	Arsenic	102		P	80 - 120
2299727	Barium	106		P	80 - 120
2299727	Beryllium	103		P	80 - 120
2299727	Boron	98.6		P	80 - 120
2299727	Cadmium	102		P	80 - 120
2299727	Chromium	104		P	80 - 120
2299727	Cobalt	98.1		P	80 - 120
2299727	Copper	102		P	80 - 120
2299727	Lead	97.2		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P408710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299727	Molybdenum	101		P	80 - 120
2299727	Nickel	102		P	80 - 120
2299727	Selenium	99.0		P	80 - 120
2299727	Silver	100		P	80 - 120
2299727	Thallium	107		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409186

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299471	Chloride	100		P	90 - 110
2299634	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P409192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299471	Sulfate	96.3		P	90 - 110
2299634	Sulfate	95.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P409022

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299720	Ammonia-N	98.2	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299453	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299720	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299637	Total-P	107	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408507

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299641	O-Phosphate-P	96.7	97.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P408463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2298524	Aldrin	60.8		P	10 - 93.0
2298524	Aldrin	56.9		P	10 - 89.0
2298524	Alpha-BHC	93.2		P	75 - 106
2298524	Alpha-BHC	101		P	71 - 105
2298524	Alpha-Chlordane	76.2		P	50 - 109
2298524	Alpha-Chlordane	69.5		P	43 - 107
2298524	Beta-BHC	106		P	65 - 135
2298524	Beta-BHC	79.9		P	57 - 152
2298524	Beta-Cyfluthrin	94.0		P	23 - 167
2298524	Beta-Cyfluthrin	71.4		P	29 - 186
2298524	Bifenthrin	75.1		P	11 - 123
2298524	Bifenthrin	70.5		P	19 - 119
2298524	Carbophenothion	64.0		P	18 - 96.0
2298524	Carbophenothion	62.8		P	19 - 107
2298524	Chlorothalonil	76.1		P	26 - 182
2298524	Chlorothalonil	76.6		P	10 - 245
2298524	Cis-Nonachlor	64.3		P	40 - 111
2298524	Cis-Nonachlor	55.9		P	36 - 110
2298524	Cypermethrin	99.4		P	25 - 155
2298524	Cypermethrin	80.0		P	24 - 169
2298524	Dacthal	87.2		P	73 - 112
2298524	Dacthal	78.9		P	62 - 115
2298524	DDD-p,p'	78.5		P	47 - 108
2298524	DDD-p,p'	67.7		P	36 - 109
2298524	DDE-p,p'	69.7		P	48 - 107
2298524	DDE-p,p'	69.1		P	30 - 114
2298524	DDT-p,p'	76.6		P	49 - 111
2298524	DDT-p,p'	71.9		P	42 - 108
2298524	Delta-BHC	105		P	68 - 143
2298524	Delta-BHC	92.2		P	60 - 164
2298524	Deltamethrin	114		P	16 - 176
2298524	Deltamethrin	86.4		P	10 - 210
2298524	Dichlobenil	77.2		P	32 - 113
2298524	Dichlobenil	51.5		P	23 - 108
2298524	Dicofol	81.5		P	50 - 108
2298524	Dicofol	74.8		P	44 - 109
2298524	Dieldrin	71.4		P	56 - 110
2298524	Dieldrin	63.3		P	37 - 119
2298524	Endosulfan I	74.3		P	60 - 105
2298524	Endosulfan I	69.2		P	52 - 105
2298524	Endosulfan II	72.2		P	50 - 120
2298524	Endosulfan II	56.2		P	35 - 127
2298524	Endosulfan Sulfate	80.2		P	55 - 121
2298524	Endosulfan Sulfate	54.7		P	39 - 130
2298524	Endrin	76.1		P	35 - 117
2298524	Endrin	66.9		P	30 - 116
2298524	Endrin Aldehyde	75.8		P	36 - 116
2298524	Endrin Aldehyde	55.2		P	20 - 110
2298524	Endrin Ketone	103		P	56 - 130
2298524	Endrin Ketone	76.7		P	48 - 134
2298524	Esfenvalerate	84.8		P	10 - 179
2298524	Esfenvalerate	66.0		P	10 - 199

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P408463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2298524	Ethalfuralin	79.7		P	49 - 99.0
2298524	Ethalfuralin	75.3		P	48 - 95.0
2298524	Fenpropathrin	88.6		P	35 - 119
2298524	Fenpropathrin	76.3		P	37 - 121
2298524	Gamma-BHC	95.7		P	72 - 115
2298524	Gamma-BHC	92.1		P	61 - 126
2298524	Gamma-Chlordane	74.6		P	45 - 107
2298524	Gamma-Chlordane	67.5		P	39 - 105
2298524	Heptachlor	68.2		P	41 - 100
2298524	Heptachlor	63.3		P	38 - 96.0
2298524	Heptachlor Epoxide	82.3		P	58 - 106
2298524	Heptachlor Epoxide	70.4		P	42 - 114
2298524	Hexachlorobenzene	78.5		P	39 - 100
2298524	Hexachlorobenzene	73.7		P	39 - 93.0
2298524	Kepone	106		P	10 - 191
2298524	Kepone	75.1		P	10 - 215
2298524	Lambda-Cyhalothrin	98.5		P	10 - 186
2298524	Lambda-Cyhalothrin	90.8		P	10 - 204
2298524	Methoprene	65.6		P	10 - 129
2298524	Methoprene	67.2		P	17 - 108
2298524	Methoxychlor	104		P	61 - 111
2298524	Methoxychlor	93.3		P	56 - 115
2298524	MGK-264	82.8		P	20 - 123
2298524	MGK-264	76.2		P	35 - 120
2298524	Mirex	55.5		P	10 - 182
2298524	Mirex	53.9		P	10 - 178
2298524	Oxychlordane	79.7		P	39 - 110
2298524	Oxychlordane	75.3		P	47 - 91.0
2298524	Permethrin	97.2		P	26 - 152
2298524	Permethrin	87.8		P	27 - 170
2298524	Phenothrin	78.7		P	10 - 109
2298524	Phenothrin	77.0		P	10 - 133
2298524	Piperonyl Butoxide	101		P	27 - 142
2298524	Piperonyl Butoxide	91.8		P	23 - 150
2298524	Prallethrin	70.4		P	14 - 109
2298524	Prallethrin	63.7		P	21 - 113
2298524	Tau-Fluvalinate	84.8		P	16 - 134
2298524	Tau-Fluvalinate	62.0		P	16 - 158
2298524	Tetramethrin	103		P	10 - 125
2298524	Tetramethrin	91.3		P	22 - 132
2298524	Trans-Nonachlor	79.0		P	45 - 107
2298524	Trans-Nonachlor	64.8		P	43 - 102
2298524	Triclosan Methyl	73.2		P	60 - 110
2298524	Triclosan Methyl	71.3		P	49 - 109
2298524	Trifluralin	79.6		P	49 - 98.0
2298524	Trifluralin	75.3		P	48 - 93.0

Reference Method: EPA 8276

Batch ID: P408463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299619	Chlordane	77.8	68.4	P/P	55 - 128

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P408463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299619	Toxaphene	75.2	86.9	P/P	29 - 164

Reference Method: EPA 8321B

Batch ID: P408581

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299564	2,4-D	132	98.7	P/P	40 - 150
2299564	2,4,5-T	80.5	88.5	P/P	40 - 150
2299564	Acetaminophen	111	115	P/P	30 - 150
2299564	Acetamiprid	114	102	P/P	40 - 150
2299564	Afidopyropen	75.5	65.6	P/P	40 - 150
2299564	Benzovindiflupyr	96.5	117	P/P	40 - 150
2299564	Carbamazepine	102	109	P/P	40 - 150
2299564	Clothianidin	166	183	F/F	40 - 150
2299564	Dinotefuran	128	141	P/P	40 - 150
2299564	Diuron	86.2	68.9	P/P	40 - 150
2299564	Fenuron	86.1	99.7	P/P	40 - 150
2299564	Fluridone	74.0	95.1	P/P	40 - 150
2299564	Hydrocodone	97.3	106	P/P	40 - 150
2299564	Ibuprofen	59.7	80.1	P/P	40 - 150
2299564	Imazapyr	66.2	95.9	P/P	40 - 150
2299564	Imidacloprid	188	203	F/F	40 - 150
2299564	Linuron	93.8	77.9	P/P	40 - 150
2299564	Mandestrobin	100	98.9	P/P	40 - 150
2299564	MCPP	111	98.9	P/P	40 - 150
2299564	Naproxen	57.6	47.3	P/P	40 - 150
2299564	Primidone	108	72.8	P/P	40 - 150
2299564	Pyraclostrobin	80.0	83.3	P/P	40 - 150
2299564	Silvex	64.6	81.9	P/P	40 - 150
2299564	Thiamethoxam	184	186	F/F	40 - 150
2299564	Tolfenpyrad	50.5	42.9	P/P	30 - 150
2299564	Triclopyr	106	98.8	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P408582

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2299564	Acesulfame K	145	139	P/P	40 - 150
2299564	AMPA	148	154	P/F	40 - 150
2299564	Endothall	162	163	F/F	40 - 150
2299564	Glufosinate	140	146	P/P	40 - 150
2299564	Glyphosate	143	141	P/P	40 - 150
2299564	Sucralose	127	153	P/F	40 - 150

Reference Method: SM 4500 F-C-2011

Batch ID: P408797

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2300414	Fluoride	97.5	96.9	P/P	92 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P408958

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2298793	Organic Carbon	92.9	92.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P408515

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299634	Turbidity	0.995	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P408710

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299623	Calcium	0.520	Spike	P	0 - 20
2299623	Iron	1.78	Spike	P	0 - 20
2299623	Magnesium	2.06	Spike	P	0 - 20
2299623	Potassium	1.09	Spike	P	0 - 20
2299623	Sodium	0.289	Spike	P	0 - 20
2299623	Strontium	0.802	Spike	P	0 - 20
2299623	Tin	0.379	Spike	P	0 - 20
2299623	Titanium	1.05	Spike	P	0 - 20
2299623	Vanadium	0.829	Spike	P	0 - 20
2299623	Zinc	0.514	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P408710

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299623	Aluminum	1.44	Spike	P	0 - 20
2299623	Antimony	0.367	Spike	P	0 - 20
2299623	Arsenic	1.78	Spike	P	0 - 20
2299623	Barium	0.402	Spike	P	0 - 20
2299623	Beryllium	1.67	Spike	P	0 - 20
2299623	Boron	1.02	Spike	P	0 - 20
2299623	Cadmium	2.77	Spike	P	0 - 20
2299623	Chromium	0.789	Spike	P	0 - 20
2299623	Cobalt	1.49	Spike	P	0 - 20
2299623	Copper	0.690	Spike	P	0 - 20
2299623	Lead	2.24	Spike	P	0 - 20
2299623	Manganese	0.357	Spike	P	0 - 20
2299623	Molybdenum	1.10	Spike	P	0 - 20
2299623	Nickel	1.31	Spike	P	0 - 20
2299623	Selenium	0.404	Spike	P	0 - 20
2299623	Silver	0.312	Spike	P	0 - 20
2299623	Thallium	1.21	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P409186

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299471	Chloride	0.444	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P409022

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299720	Ammonia-N	0.907	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P408850

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299453	Kjeldahl Nitrogen	1.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P408733

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299720	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P408651

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299637	Total-P	1.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P408507

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299641	O-Phosphate-P	0.926	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P408463

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2298524	Aldrin	6.74	Spike	P	0 - 37
2298524	Alpha-BHC	7.74	Spike	P	0 - 16
2298524	Alpha-Chlordane	9.18	Spike	P	0 - 28
2298524	Beta-BHC	28.3	Spike	P	0 - 32
2298524	Beta-Cyfluthrin	27.3	Spike	P	0 - 41
2298524	Bifenthrin	6.26	Spike	P	0 - 36
2298524	Carbophenothion	1.89	Spike	P	0 - 81
2298524	Chlorothalonil	0.639	Spike	P	0 - 54
2298524	Cis-Nonachlor	14.1	Spike	P	0 - 33
2298524	Cypermethrin	21.7	Spike	P	0 - 38
2298524	Dacthal	9.92	Spike	P	0 - 23
2298524	DDD-p,p'	14.9	Spike	P	0 - 35
2298524	DDE-p,p'	0.842	Spike	P	0 - 27
2298524	DDT-p,p'	6.37	Spike	P	0 - 31
2298524	Delta-BHC	13.4	Spike	P	0 - 30
2298524	Deltamethrin	27.6	Spike	P	0 - 76

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P408463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2298524	Dichlobenil	39.8	Spike	F	0 - 33
2298524	Dicofol	8.65	Spike	P	0 - 24
2298524	Dieldrin	11.3	Spike	P	0 - 35
2298524	Endosulfan I	7.08	Spike	P	0 - 25
2298524	Endosulfan II	24.9	Spike	P	0 - 31
2298524	Endosulfan Sulfate	37.8	Spike	P	0 - 38
2298524	Endrin	12.9	Spike	P	0 - 53
2298524	Endrin Aldehyde	31.5	Spike	P	0 - 81
2298524	Endrin Ketone	29.5	Spike	P	0 - 33
2298524	Esfenvalerate	24.9	Spike	P	0 - 46
2298524	Ethalfuralin	5.69	Spike	P	0 - 22
2298524	Fenpropathrin	14.9	Spike	P	0 - 29
2298524	Gamma-BHC	3.81	Spike	P	0 - 17
2298524	Gamma-Chlordane	9.98	Spike	P	0 - 28
2298524	Heptachlor	7.41	Spike	P	0 - 28
2298524	Heptachlor Epoxide	15.6	Spike	P	0 - 23
2298524	Hexachlorobenzene	6.28	Spike	P	0 - 22
2298524	Kepone	33.8	Spike	P	0 - 61
2298524	Lambda-Cyhalothrin	8.17	Spike	P	0 - 52
2298524	Methoprene	2.46	Spike	P	0 - 38
2298524	Methoxychlor	11.1	Spike	P	0 - 29
2298524	MGK-264	8.29	Spike	P	0 - 41
2298524	Mirex	2.77	Spike	P	0 - 39
2298524	Oxychlordane	5.71	Spike	P	0 - 33
2298524	Permethrin	10.1	Spike	P	0 - 39
2298524	Phenothrin	2.19	Spike	P	0 - 52
2298524	Piperonyl Butoxide	9.33	Spike	P	0 - 91
2298524	Prallethrin	9.99	Spike	P	0 - 34
2298524	Tau-Fluvalinate	31.1	Spike	P	0 - 41
2298524	Tetramethrin	12.0	Spike	P	0 - 43
2298524	Trans-Nonachlor	19.8	Spike	P	0 - 31
2298524	Triclosan Methyl	2.68	Spike	P	0 - 24
2298524	Trifluralin	5.55	Spike	P	0 - 23

Reference Method: EPA 8276

Batch ID: P408463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299619	Chlordane	11.0	Spike	P	0 - 30
2299619	Toxaphene	14.5	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P408581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299564	2,4-D	28.9	Spike	P	0 - 30
2299564	2,4,5-T	9.39	Spike	P	0 - 30
2299564	Acetaminophen	3.65	Spike	P	0 - 30
2299564	Acetamidrid	11.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P408581

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299564	Afidopyropen	14.1	Spike	P	0 - 30
2299564	Bentazon	6.76	Spike	P	0 - 30
2299564	Benzovindiflupyr	19.4	Spike	P	0 - 30
2299564	Carbamazepine	6.72	Spike	P	0 - 30
2299564	Clothianidin	9.47	Spike	P	0 - 30
2299564	Dinotefuran	9.41	Spike	P	0 - 30
2299564	Diuron	22.3	Spike	P	0 - 30
2299564	Fenuron	14.6	Spike	P	0 - 30
2299564	Fluridone	15.1	Spike	P	0 - 30
2299564	Hydrocodone	8.23	Spike	P	0 - 30
2299564	Ibuprofen	29.1	Spike	P	0 - 30
2299564	Imazapyr	18.3	Spike	P	0 - 30
2299564	Imidacloprid	7.77	Spike	P	0 - 30
2299564	Linuron	18.6	Spike	P	0 - 30
2299564	Mandestrobin	1.28	Spike	P	0 - 30
2299564	MCCP	11.6	Spike	P	0 - 30
2299564	Naproxen	19.6	Spike	P	0 - 30
2299564	Primidone	36.5	Spike	F	0 - 30
2299564	Pyraclostrobin	4.10	Spike	P	0 - 30
2299564	Silvex	23.7	Spike	P	0 - 30
2299564	Thiamethoxam	1.01	Spike	P	0 - 30
2299564	Tolfenpyrad	16.3	Spike	P	0 - 30
2299564	Triclopyr	7.17	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P408582

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299564	Acesulfame K	4.14	Spike	P	0 - 30
2299564	AMPA	4.30	Spike	P	0 - 30
2299564	Endothall	0.858	Spike	P	0 - 30
2299564	Glufosinate	4.15	Spike	P	0 - 30
2299564	Glyphosate	1.31	Spike	P	0 - 30
2299564	Sucralose	16.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P408518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299633	Color (true)	1.84	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P408794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300414	Total Alkalinity	4.54	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P408978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2299607	TDS	7.79	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P408797

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2300414	Fluoride	0.490	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P408958

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2298793	Organic Carbon	0.461	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2299725

Field Sample ID: G1TLHR0041

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	65.7	P	31 - 118
EPA 8270E	Tetrachloro-m-xylene	69.8	P	28 - 96.0
EPA 8276	Decachlorobiphenyl	64.3	P	30 - 97.0
EPA 8276	PCNB	65.5	P	45 - 119

Lab Sample ID: 2299726

Field Sample ID: G1TLHR0081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	111	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	69.3	P	30 - 160
EPA 8321B	Endothall-d6	151	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	127	P	30 - 160
EPA 8321B	Ibuprofen-d3	58.0	P	30 - 160
EPA 8321B	Primidone-d5	74.8	P	30 - 160
EPA 8321B	Sucralose-d6	148	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109853

Included Lab Sample IDs: 2299721

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.1	99.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109856

Included Lab Sample IDs: 2299719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A109857

Included Lab Sample IDs: 2299719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	85 - 115

Reference Method: EPA 8270E

Run ID: A109917

Included Lab Sample IDs: 2299725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	92.7		P	80 - 120
Alpha-BHC	102		P	80 - 120
Alpha-Chlordane	106		P	80 - 120
Beta-BHC	100		P	80 - 120
Beta-Cyfluthrin	89.8		P	80 - 120
Bifenthrin	98.3		P	80 - 120
Carbophenothion	97.9		P	80 - 120
Chlorothalonil	93.2		P	80 - 120
Cis-Nonachlor	102		P	80 - 120
Cypermethrin	104		P	80 - 120
Dacthal	99.2		P	80 - 120
DDD-p,p'	98.4		P	80 - 120
DDE-p,p'	99.5		P	80 - 120
DDT-p,p'	99.8		P	80 - 120
Delta-BHC	98.4		P	80 - 120
Deltamethrin	90.5		P	80 - 120
Dichlobenil	95.8		P	80 - 120
Dicofol	98.6		P	80 - 120
Dieldrin	98.1		P	80 - 120
Endosulfan I	98.7		P	80 - 120
Endosulfan II	97.0		P	80 - 120
Endosulfan Sulfate	93.3		P	80 - 120
Endrin	101		P	80 - 120
Endrin Aldehyde	103		P	80 - 120
Endrin Ketone	112		P	80 - 120
Esfenvalerate	92.1		P	80 - 120
Ethalfuralin	99.2		P	80 - 120
Fenpropathrin	92.8		P	80 - 120
Gamma-BHC	99.2		P	80 - 120
Gamma-Chlordane	97.8		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A109917
Included Lab Sample IDs: 2299725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Heptachlor	99.3		P	80 - 120
Heptachlor Epoxide	100		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	57.1*		F	80 - 120
Lambda-Cyhalothrin	88.5		P	80 - 120
Methoprene	95.4		P	80 - 120
Methoxychlor	100		P	80 - 120
MGK-264	87.6		P	80 - 120
Mirex	96.2		P	80 - 120
Oxychlordane	97.8		P	80 - 120
Permethrin	98.8		P	80 - 120
Phenothrin	99.1		P	80 - 120
Piperonyl Butoxide	72.5*		F	80 - 120
Prallethrin	84.1		P	80 - 120
Tau-Fluvalinate	94.2		P	80 - 120
Tetramethrin	79.6*		F	80 - 120
Trans-Nonachlor	103		P	80 - 120
Triclosan Methyl	100		P	80 - 120
Trifluralin	98.1		P	80 - 120

Reference Method: EPA 8321B
Run ID: A109919
Included Lab Sample IDs: 2299726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	123	119	P/P	60 - 160
Endothall	89.8	80.8	P/P	60 - 160
Sucralose	104	93.1	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A109920
Included Lab Sample IDs: 2299726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	138	117	P/P	50 - 150
2,4,5-T	95.0	98.2	P/P	50 - 150
Acetaminophen	76.1	79.9	P/P	60 - 160
Acetamiprid	92.5	99.3	P/P	50 - 150
Afidopyropen	75.7	98.7	P/P	50 - 150
Bentazon	80.7	94.9	P/P	50 - 160
Benzovindiflupyr	95.2	116	P/P	50 - 150
Carbamazepine	95.8	92.8	P/P	60 - 150
Clothianidin	119	100	P/P	60 - 150
Dinotefuran	106	96.8	P/P	50 - 150
Diuron	90.3	89.7	P/P	60 - 160
Fenuron	103	101	P/P	60 - 150
Fluridone	84.3	111	P/P	60 - 160
Hydrocodone	94.5	94.9	P/P	60 - 150
Ibuprofen	69.4	69.2	P/P	50 - 160
Imazapyr	114	107	P/P	50 - 150
Imidacloprid	92.9	82.2	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A109920
Included Lab Sample IDs: 2299726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	120	105	P/P	60 - 150
Mandestrobin	114	109	P/P	50 - 150
MCPPP	102	95.3	P/P	50 - 150
Naproxen	74.7	64.8	P/P	50 - 160
Primidone	83.4	66.0	P/P	60 - 150
Pyraclostrobin	107	98.7	P/P	60 - 150
Silvex	104	114	P/P	50 - 150
Thiamethoxam	106	111	P/P	50 - 150
Tolfenpyrad	80.2	74.8	P/P	60 - 150
Triclopyr	132	121	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A109941
Included Lab Sample IDs: 2299726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.5	99.8	P/P	60 - 160
Glufosinate	91.6	97.8	P/P	60 - 160
Glyphosate	88.6	94.0	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A109944
Included Lab Sample IDs: 2299720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A109953
Included Lab Sample IDs: 2299727, 2299728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.3	101	P/P	90 - 110
Aluminum	99.5	99.3	P/P	90 - 110
Antimony	100	100	P/P	90 - 110
Antimony	101	100	P/P	90 - 110
Arsenic	98.5	99.4	P/P	90 - 110
Arsenic	99.4	99.3	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Barium	101	101	P/P	90 - 110
Beryllium	98.6	99.1	P/P	90 - 110
Beryllium	99.7	98.6	P/P	90 - 110
Boron	98.1	99.9	P/P	90 - 110
Boron	99.4	98.1	P/P	90 - 110
Cadmium	100	100	P/P	90 - 110
Cadmium	100	100	P/P	90 - 110
Chromium	99.3	101	P/P	90 - 110
Chromium	99.8	99.3	P/P	90 - 110
Cobalt	94.0	94.7	P/P	90 - 110
Cobalt	94.7	95.4	P/P	90 - 110
Copper	96.4	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A109953

Included Lab Sample IDs: 2299727, 2299728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.9	98.0	P/P	90 - 110
Lead	92.4	93.7	P/P	90 - 110
Lead	93.7	92.3	P/P	90 - 110
Manganese	99.2	99.5	P/P	90 - 110
Manganese	99.5	100	P/P	90 - 110
Molybdenum	98.4	98.7	P/P	90 - 110
Molybdenum	99.1	98.4	P/P	90 - 110
Nickel	96.9	97.2	P/P	90 - 110
Nickel	97.2	97.8	P/P	90 - 110
Selenium	98.4	99.0	P/P	90 - 110
Selenium	99.0	99.7	P/P	90 - 110
Silver	98.9	98.8	P/P	90 - 110
Silver	99.7	98.9	P/P	90 - 110
Thallium	105	105	P/P	90 - 110
Thallium	105	103	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A109954

Included Lab Sample IDs: 2299725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.6		P	80 - 120
Toxaphene	104		P	80 - 120

Reference Method: SM 2320 B-2011

Run ID: A109978

Included Lab Sample IDs: 2299719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109978

Included Lab Sample IDs: 2299719

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110001

Included Lab Sample IDs: 2299727, 2299728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	101	101	P/P	90 - 110
Potassium	98.6	99.3	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Strontium	105	104	P/P	90 - 110
Tin	102	103	P/P	90 - 110
Titanium	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110001

Included Lab Sample IDs: 2299727, 2299728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Vanadium	102	102	P/P	90 - 110
Zinc	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A110010

Included Lab Sample IDs: 2299720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A110025

Included Lab Sample IDs: 2299720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.7	98.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A110041

Included Lab Sample IDs: 2299720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	95.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A110045

Included Lab Sample IDs: 2299728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A110064

Included Lab Sample IDs: 2299720

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A11040

Included Lab Sample IDs: 2299719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	98.3	98.8	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						0.995	
EPA 200.7 Rev. 4.4	Calcium	103	99.2	112				0.520
	Iron	106	105	107	110			1.78
	Magnesium	102	103	110				2.06
	Potassium	103	103	105	110			1.09
	Sodium	102	103	107				0.289
	Strontium	104	104	103	106			0.802
	Tin	108	105	105	108			0.379
	Titanium	107	105	106	108			1.05
	Vanadium	106	107	107	107			0.829
	Zinc	107	83.8	84.3	106			0.514
EPA 200.8 Rev. 5.4	Aluminum	101	100	98.9	102			1.44
	Antimony	99.2	104	103	99.9			0.367
	Arsenic	102	104	102	102			1.78
	Barium	105	106	106	106			0.402
	Beryllium	102	104	102	103			1.67
	Boron	97.6	98.6	97.2	98.6			1.02
	Cadmium	100	105	102	102			2.77
	Chromium	102	107	106	104			0.789
	Cobalt	99.3	100	98.7	98.1			1.49
	Copper	102	99.0	98.3	102			0.690
	Lead	95.5	99.1	96.9	97.2			2.24
	Manganese	100						0.357
	Molybdenum	102	106	105	101			1.10
	Nickel	103	101	99.6	102			1.31
	Selenium	99.7	102	101	99.0			0.404
	Silver	102	100	100	100			0.312
	Thallium	105	109	108	107			1.21
EPA 300.0 Rev. 2.1	Chloride	100	100	102			0.444	
	Sulfate	96.3	96.3	95.4				
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	98.2	99.2				0.907
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	103	104				1.21
EPA 353.2 Rev. 2.0	NO2NO3-N	104	102	103				0.976
EPA 365.1 Rev. 2.0	Total-P	109	107	109				1.30
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	96.7	97.6				0.926
EPA 8270E	Aldrin	58.8	60.8	56.9				6.74
	Alpha-BHC	94.8	93.2	101				7.74
	Alpha-Chlordane	84.4	76.2	69.5				9.18
	Beta-BHC	109	106	79.9				28.3
	Beta-Cyfluthrin	74.1	94.0	71.4				27.3
	Bifenthrin	57.6	75.1	70.5				6.26
	Carbophenothion	49.4	64.0	62.8				1.89
	Chlorothalonil	84.8	76.1	76.6				0.639
	Cis-Nonachlor	76.9	64.3	55.9				14.1
	Cypermethrin	83.3	99.4	80.0				21.7
	Dacthal	98.1	87.2	78.9				9.92
	DDD-p,p'	85.2	78.5	67.7				14.9
	DDE-p,p'	77.6	69.7	69.1				0.842
	DDT-p,p'	75.5	76.6	71.9				6.37
	Delta-BHC	112	105	92.2				13.4
	Deltamethrin	84.1	114	86.4				27.6
	Dichlobenil	96.5	77.2	51.5				39.8
	Dicofol	77.3	81.5	74.8				8.65
	Dieldrin	84.1	71.4	63.3				11.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Endosulfan I	84.3	74.3	69.2		7.08
	Endosulfan II	89.0	72.2	56.2		24.9
	Endosulfan Sulfate	95.0	80.2	54.7		37.8
	Endrin	84.3	76.1	66.9		12.9
	Endrin Aldehyde	84.9	75.8	55.2		31.5
	Endrin Ketone	123	103	76.7		29.5
	Esfenvalerate	66.6	84.8	66.0		24.9
	Ethalfuralin	78.3	79.7	75.3		5.69
	Fenpropathrin	76.0	88.6	76.3		14.9
	Gamma-BHC	101	95.7	92.1		3.81
	Gamma-Chlordane	79.1	74.6	67.5		9.98
	Heptachlor	72.6	68.2	63.3		7.41
	Heptachlor Epoxide	90.8	82.3	70.4		15.6
	Hexachlorobenzene	78.2	78.5	73.7		6.28
	Kepone	134	106	75.1		33.8
	Lambda-Cyhalothrin	68.6	98.5	90.8		8.17
	Methoprene	47.0	65.6	67.2		2.46
	Methoxychlor	94.9	104	93.3		11.1
	MGK-264	85.8	82.8	76.2		8.29
	Mirex	53.1	55.5	53.9		2.77
	Oxychlordane	78.1	79.7	75.3		5.71
	Permethrin	75.2	97.2	87.8		10.1
	Phenothrin	47.3	78.7	77.0		2.19
	Piperonyl Butoxide	96.1	101	91.8		9.33
	Prallethrin	67.7	70.4	63.7		9.99
	Tau-Fluvalinate	65.0	84.8	62.0		31.1
	Tetramethrin	83.6	103	91.3		12.0
	Trans-Nonachlor	78.7	79.0	64.8		19.8
	Triclosan Methyl	87.6	73.2	71.3		2.68
	Trifluralin	77.6	79.6	75.3		5.55
EPA 8276	Chlordane	78.0	77.8	68.4		11.0
	Toxaphene	67.6	75.2	86.9		14.5
EPA 8321B	2,4-D	114	132	98.7		28.9
	2,4,5-T	106	80.5	88.5		9.39
	Acesulfame K	101	145	139		4.14
	Acetaminophen	85.5	115	111		3.65
	Acetamiprid	96.7	102	114		11.1
	Afidopyropen	80.4	65.6	75.5		14.1
	AMPA	137	148	154		4.30
	Bentazon	81.0				6.76
	Benzovindiflupyr	117	96.5	117		19.4
	Carbamazepine	112	109	102		6.72
	Clothianidin	92.7	183	166		9.47
	Dinotefuran	105	141	128		9.41
	Diuron	82.3	68.9	86.2		22.3
	Endothall	106	162	163		0.858
	Fenuron	100	99.7	86.1		14.6
	Fluridone	73.4	74.0	95.1		15.1
	Glufosinate	139	140	146		4.15
	Glyphosate	130	143	141		1.31
	Hydrocodone	86.4	106	97.3		8.23
	Ibuprofen	145	59.7	80.1		29.1
	Imazapyr	104	66.2	95.9		18.3
	Imidacloprid	79.9	203	188		7.77

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Linuron	91.7	93.8	77.9		18.6
	Mandestrobin	114	100	98.9		1.28
	MCP	102	111	98.9		11.6
	Naproxen	98.8	57.6	47.3		19.6
	Primidone	91.6	72.8	108		36.5
	Pyraclostrobin	89.6	80.0	83.3		4.10
	Silvex	75.6	64.6	81.9		23.7
	Sucralose	108	127	153		16.1
	Thiamethoxam	99.5	186	184		1.01
	Tolfenpyrad	51.7	50.5	42.9		16.3
	Triclopyr	126	106	98.8		7.17
SM 2120 B-2011	Color (true)	99.4			1.84	
SM 2320 B-2011	Total Alkalinity	98.6			4.54	
SM 2540 C-2011	TDS				7.79	
SM 4500 F-C-2011	Fluoride	97.5	97.5	96.9		0.490
SM 5310 B-2011	Organic Carbon	96.1	92.9	92.4		0.461

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2299719
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2299727, 2299728
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2299727, 2299728
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2299719
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2299719
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2299720
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2299720
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2299720
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2299720
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2299721
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2299725
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2299725
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2299726
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2299719
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2299719
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2299727, 2299728
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2299719
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2299719
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2299719
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2299720

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	01/13/2022			01/13/2022 15:45	Khloe J Berg	2299719
EPA 200.7 Rev. 4.4	01/13/2022	01/20/2022 09:53	Emily M Philpot	01/21/2022 19:53	Josef B Mick	2299727
	01/13/2022	01/20/2022 09:53	Emily M Philpot	01/21/2022 20:12	Josef B Mick	2299728
	01/13/2022	01/20/2022 09:53	Emily M Philpot	01/26/2022 00:30	Josef B Mick	2299728
EPA 200.8 Rev. 5.4	01/13/2022	01/20/2022 09:53	Emily M Philpot	01/20/2022 20:25	McKinley C Carter	2299727
	01/13/2022	01/20/2022 09:53	Emily M Philpot	01/20/2022 22:01	McKinley C Carter	2299728
EPA 300.0 Rev. 2.1	01/13/2022			01/28/2022 17:55	James L Waggeberby	2299719
EPA 350.1 Rev. 2.0	01/13/2022			01/26/2022 14:09	Ping Hua	2299720
EPA 351.2 Rev. 2.0	01/13/2022	01/24/2022 11:42	Samantha L Bates	01/25/2022 11:28	Alexandra J Mattheus	2299720
EPA 353.2 Rev. 2.0	01/13/2022			01/20/2022 11:59	Beverly Y. Sanders	2299720
EPA 365.1 Rev. 2.0	01/13/2022	01/20/2022 17:50	Simonne.V. Calhoun	01/24/2022 14:59	Shengyu Ding	2299720
EPA 365.1 Rev. 2.0 dissolved	01/13/2022			01/13/2022 15:47	Ping Hua	2299721
EPA 8270E	01/13/2022	01/14/2022 08:30	Rasheda Ghaffari	01/18/2022 23:26	Vandana T. Nagar	2299725
EPA 8276	01/13/2022	01/14/2022 08:30	Rasheda Ghaffari	01/20/2022 13:58	Arthur Maknenko	2299725
EPA 8321B	01/13/2022	01/18/2022 12:00	Juyoung Kim	01/18/2022 15:44	Juyoung Kim	2299726
	01/13/2022	01/18/2022 12:00	Juyoung Kim	01/18/2022 20:01	Manjita Shrestha	2299726
	01/13/2022	01/19/2022 09:00	Hoor Shaik	01/20/2022 09:13	Juyoung Kim	2299726
SM 2120 B-2011	01/13/2022			01/13/2022 16:56	Sarah A Nixon	2299719
SM 2320 B-2011	01/13/2022			01/21/2022 00:22	Dale L. Simmons	2299719
SM 2340B	01/13/2022			01/21/2022 19:53	Josef B Mick	2299727
	01/13/2022			01/21/2022 20:12	Josef B Mick	2299728
SM 2540 C-2011	01/13/2022			01/18/2022 15:32	Yijie Li	2299719
SM 2540 D-2011	01/13/2022			01/18/2022 15:32	Yijie Li	2299719
SM 4500 F-C-2011	01/13/2022			01/21/2022 00:22	Dale L. Simmons	2299719
SM 5310 B-2011	01/13/2022			01/25/2022 03:18	Nathaniel J Jones	2299720