

Chemical Analysis Report

TLH-ROC-2022-01-04-01

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

Event Description: **Run 4a**
Request ID: **RQ-2022-01-03-53**
Customer: **TLH-ROC**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 27-JAN-2022 10:26



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: 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: Middle of Cherry Lake

Collection Date/Time: 01/04/2022 09:45

Field ID: G1TLHR0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297346	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P408091	
	EPA 300.0 Rev. 2.1	Chloride	7.9		mg Cl/L	P408204	
		Sulfate	1.5		mg SO4/L	P408206	
	SM 2120 B-2011	Color (true)**	3.8	I	PCU	P408084	
	SM 2320 B-2011	Total Alkalinity	8.9		mg CaCO3/L	P408144	
	SM 2540 C-2011	TDS	23	I	mg/L	P408444	
	SM 2540 D-2011	TSS	3	I	mg/L	P408435	
2297347	SM 4500 F-C-2011	Fluoride	0.046	I	mg F/L	P408146	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P408412	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P408284	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P408222	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P408058	
2297348	SM 5310 B-2011	Organic Carbon	5.4		mg C/L	P408350	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P408077	
2297350	EPA 8270E	Aldrin	0.67	U	ng/L	P408157	
		Alpha-BHC	0.10	U	ng/L	P408157	
		Alpha-Chlordane	0.21	U	ng/L	P408157	
		Beta-BHC	0.10	U	ng/L	P408157	
		Beta-Cyfluthrin**	1.3	U	ng/L	P408157	
		Bifenthrin**	0.52	U	ng/L	P408157	
		Carbophenothion	0.93	U	ng/L	P408157	
		Chlorothalonil	1.3	U	ng/L	P408157	
		Cis-Nonachlor**	0.21	U	ng/L	P408157	
		Cypermethrin	1.6	U	ng/L	P408157	
		Dacthal**	0.16	U	ng/L	P408157	
		DDD-p,p'	0.26	U	ng/L	P408157	
		DDE-p,p'	0.21	U	ng/L	P408157	
		DDT-p,p'	0.26	U	ng/L	P408157	
		Delta-BHC	0.41	U	ng/L	P408157	
		Deltamethrin**	1.3	U	ng/L	P408157	
		Dichlobenil**	0.26	U	ng/L	P408157	
		Dicofol	1.3	U	ng/L	P408157	
		Dieldrin	0.92	I	ng/L	P408157	
		Endosulfan I	0.41	U	ng/L	P408157	
		Endosulfan II	0.41	U	ng/L	P408157	
		Endosulfan Sulfate	0.31	U	ng/L	P408157	
		Endrin	0.41	U	ng/L	P408157	
		Endrin Aldehyde	0.78	U	ng/L	P408157	
		Endrin Ketone	0.41	U	ng/L	P408157	
		Esfenvalerate**	0.78	U	ng/L	P408157	
		Ethalfuralin**	0.16	U	ng/L	P408157	
		Fenpropathrin**	0.26	U	ng/L	P408157	
		Gamma-BHC	0.13	U	ng/L	P408157	

Field ID: G1TLHR0048

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297350	EPA 8270E	Gamma-Chlordane	0.21	U	ng/L	P408157	CCV, LCS
		Heptachlor	0.21	U	ng/L	P408157	
		Heptachlor Epoxide	0.26	U	ng/L	P408157	
		Hexachlorobenzene	1.0	U	ng/L	P408157	
		Kepone**	5.2	UJ	ng/L	P408157	
		Lambda-Cyhalothrin**	0.78	U	ng/L	P408157	
		Methoprene**	0.78	U	ng/L	P408157	
		Methoxychlor	0.31	U	ng/L	P408157	
		MGK-264**	0.21	U	ng/L	P408157	
		Mirex	0.73	U	ng/L	P408157	
		Oxychlordane**	0.31	U	ng/L	P408157	
		Permethrin	1.8	I	ng/L	P408157	
		Phenothrin**	0.93	U	ng/L	P408157	
		Piperonyl Butoxide**	0.16	U	ng/L	P408157	
		Prallethrin**	2.1	U	ng/L	P408157	
		Tau-Fluvalinate**	0.26	U	ng/L	P408157	
		Tetramethrin**	0.78	U	ng/L	P408157	
		Trans-Nonachlor**	0.21	U	ng/L	P408157	
		Triclosan Methyl**	0.16	U	ng/L	P408157	
		Trifluralin	0.21	U	ng/L	P408157	
	EPA 8276	Chlordane	2.6	U	ng/L	P408157	
		Toxaphene	16	U	ng/L	P408157	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference and batch matrix spike recoveries are unavailable because of high 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.

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Alapaha River Trend

Collection Date/Time: 01/04/2022 10:55

Field ID: G1TLHR0136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2297351	EPA 8321B	2,4-D	0.0035	I	ug/L	P408154	
		Acesulfame K	0.10	U	ug/L	P408153	
		2,4,5-T	0.0040	U	ug/L	P408154	
		AMPA	0.10	U	ug/L	P408153	
		Acetaminophen	0.0080	U	ug/L	P408154	
		Acetamiprid	0.0020	U	ug/L	P408154	
		Endothall	0.25	U	ug/L	P408153	
		Glufosinate	0.10	U	ug/L	P408153	
		Glyphosate	0.10	U	ug/L	P408153	
		Afidopyropen	0.0020	U	ug/L	P408154	
		Bentazon	0.0039		ug/L	P408154	
		Sucralose	0.20		ug/L	P408153	
		Benzovindiflupyr	0.0020	U	ug/L	P408154	
		Carbamazepine	8.0E-04	U	ug/L	P408154	
		Clothianidin	0.0027	I	ug/L	P408154	
		Dinotefuran	0.014		ug/L	P408154	
		Diuron	0.013		ug/L	P408154	
		Fenuron	0.016	U	ug/L	P408154	
		Fluridone	8.0E-04	U	ug/L	P408154	
		Imazapyr	0.045		ug/L	P408154	
		Hydrocodone	0.0020	U	ug/L	P408154	
		Ibuprofen	0.020	U	ug/L	P408154	
		Imidacloprid	0.012		ug/L	P408154	
		Linuron	0.0040	U	ug/L	P408154	
		Mandestrobin	0.0020	U	ug/L	P408154	
		MCPP	0.0040	U	ug/L	P408154	
		Naproxen	0.0080	U	ug/L	P408154	
		Primidone	0.0040	U	ug/L	P408154	
		Pyraclostrobin	0.0020	U	ug/L	P408154	
		Silvex	0.0040	U	ug/L	P408154	
		Thiamethoxam	0.0024	I	ug/L	P408154	
		Tolfenpyrad	0.0020	U	ug/L	P408154	RPD
		Triclopyr	0.0040	U	ug/L	P408154	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408091

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408204

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408206

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408412

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408284

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408222

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408058

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408077

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

Reference Method: EPA 8270E
Batch ID: P408157

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P408157

Component	Result	Code	Units
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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P408157

Component	Result	Code	Units
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
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: P408157

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P408153

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: P408154

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
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 2120 B-2011

Batch ID: P408084

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P408144

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P408444

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P408435

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P408146

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P408350

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408204

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408412

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408284

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408222

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	101		P	90 - 110

Reference Method: EPA 8270E
Batch ID: P408157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	52.2		P	20 - 83.0
Alpha-BHC	93.7		P	74 - 108
Alpha-Chlordane	80.7		P	53 - 109
Beta-BHC	109		P	64 - 139
Beta-Cyfluthrin	96.3		P	27 - 171
Bifenthrin	64.9		P	20 - 124
Carbophenothion	58.1		P	20 - 94.0
Chlorothalonil	106		P	20 - 182
Cis-Nonachlor	76.9		P	46 - 110
Cypermethrin	103		P	35 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P408157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dacthal	90.7		P	70 - 115
DDD-p,p'	79.1		P	51 - 108
DDE-p,p'	74.8		P	51 - 104
DDT-p,p'	75.8		P	52 - 107
Delta-BHC	111		P	73 - 146
Deltamethrin	92.2		P	20 - 190
Dichlobenil	87.5		P	30 - 100
Dicofol	78.1		P	52 - 110
Dieldrin	82.2		P	57 - 111
Endosulfan I	79.0		P	61 - 106
Endosulfan II	89.2		P	57 - 122
Endosulfan Sulfate	101		P	58 - 122
Endrin	85.5		P	34 - 125
Endrin Aldehyde	90.4		P	40 - 120
Endrin Ketone	91.9		P	51 - 138
Esfenvalerate	92.5		P	20 - 193
Ethalfuralin	74.3		P	51 - 99.0
Fenpropathrin	87.8		P	40 - 116
Gamma-BHC	95.9		P	74 - 116
Gamma-Chlordane	74.7		P	49 - 105
Heptachlor	71.8		P	45 - 98.0
Heptachlor Epoxide	83.6		P	61 - 106
Hexachlorobenzene	74.4		P	41 - 96.0
Kepone	199		F	27 - 179
Lambda-Cyhalothrin	94.3		P	20 - 199
Methoprene	58.2		P	20 - 134
Methoxychlor	96.8		P	61 - 111
MGK-264	84.8		P	20 - 124
Mirex	59.4		P	20 - 199
Oxychlordane	87.1		P	39 - 112
Permethrin	95.7		P	31 - 155
Phenothrin	59.2		P	20 - 100
Piperonyl Butoxide	108		P	20 - 144
Prallethrin	76.4		P	20 - 103
Tau-Fluvalinate	79.4		P	24 - 133
Tetramethrin	85.6		P	20 - 116
Trans-Nonachlor	72.0		P	49 - 105
Triclosan Methyl	81.7		P	60 - 111
Trifluralin	73.0		P	53 - 97.0

Reference Method: EPA 8276
Batch ID: P408157

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	77.5		P	56 - 117
Toxaphene	64.6		P	45 - 116

Reference Method: EPA 8321B
Batch ID: P408153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.5		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P408153

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	99.8		P	40 - 160
Endothall	85.4		P	40 - 150
Glufosinate	104		P	40 - 160
Glyphosate	104		P	40 - 160
Sucralose	86.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P408154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	88.0		P	40 - 150
2,4,5-T	102		P	40 - 150
Acetaminophen	93.4		P	30 - 150
Acetamiprid	90.0		P	40 - 150
Afidopyropen	70.2		P	40 - 150
Bentazon	104		P	30 - 150
Benzovindiflupyr	82.0		P	40 - 150
Carbamazepine	93.8		P	40 - 150
Clothianidin	84.9		P	40 - 150
Dinotefuran	104		P	40 - 150
Diuron	83.3		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	91.6		P	40 - 150
Hydrocodone	97.4		P	40 - 150
Ibuprofen	108		P	40 - 150
Imazapyr	88.5		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	81.2		P	40 - 150
Mandestrobin	93.2		P	40 - 150
MCPP	96.1		P	40 - 150
Naproxen	74.8		P	40 - 150
Primidone	85.9		P	40 - 150
Pyraclostrobin	81.2		P	40 - 150
Silvex	92.5		P	40 - 150
Thiamethoxam	106		P	40 - 150
Tolfenpyrad	58.2		P	30 - 150
Triclopyr	108		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P408084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P408144

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.0		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P408146

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P408350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P408204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297130	Chloride	104	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P408412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297347	Ammonia-N	97.2	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P408284

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297347	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P408222

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297166	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P408077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297076	O-Phosphate-P	102	102	P/P	90 - 110

Reference Method: EPA 8270E

Batch ID: P408157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297416	Aldrin	53.9	44.1	P/P	10 - 94.0
2297416	Alpha-BHC	87.9	79.8	P/P	71 - 108
2297416	Alpha-Chlordane	66.3	65.7	P/P	42 - 115
2297416	Beta-BHC	118	95.2	P/P	56 - 161
2297416	Beta-Cyfluthrin	98.6	88.1	P/P	46 - 190
2297416	Bifenthrin	58.7	48.8	P/P	19 - 126
2297416	Carbophenothion	53.8	46.2	P/P	18 - 108
2297416	Chlorothalonil	182	111	P/P	10 - 262
2297416	Cis-Nonachlor	69.6	65.3	P/P	44 - 112
2297416	Cypermethrin	78.0	82.8	P/P	40 - 178
2297416	Dacthal	99.0	86.9	P/P	60 - 119
2297416	DDD-p,p'	74.8	72.2	P/P	40 - 114
2297416	DDE-p,p'	70.0	67.3	P/P	22 - 125
2297416	DDT-p,p'	67.3	62.0	P/P	39 - 110
2297416	Delta-BHC	127	96.6	P/P	64 - 174
2297416	Deltamethrin	101	95.0	P/P	10 - 227
2297416	Dichlobenil	69.6	66.0	P/P	20 - 99.0
2297416	Dicofol	75.5	70.8	P/P	43 - 115
2297416	Dieldrin	70.2	66.7	P/P	31 - 131
2297416	Endosulfan I	77.2	70.5	P/P	52 - 110
2297416	Endosulfan II	83.5	72.7	P/P	53 - 127
2297416	Endosulfan Sulfate	80.9	69.7	P/P	44 - 135

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P408157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297416	Endrin	68.4	62.6	P/P	36 - 122
2297416	Endrin Aldehyde	63.7	58.5	P/P	23 - 115
2297416	Endrin Ketone	87.7	78.5	P/P	46 - 147
2297416	Esfenvalerate	89.1	86.9	P/P	25 - 217
2297416	Ethalfuralin	76.1	66.7	P/P	46 - 99.0
2297416	Fenpropathrin	67.4	62.0	P/P	42 - 121
2297416	Gamma-BHC	98.4	86.2	P/P	63 - 131
2297416	Gamma-Chlordane	72.2	68.0	P/P	40 - 108
2297416	Heptachlor	58.5	51.7	P/P	38 - 98.0
2297416	Heptachlor Epoxide	71.2	69.8	P/P	39 - 124
2297416	Hexachlorobenzene	64.4	62.2	P/P	37 - 96.0
2297416	Kepone	151	109	P/P	10 - 216
2297416	Lambda-Cyhalothrin	83.6	85.5	P/P	21 - 220
2297416	Methoprene	64.7	55.1	P/P	19 - 112
2297416	Methoxychlor	88.8	78.3	P/P	56 - 118
2297416	MGK-264	87.3	75.8	P/P	28 - 125
2297416	Mirex	56.2	53.8	P/P	10 - 203
2297416	Oxychlordane	69.7	61.3	P/P	46 - 92.0
2297416	Permethrin	68.4	81.2	P/P	42 - 173
2297416	Phenothrin	52.8	47.3	P/P	10 - 140
2297416	Piperonyl Butoxide	102	96.8	P/P	10 - 158
2297416	Prallethrin	77.4	69.7	P/P	19 - 119
2297416	Tau-Fluvalinate	78.0	72.0	P/P	27 - 164
2297416	Tetramethrin	94.4	67.1	P/P	16 - 130
2297416	Trans-Nonachlor	69.8	67.1	P/P	43 - 105
2297416	Triclosan Methyl	91.0	80.3	P/P	50 - 113
2297416	Trifluralin	77.2	68.2	P/P	48 - 98.0

Reference Method: EPA 8276

Batch ID: P408157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297431	Chlordane	89.0	97.6	P/P	47 - 128
2297431	Toxaphene	67.7	80.9	P/P	11 - 163

Reference Method: EPA 8321B

Batch ID: P408153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	Acesulfame K	70.8	69.6	P/P	40 - 150
2297068	AMPA	97.9	99.2	P/P	40 - 160
2297068	Endothall	98.3	94.5	P/P	40 - 150
2297068	Glufosinate	106	105	P/P	40 - 160
2297068	Glyphosate	102	104	P/P	40 - 160
2297068	Sucralose	89.8	90.1	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P408154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	2,4-D	79.4	99.7	P/P	40 - 150
2297068	2,4,5-T	91.9	88.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P408154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297068	Acetaminophen	91.9	99.2	P/P	30 - 150
2297068	Acetamiprid	88.6	88.4	P/P	40 - 150
2297068	Afidopyropen	75.3	70.0	P/P	40 - 150
2297068	Bentazon	81.0	101	P/P	30 - 150
2297068	Benzovindiflupyr	80.2	85.0	P/P	40 - 150
2297068	Carbamazepine	87.2	96.0	P/P	40 - 150
2297068	Clothianidin	103	105	P/P	40 - 150
2297068	Dinotefuran	103	105	P/P	40 - 150
2297068	Diuron	73.3	81.4	P/P	40 - 150
2297068	Fenuron	98.2	103	P/P	40 - 150
2297068	Fluridone	87.6	87.0	P/P	40 - 150
2297068	Hydrocodone	89.3	94.8	P/P	40 - 150
2297068	Ibuprofen	80.0	81.2	P/P	40 - 150
2297068	Imazapyr	78.1	96.7	P/P	40 - 150
2297068	Imidacloprid	89.3	95.8	P/P	40 - 150
2297068	Linuron	95.0	91.0	P/P	40 - 150
2297068	Mandestrobin	91.0	101	P/P	40 - 150
2297068	MCPP	95.2	99.5	P/P	40 - 150
2297068	Naproxen	92.7	82.5	P/P	40 - 150
2297068	Primidone	116	108	P/P	40 - 150
2297068	Pyraclostrobin	90.3	101	P/P	40 - 150
2297068	Silvex	99.0	101	P/P	40 - 150
2297068	Thiamethoxam	103	108	P/P	40 - 150
2297068	Tolfenpyrad	46.9	68.0	P/P	30 - 150
2297068	Triclopyr	91.5	101	P/P	40 - 150

Reference Method: SM 5310 B-2011

Batch ID: P408350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2297650	Organic Carbon	97.4	98.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P408091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297259	Turbidity	0.551	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P408204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297130	Chloride	0.376	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P408412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297347	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P408284

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297347	Kjeldahl Nitrogen	0.684	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P408222

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297166	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P408058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297137	Total-P	0.454	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P408077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297076	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P408157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297416	Aldrin	20.0	Spike	P	0 - 37
2297416	Alpha-BHC	9.70	Spike	P	0 - 16

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P408157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297416	Alpha-Chlordane	0.973	Spike	P	0 - 28
2297416	Beta-BHC	21.8	Spike	P	0 - 32
2297416	Beta-Cyfluthrin	11.3	Spike	P	0 - 41
2297416	Bifenthrin	18.3	Spike	P	0 - 36
2297416	Carbophenothion	15.4	Spike	P	0 - 30
2297416	Chlorothalonil	48.5	Spike	P	0 - 54
2297416	Cis-Nonachlor	6.38	Spike	P	0 - 33
2297416	Cypermethrin	5.98	Spike	P	0 - 38
2297416	Dacthal	13.1	Spike	P	0 - 23
2297416	DDD-p,p'	3.62	Spike	P	0 - 35
2297416	DDE-p,p'	3.91	Spike	P	0 - 27
2297416	DDT-p,p'	8.13	Spike	P	0 - 31
2297416	Delta-BHC	27.5	Spike	P	0 - 30
2297416	Deltamethrin	6.13	Spike	P	0 - 76
2297416	Dichlobenil	5.26	Spike	P	0 - 33
2297416	Dicofol	6.47	Spike	P	0 - 24
2297416	Dieldrin	5.13	Spike	P	0 - 35
2297416	Endosulfan I	9.12	Spike	P	0 - 25
2297416	Endosulfan II	13.9	Spike	P	0 - 31
2297416	Endosulfan Sulfate	14.8	Spike	P	0 - 38
2297416	Endrin	8.79	Spike	P	0 - 53
2297416	Endrin Aldehyde	8.45	Spike	P	0 - 81
2297416	Endrin Ketone	11.1	Spike	P	0 - 33
2297416	Esfenvalerate	2.52	Spike	P	0 - 46
2297416	Ethalfuralin	13.2	Spike	P	0 - 22
2297416	Fenpropathrin	8.37	Spike	P	0 - 29
2297416	Gamma-BHC	13.2	Spike	P	0 - 17
2297416	Gamma-Chlordane	6.03	Spike	P	0 - 28
2297416	Heptachlor	12.3	Spike	P	0 - 28
2297416	Heptachlor Epoxide	1.99	Spike	P	0 - 23
2297416	Hexachlorobenzene	3.52	Spike	P	0 - 22
2297416	Kepone	32.1	Spike	P	0 - 61
2297416	Lambda-Cyhalothrin	2.18	Spike	P	0 - 52
2297416	Methoprene	15.9	Spike	P	0 - 38
2297416	Methoxychlor	12.5	Spike	P	0 - 29
2297416	MGK-264	14.2	Spike	P	0 - 41
2297416	Mirex	4.27	Spike	P	0 - 39
2297416	Oxychlordane	12.7	Spike	P	0 - 33
2297416	Permethrin	17.2	Spike	P	0 - 39
2297416	Phenothrin	11.1	Spike	P	0 - 52
2297416	Piperonyl Butoxide	5.66	Spike	P	0 - 91
2297416	Prallethrin	10.4	Spike	P	0 - 34
2297416	Tau-Fluvalinate	8.00	Spike	P	0 - 41
2297416	Tetramethrin	33.7	Spike	P	0 - 43
2297416	Trans-Nonachlor	3.93	Spike	P	0 - 31
2297416	Triclosan Methyl	12.5	Spike	P	0 - 24
2297416	Trifluralin	12.4	Spike	P	0 - 23

Quality Assurance Report Precision

Reference Method: EPA 8276

Batch ID: P408157

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297431	Chlordane	9.23	Spike	P	0 - 30
2297431	Toxaphene	17.7	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P408153

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297068	Acesulfame K	1.73	Spike	P	0 - 30
2297068	AMPA	1.36	Spike	P	0 - 30
2297068	Endothall	3.97	Spike	P	0 - 30
2297068	Glufosinate	1.28	Spike	P	0 - 30
2297068	Glyphosate	1.36	Spike	P	0 - 30
2297068	Sucralose	0.297	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P408154

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297068	2,4-D	22.7	Spike	P	0 - 30
2297068	2,4,5-T	3.35	Spike	P	0 - 30
2297068	Acetaminophen	7.61	Spike	P	0 - 30
2297068	Acetamiprid	0.168	Spike	P	0 - 30
2297068	Afidopyropen	7.22	Spike	P	0 - 30
2297068	Bentazon	21.7	Spike	P	0 - 30
2297068	Benzovindiflupyr	5.71	Spike	P	0 - 30
2297068	Carbamazepine	9.58	Spike	P	0 - 30
2297068	Clothianidin	2.11	Spike	P	0 - 30
2297068	Dinotefuran	1.82	Spike	P	0 - 30
2297068	Diuron	10.4	Spike	P	0 - 30
2297068	Fenuron	4.57	Spike	P	0 - 30
2297068	Fluridone	0.713	Spike	P	0 - 30
2297068	Hydrocodone	5.99	Spike	P	0 - 30
2297068	Ibuprofen	1.47	Spike	P	0 - 30
2297068	Imazapyr	21.3	Spike	P	0 - 30
2297068	Imidacloprid	6.99	Spike	P	0 - 30
2297068	Linuron	4.26	Spike	P	0 - 30
2297068	Mandestrobin	10.6	Spike	P	0 - 30
2297068	MCPP	4.45	Spike	P	0 - 30
2297068	Naproxen	11.6	Spike	P	0 - 30
2297068	Primidone	7.49	Spike	P	0 - 30
2297068	Pyraclostrobin	11.3	Spike	P	0 - 30
2297068	Silvex	2.44	Spike	P	0 - 30
2297068	Thiamethoxam	4.71	Spike	P	0 - 30
2297068	Tolfenpyrad	36.8	Spike	F	0 - 30
2297068	Triclopyr	10.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P408084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297133	Color (true)	3.21	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P408144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297164	Total Alkalinity	0.541	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P408444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297056	TDS	2.52	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P408146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297164	Fluoride	0.476	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P408350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2297650	Organic Carbon	0.838	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2297350

Field Sample ID: G1TLHR0048

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	82.0	P	29 - 123
EPA 8270E	Tetrachloro-m-xylene	48.2	P	24 - 97.0
EPA 8276	Decachlorobiphenyl	58.8	P	29 - 92.0
EPA 8276	PCNB	63.7	P	43 - 134

Lab Sample ID: 2297351

Field Sample ID: G1TLHR0136

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	127	P	30 - 160
EPA 8321B	Carbamazepine-d10	106	P	30 - 160
EPA 8321B	Diuron-d6	79.8	P	30 - 160
EPA 8321B	Endothall-d6	96.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.4	P	30 - 160
EPA 8321B	Primidone-d5	85.8	P	30 - 160
EPA 8321B	Sucralose-d6	106	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A109660

Included Lab Sample IDs: 2297348

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

Reference Method: SM 2120 B-2011

Run ID: A109673

Included Lab Sample IDs: 2297346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A109676

Included Lab Sample IDs: 2297346

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

Reference Method: SM 2320 B-2011

Run ID: A109691

Included Lab Sample IDs: 2297346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	94.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A109691

Included Lab Sample IDs: 2297346

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A109717

Included Lab Sample IDs: 2297346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	105	107	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A109728

Included Lab Sample IDs: 2297347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A109742

Included Lab Sample IDs: 2297351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	98.2	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A109742
Included Lab Sample IDs: 2297351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	101	108	P/P	60 - 160
Glyphosate	99.3	107	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A109772
Included Lab Sample IDs: 2297351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.2	88.7	P/P	50 - 150
2,4,5-T	104	101	P/P	50 - 150
Acetaminophen	101	88.7	P/P	60 - 160
Acetamiprid	104	94.8	P/P	50 - 150
Afidopyropen	113	127	P/P	50 - 150
Bentazon	102	105	P/P	50 - 160
Benzovindiflupyr	98.8	90.3	P/P	50 - 150
Carbamazepine	103	109	P/P	60 - 150
Clothianidin	118	108	P/P	60 - 150
Dinotefuran	105	109	P/P	50 - 150
Diuron	112	109	P/P	60 - 160
Fenuron	103	100	P/P	60 - 150
Fluridone	103	100	P/P	60 - 160
Hydrocodone	112	106	P/P	60 - 150
Ibuprofen	83.4	86.8	P/P	50 - 160
Imazapyr	90.4	95.5	P/P	50 - 150
Imidacloprid	106	104	P/P	60 - 150
Linuron	99.7	96.9	P/P	60 - 150
Mandestrobin	104	114	P/P	50 - 150
MCPP	103	93.8	P/P	50 - 150
Naproxen	101	140	P/P	50 - 160
Primidone	95.2	68.6	P/P	60 - 150
Pyraclostrobin	108	117	P/P	60 - 150
Silvex	130	93.5	P/P	50 - 150
Thiamethoxam	113	108	P/P	50 - 150
Tolfenpyrad	109	134	P/P	60 - 150
Triclopyr	113	113	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A109773
Included Lab Sample IDs: 2297351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	105	94.9	P/P	60 - 160
Endothall	86.7	96.9	P/P	60 - 160
Sucralose	84.5	88.6	P/P	60 - 160

Reference Method: SM 5310 B-2011
Run ID: A109789
Included Lab Sample IDs: 2297347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A109793
 Included Lab Sample IDs: 2297350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	92.4		P	80 - 120
Alpha-BHC	95.3		P	80 - 120
Alpha-Chlordane	95.3		P	80 - 120
Beta-BHC	97.8		P	80 - 120
Beta-Cyfluthrin	89.9		P	80 - 120
Bifenthrin	96.5		P	80 - 120
Carbophenothion	88.7		P	80 - 120
Chlorothalonil	98.4		P	80 - 120
Cis-Nonachlor	90.9		P	80 - 120
Cypermethrin	90.3		P	80 - 120
Dacthal	93.1		P	80 - 120
DDD-p,p'	90.9		P	80 - 120
DDE-p,p'	94.8		P	80 - 120
DDT-p,p'	92.2		P	80 - 120
Delta-BHC	95.5		P	80 - 120
Deltamethrin	90.7		P	80 - 120
Dichlobenil	97.3		P	80 - 120
Dicofol	102		P	80 - 120
Dieldrin	91.3		P	80 - 120
Endosulfan I	95.7		P	80 - 120
Endosulfan II	90.7		P	80 - 120
Endosulfan Sulfate	84.6		P	80 - 120
Endrin	89.1		P	80 - 120
Endrin Aldehyde	90.2		P	80 - 120
Endrin Ketone	92.1		P	80 - 120
Esfenvalerate	94.7		P	80 - 120
Ethalfuralin	95.9		P	80 - 120
Fenpropathrin	92.6		P	80 - 120
Gamma-BHC	95.9		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	88.6		P	80 - 120
Heptachlor Epoxide	93.0		P	80 - 120
Hexachlorobenzene	95.0		P	80 - 120
Kepone	70.1*		F	80 - 120
Lambda-Cyhalothrin	95.3		P	80 - 120
Methoprene	88.9		P	80 - 120
Methoxychlor	105		P	80 - 120
MGK-264	87.2		P	80 - 120
Mirex	90.1		P	80 - 120
Oxychlordane	82.7		P	80 - 120
Permethrin	90.5		P	80 - 120
Phenothrin	94.9		P	80 - 120
Piperonyl Butoxide	84.8		P	80 - 120
Prallethrin	82.5		P	80 - 120
Tau-Fluvalinate	95.0		P	80 - 120
Tetramethrin	91.2		P	80 - 120
Trans-Nonachlor	97.4		P	80 - 120
Triclosan Methyl	96.2		P	80 - 120
Trifluralin	99.4		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A109815

Included Lab Sample IDs: 2297347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	92.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A109818

Included Lab Sample IDs: 2297347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.2	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A109821

Included Lab Sample IDs: 2297350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	98.1		P	80 - 120
Toxaphene	99.3		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A109846

Included Lab Sample IDs: 2297347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.8	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					0.551	
EPA 300.0 Rev. 2.1	Chloride	105	104	106			0.376
	Sulfate	103					
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	97.2	98.4			1.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	102	101			0.684
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	102	102			0.491
EPA 365.1 Rev. 2.0	Total-P	108					0.454
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	102	102			0.0
EPA 8270E	Aldrin	52.2	53.9	44.1			20.0
	Alpha-BHC	93.7	87.9	79.8			9.70
	Alpha-Chlordane	80.7	66.3	65.7			0.973
	Beta-BHC	109	118	95.2			21.8
	Beta-Cyfluthrin	96.3	98.6	88.1			11.3
	Bifenthrin	64.9	58.7	48.8			18.3
	Carbophenothion	58.1	53.8	46.2			15.4
	Chlorothalonil	106	182	111			48.5
	Cis-Nonachlor	76.9	69.6	65.3			6.38
	Cypermethrin	103	78.0	82.8			5.98
	Dacthal	90.7	99.0	86.9			13.1
	DDD-p,p'	79.1	74.8	72.2			3.62
	DDE-p,p'	74.8	70.0	67.3			3.91
	DDT-p,p'	75.8	67.3	62.0			8.13
	Delta-BHC	111	127	96.6			27.5
	Deltamethrin	92.2	101	95.0			6.13
	Dichlobenil	87.5	69.6	66.0			5.26
	Dicofol	78.1	75.5	70.8			6.47
	Dieldrin	82.2	70.2	66.7			5.13
	Endosulfan I	79.0	77.2	70.5			9.12
	Endosulfan II	89.2	83.5	72.7			13.9
	Endosulfan Sulfate	101	80.9	69.7			14.8
	Endrin	85.5	68.4	62.6			8.79
	Endrin Aldehyde	90.4	63.7	58.5			8.45
	Endrin Ketone	91.9	87.7	78.5			11.1
	Esfenvalerate	92.5	89.1	86.9			2.52
	Ethalfuralin	74.3	76.1	66.7			13.2
	Fenpropathrin	87.8	67.4	62.0			8.37
	Gamma-BHC	95.9	98.4	86.2			13.2
	Gamma-Chlordane	74.7	72.2	68.0			6.03
	Heptachlor	71.8	58.5	51.7			12.3
	Heptachlor Epoxide	83.6	71.2	69.8			1.99
	Hexachlorobenzene	74.4	64.4	62.2			3.52
	Kepone	199	151	109			32.1
	Lambda-Cyhalothrin	94.3	83.6	85.5			2.18
	Methoprene	58.2	64.7	55.1			15.9
	Methoxychlor	96.8	88.8	78.3			12.5
	MGK-264	84.8	87.3	75.8			14.2
	Mirex	59.4	56.2	53.8			4.27
	Oxychlordane	87.1	69.7	61.3			12.7
	Permethrin	95.7	68.4	81.2			17.2
	Phenothrin	59.2	52.8	47.3			11.1
	Piperonyl Butoxide	108	102	96.8			5.66
	Prallethrin	76.4	77.4	69.7			10.4
	Tau-Fluvalinate	79.4	78.0	72.0			8.00
	Tetramethrin	85.6	94.4	67.1			33.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8270E	Trans-Nonachlor	72.0	69.8	67.1		3.93
	Triclosan Methyl	81.7	91.0	80.3		12.5
	Trifluralin	73.0	77.2	68.2		12.4
EPA 8276	Chlordane	77.5	89.0	97.6		9.23
	Toxaphene	64.6	67.7	80.9		17.7
EPA 8321B	2,4-D	88.0	79.4	99.7		22.7
	2,4,5-T	102	91.9	88.9		3.35
	Acesulfame K	95.5	70.8	69.6		1.73
	Acetaminophen	93.4	91.9	99.2		7.61
	Acetamiprid	90.0	88.6	88.4		0.168
	Afidopyropen	70.2	75.3	70.0		7.22
	AMPA	99.8	97.9	99.2		1.36
	Bentazon	104	81.0	101		21.7
	Benzovindiflupyr	82.0	80.2	85.0		5.71
	Carbamazepine	93.8	87.2	96.0		9.58
	Clothianidin	84.9	103	105		2.11
	Dinotefuran	104	103	105		1.82
	Diuron	83.3	73.3	81.4		10.4
	Endothall	85.4	98.3	94.5		3.97
	Fenuron	102	98.2	103		4.57
	Fluridone	91.6	87.6	87.0		0.713
	Glufosinate	104	106	105		1.28
	Glyphosate	104	102	104		1.36
	Hydrocodone	97.4	89.3	94.8		5.99
	Ibuprofen	108	80.0	81.2		1.47
	Imazapyr	88.5	78.1	96.7		21.3
	Imidacloprid	101	89.3	95.8		6.99
	Linuron	81.2	95.0	91.0		4.26
	Mandestrobin	93.2	91.0	101		10.6
	MCPP	96.1	95.2	99.5		4.45
	Naproxen	74.8	92.7	82.5		11.6
	Primidone	85.9	116	108		7.49
	Pyraclostrobin	81.2	90.3	101		11.3
	Silvex	92.5	99.0	101		2.44
	Sucralose	86.3	89.8	90.1		0.297
	Thiamethoxam	106	103	108		4.71
	Tolfenpyrad	58.2	46.9	68.0		36.8
	Triclopyr	108	91.5	101		10.1
SM 2120 B-2011	Color (true)	102				3.21
SM 2320 B-2011	Total Alkalinity	98.0				0.541
SM 2540 C-2011	TDS					2.52
SM 4500 F-C-2011	Fluoride	100				0.476
SM 5310 B-2011	Organic Carbon	95.2	97.4	98.8		0.838

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2297346
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2297346
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2297346
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2297347
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2297347
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2297347

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2297347
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2297348
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2297350
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2297350
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2297351
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2297346
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2297346
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2297346
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2297346
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2297346
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2297347

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	01/04/2022			01/04/2022 17:53	Khloe J Berg	2297346
EPA 300.0 Rev. 2.1	01/04/2022			01/05/2022 19:43	Roberta Tatti	2297346
EPA 350.1 Rev. 2.0	01/04/2022			01/12/2022 10:33	Ping Hua	2297347
EPA 351.2 Rev. 2.0	01/04/2022	01/11/2022 11:32	Samantha L Bates	01/12/2022 10:30	Alexandra J Mattheus	2297347
EPA 353.2 Rev. 2.0	01/04/2022			01/07/2022 10:53	Beverly Y. Sanders	2297347
EPA 365.1 Rev. 2.0	01/04/2022	01/05/2022 15:30	Simonne.V. Calhoun	01/13/2022 13:37	Shengyu Ding	2297347
EPA 365.1 Rev. 2.0 dissolved	01/04/2022			01/04/2022 13:14	Blanca Fach	2297348
EPA 8270E	01/04/2022	01/10/2022 08:00	Fe-Val Siddell	01/11/2022 17:19	Vandana T. Nagar	2297350
EPA 8276	01/04/2022	01/10/2022 08:00	Fe-Val Siddell	01/12/2022 09:02	Arthur Maknenko	2297350
EPA 8321B	01/04/2022	01/07/2022 10:00	Juyoung Kim	01/07/2022 12:11	Juyoung Kim	2297351
	01/04/2022	01/07/2022 10:00	Juyoung Kim	01/07/2022 12:15	Juyoung Kim	2297351
	01/04/2022	01/07/2022 13:00	Hoor Shaik	01/08/2022 08:16	Juyoung Kim	2297351
SM 2120 B-2011	01/04/2022			01/04/2022 17:40	Sarah A Nixon	2297346
SM 2320 B-2011	01/04/2022			01/05/2022 19:15	Dale L. Simmons	2297346
SM 2540 C-2011	01/04/2022			01/07/2022 14:36	Yijie Li	2297346
SM 2540 D-2011	01/04/2022			01/07/2022 14:36	Yijie Li	2297346
SM 4500 F-C-2011	01/04/2022			01/05/2022 19:15	Dale L. Simmons	2297346
SM 5310 B-2011	01/04/2022			01/10/2022 00:45	Touraj Touran	2297347