

Chemical Analysis Report

SE-DIST-2018-09-07-02

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

Event Description: **SMP- Blank**
Request ID: **RQ-2018-09-03-55**
Customer: **SE-DIST**
Project ID: **SMP**

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

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 02-OCT-2018 11:10



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 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: Sweetwater Branch @441

Collection Date/Time: 09/06/2018 13:00

Field ID: Blank_06092018

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023214	EPA 180.1 Rev. 2.0	Turbidity	0.20		NTU	P351325	
	EPA 300.0 Rev. 2.1	Chloride	0.33	I	mg Cl/L	P351984	
		Sulfate	0.20	U	mg SO4/L	P351988	
	SM 2120 B	Color (true)	2.5	U	PCU	P351300	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P351534	
	SM 2540 C-97	TDS	15	U	mg/L	P351795	
	SM 2540 D-97	TSS	2	U	mg/L	P351728	
	SM 4500 F-C-97	Fluoride	0.24		mg F/L	P351537	
2023215	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P351607	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P351494	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351587	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P351473	
	SM 5310 B-00	Organic Carbon	0.82	I	mg C/L	P351875	
2023216	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P351305	
2023241	EPA 8321B	Aldicarb	0.020	U	ug/L	P351258	
		Aldicarb Sulfone	0.0020	U	ug/L	P351258	
		Aldicarb Sulfoxide	0.0020	U	ug/L	P351258	
		Carbaryl	0.0020	U	ug/L	P351258	
		Carbofuran	0.0020	U	ug/L	P351258	
		3-Hydroxycarbofuran	0.0020	U	ug/L	P351258	
		Methiocarb	0.0020	U	ug/L	P351258	
		Methomyl	0.0020	U	ug/L	P351258	
		Oxamyl	0.0020	U	ug/L	P351258	
		Propoxur	0.0020	U	ug/L	P351258	
2023242		2,4-D	0.0020	U	ug/L	P351258	
		Sucralose**	0.010	U	ug/L	P351269	
		Bentazon	8.0E-04	UJ	ug/L	P351258	RPD
		MCP	0.0020	U	ug/L	P351258	
		Triclopyr**	0.0040	U	ug/L	P351258	
		Imidacloprid	0.0020	U	ug/L	P351258	
		Diuron	0.0020	U	ug/L	P351258	
		Pyraclostrobin**	0.0020	U	ug/L	P351258	
		Primidone**	0.0040	U	ug/L	P351258	
		Linuron	0.0040	U	ug/L	P351258	
		Acetaminophen**	0.0080	U	ug/L	P351258	
		Fenuron	0.016	U	ug/L	P351258	
		Imazapyr**	0.0040	U	ug/L	P351258	
		Carbamazepine**	8.0E-04	U	ug/L	P351258	
		Fluridone**	4.0E-04	U	ug/L	P351258	
		Hydrocodone**	8.0E-04	U	ug/L	P351258	
		Naproxen**	0.0080	U	ug/L	P351258	
		Ibuprofen**	0.020	U	ug/L	P351258	
		Glyphosate**	0.10	U	ug/L	P351269	

Field ID: Blank_06092018

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023242	EPA 8321B	AMPA**	0.10	U	ug/L	P351269	
		Endothall**	0.10	U	ug/L	P351269	MS
		Glufosinate**	0.10	U	ug/L	P351269	
		Acesulfame K**	0.10	U	ug/L	P351269	MS
2023243	EPA 8270D	Aldrin	4.2	U	ng/L	P351495	
		Alpha-BHC	2.1	U	ng/L	P351495	
		Beta-BHC	4.2	UJ	ng/L	P351495	MS
		Delta-BHC	4.2	U	ng/L	P351495	
		Gamma-BHC	4.2	U	ng/L	P351495	
		Carbophenothion	4.2	U	ng/L	P351495	
		Chlorothalonil	2.1	U	ng/L	P351495	
		Cypermethrin	21	U	ng/L	P351495	
		DDD-p,p'	3.1	U	ng/L	P351495	
		DDE-p,p'	3.1	U	ng/L	P351495	
		DDT-p,p'	3.1	U	ng/L	P351495	
		Dieldrin	4.2	U	ng/L	P351495	
		Endosulfan I	4.2	U	ng/L	P351495	
		Endosulfan II	4.2	U	ng/L	P351495	
		Endosulfan Sulfate	2.1	U	ng/L	P351495	
		Endrin	2.1	U	ng/L	P351495	
		Endrin Aldehyde	2.1	U	ng/L	P351495	
		Heptachlor	1.6	U	ng/L	P351495	
		Heptachlor Epoxide	2.1	U	ng/L	P351495	
		Methoxychlor	4.2	U	ng/L	P351495	
		Mirex	2.1	U	ng/L	P351495	
		Permethrin	10	U	ng/L	P351495	
		Trifluralin	1.0	U	ng/L	P351495	
		Alpha-Chlordane	1.0	U	ng/L	P351495	
		Gamma-Chlordane	1.0	U	ng/L	P351495	
		Endrin Ketone	2.1	U	ng/L	P351495	
		Dicofol	31	U	ng/L	P351495	
		Chlordane	2.6	U	ng/L	P351495	
		Toxaphene	31	U	ng/L	P351495	
2023244	EPA 8270D	Alachlor	0.24	U	ng/L	P351254	
		Ametryn	0.31	U	ng/L	P351254	
		Atrazine	0.24	U	ng/L	P351254	
		Atrazine Desethyl	1.4	U	ng/L	P351254	MS
		Azinphos Methyl	2.1	U	ng/L	P351254	
		Bromacil	0.48	U	ng/L	P351254	
		Butylate	0.38	UJ	ng/L	P351254	RPD
		Chlorpyrifos Ethyl	0.24	U	ng/L	P351254	
		Chlorpyrifos Methyl	0.095	U	ng/L	P351254	
		Demeton	1.9	U	ng/L	P351254	
		Diazinon	0.12	U	ng/L	P351254	
		Disulfoton	0.48	U	ng/L	P351254	
	EPA 8276	Chlordane	2.6	U	ng/L	P351495	
		Toxaphene	31	U	ng/L	P351495	
		Alachlor	0.24	U	ng/L	P351254	
		Ametryn	0.31	U	ng/L	P351254	

Field ID: Blank_06092018

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2023244	EPA 8270D	EPTC	1.2	U	ng/L	P351254	RPD
		Ethion	0.14	U	ng/L	P351254	MS, RPD
		Ethoprop	0.095	U	ng/L	P351254	
		Fenamiphos	0.24	U	ng/L	P351254	
		Fipronil	0.24	U	ng/L	P351254	RPD
		Fipronil Sulfide	0.14	U	ng/L	P351254	
		Fipronil Sulfone	0.14	U	ng/L	P351254	RPD
		Hexazinone	0.48	U	ng/L	P351254	
		Malathion	0.33	U	ng/L	P351254	
		Metribuzin	0.19	U	ng/L	P351254	MS
		Mevinphos	0.48	U	ng/L	P351254	
		Molinate	0.29	U	ng/L	P351254	
		Norflurazon	0.48	U	ng/L	P351254	MS, RPD
		Pendimethalin	0.95	U	ng/L	P351254	
		Phorate	0.24	U	ng/L	P351254	
		Prometon	0.86	U	ng/L	P351254	
		Prometryn	0.19	U	ng/L	P351254	
		Simazine	0.48	U	ng/L	P351254	
		Terbufos	0.095	U	ng/L	P351254	
		Terbutylazine	0.40	U	ng/L	P351254	
		Fonofos	0.19	U	ng/L	P351254	
		Metalaxyl	0.24	U	ng/L	P351254	
		Metolachlor	0.24	U	ng/L	P351254	
		Acetochlor	0.24	U	ng/L	P351254	
		Cyanazine	0.48	U	ng/L	P351254	
		Parathion Ethyl	0.24	U	ng/L	P351254	
		Parathion Methyl	0.24	U	ng/L	P351254	
2023268	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P351394	
		Iron	30	U	ug/L	P351394	
		Magnesium	0.040	U	mg/L	P351394	
		Potassium	0.30	U	mg/L	P351394	
		Sodium	0.50	U	mg/L	P351394	
		Zinc	5.0	U	ug/L	P351394	
	EPA 200.8 Rev. 5.4	Arsenic	0.050	U	ug/L	P351394	
		Cadmium	0.020	U	ug/L	P351394	
		Chromium	0.40	U	ug/L	P351394	
		Copper	0.20	U	ug/L	P351394	
		Lead	0.050	U	ug/L	P351394	
		Nickel	0.20	U	ug/L	P351394	
		Silver	0.010	U	ug/L	P352390	

Matrix: DI-WATER

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The result was confirmed on 09/07/2018.

EPA 300.0 Rev. 2.1: Chloride: The result was confirmed on 09/24/2018.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

SM 4500 F-C-97: The result was confirmed on 09/14/2018.

SM 5310 B-00: The result was confirmed on 9/18/2018.

EPA 8321B: Insufficient sample to perform duplicate matrix spikes.

EPA 8321B: Insufficient sample to perform matrix spikes. Refer to the narrative for an explanation of QC Codes.

EPA 8270D: Refer to the narrative for an explanation of QC Codes.

EPA 8276: MS accuracy for Chlordane not assessed due to high content of this parameter in the sample spiked.

EPA 8270D: Refer to the narrative for an explanation of QC Codes. MS accuracies for Atrazine and Hexazinone not assessed due to high content of these parameters in the sample spiked.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351325

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351394

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
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351394

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352390

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

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

Reference Method: EPA 8270D
Batch ID: P351254

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.2	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	0.50	U	ng/L
Demeton	2.0	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.50	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metaxyl	0.25	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P351254

Component	Result	Code	Units
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8270D
Batch ID: P351495

Component	Result	Code	Units
Aldrin	4.0	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	4.0	U	ng/L
Carbophenothion	4.0	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cypermethrin	20	U	ng/L
DDD-p,p'	3.0	U	ng/L
DDE-p,p'	3.0	U	ng/L
DDT-p,p'	3.0	U	ng/L
Delta-BHC	4.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	4.0	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Gamma-BHC	4.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Methoxychlor	4.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Trifluralin	1.0	U	ng/L

Reference Method: EPA 8276
Batch ID: P351495

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Toxaphene	30	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P351258

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
3-Hydroxycarbofuran	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Aldicarb	0.020	U	ug/L
Aldicarb Sulfone	0.0020	U	ug/L
Aldicarb Sulfoxide	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Carbaryl	0.0020	U	ug/L
Carbofuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	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
MCPP	0.0020	U	ug/L
Methiocarb	0.0020	U	ug/L
Methomyl	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Oxamyl	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Propoxur	0.0020	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P351269

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.10	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
Batch ID: P351300

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P351534

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P351795

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351728

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351875

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: P351394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	97.2		P	85 - 115
Iron	108		P	85 - 115
Magnesium	99.4		P	85 - 115
Potassium	105		P	85 - 115
Sodium	97.8		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351394

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	99.4		P	85 - 115
Cadmium	96.9		P	85 - 115
Chromium	94.7		P	85 - 115
Copper	97.8		P	85 - 115
Lead	90.8		P	85 - 115
Nickel	97.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	96.9		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	96.9		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.9		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P351254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	98.8	102	P/P	74 - 119
Alachlor	97.5	100	P/P	75 - 118
Ametryn	99.7	99.0	P/P	59 - 137
Atrazine	106	106	P/P	73 - 120
Atrazine Desethyl	71.5	88.9	P/P	19 - 129
Azinphos Methyl	125	129	P/P	65 - 181
Bromacil	87.4	94.8	P/P	43 - 123
Butylate	54.8	38.9	P/P	28 - 85.0
Chlorpyrifos Ethyl	98.0	98.6	P/P	55 - 112
Chlorpyrifos Methyl	94.3	93.5	P/P	35 - 124
Cyanazine	136	155	P/P	26 - 262
Demeton	85.7	74.2	P/P	43 - 122
Diazinon	115	109	P/P	72 - 120
Disulfoton	98.2	91.7	P/P	45 - 137
EPTC	57.8	45.3	P/P	28 - 95.0
Ethion	88.5	93.1	P/P	63 - 127
Ethoprop	89.5	77.0	P/P	63 - 109
Fenamiphos	91.4	101	P/P	66 - 136
Fipronil	99.4	106	P/P	63 - 126
Fipronil Sulfide	84.3	88.8	P/P	59 - 123
Fipronil Sulfone	82.3	85.8	P/P	56 - 122
Fonofos	97.2	89.4	P/P	64 - 114
Hexazinone	103	98.2	P/P	49 - 144
Malathion	99.5	105	P/P	68 - 131
Metaxyl	100	103	P/P	57 - 126
Metolachlor	94.6	99.6	P/P	75 - 118
Metribuzin	125	144	P/P	46 - 169
Mevinphos	84.7	73.2	P/P	34 - 126
Molinate	56.8	48.4	P/P	37 - 101
Norflurazon	91.8	96.7	P/P	63 - 127
Parathion Ethyl	96.9	95.7	P/P	78 - 109
Parathion Methyl	113	103	P/P	74 - 123
Pendimethalin	120	116	P/P	51 - 130
Phorate	65.5	69.7	P/P	53 - 116

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P351254

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Prometon	115	109	P/P	66 - 124
Prometryn	98.2	105	P/P	66 - 124
Simazine	97.7	96.6	P/P	62 - 134
Terbufos	100	91.9	P/P	59 - 115
Terbutylazine	95.0	104	P/P	76 - 113

Reference Method: EPA 8270D
Batch ID: P351495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	69.0	56.5	P/P	26 - 96.0
Alpha-BHC	81.6	63.7	P/P	51 - 123
Alpha-Chlordane	91.9	80.2	P/P	45 - 120
Beta-BHC	112	110	P/P	43 - 146
Carbophenothion	95.9	82.0	P/P	26 - 179
Chlorothalonil	89.1	89.9	P/P	10 - 215
Cypermethrin	110	93.4	P/P	35 - 169
DDD-p,p'	102	91.1	P/P	49 - 131
DDE-p,p'	92.5	80.0	P/P	39 - 127
DDT-p,p'	91.0	77.7	P/P	49 - 120
Delta-BHC	112	106	P/P	49 - 187
Dicofol	88.2	88.2	P/P	10 - 129
Dieldrin	101	88.9	P/P	46 - 132
Endosulfan I	97.0	89.7	P/P	57 - 130
Endosulfan II	104	94.7	P/P	52 - 148
Endosulfan Sulfate	103	92.3	P/P	55 - 129
Endrin	104	90.6	P/P	45 - 133
Endrin Aldehyde	114	105	P/P	26 - 140
Endrin Ketone	104	96.3	P/P	60 - 125
Gamma-BHC	103	98.8	P/P	50 - 145
Gamma-Chlordane	87.5	76.5	P/P	44 - 118
Heptachlor	73.0	62.6	P/P	35 - 106
Heptachlor Epoxide	93.5	85.4	P/P	52 - 123
Methoxychlor	102	94.5	P/P	54 - 132
Mirex	78.1	61.7	P/P	36 - 107
Permethrin	86.9	73.0	P/P	47 - 135
Trifluralin	84.4	74.6	P/P	32 - 228

Reference Method: EPA 8276
Batch ID: P351495

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	76.1	88.5	P/P	47 - 125
Toxaphene	64.2	71.7	P/P	46 - 147

Reference Method: EPA 8321B
Batch ID: P351258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.7	97.3	P/P	40 - 150
3-Hydroxycarbofuran	98.5	97.2	P/P	40 - 150
Acetaminophen	134	135	P/P	30 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P351258

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldicarb	109	103	P/P	30 - 150
Aldicarb Sulfone	98.6	99.9	P/P	40 - 150
Aldicarb Sulfoxide	96.5	112	P/P	40 - 150
Bentazon	96.3	148	P/P	30 - 150
Carbamazepine	87.3	90.0	P/P	40 - 150
Carbaryl	70.9	80.4	P/P	40 - 150
Carbofuran	72.3	85.1	P/P	40 - 150
Diuron	81.2	91.2	P/P	40 - 150
Fenuron	95.2	115	P/P	40 - 150
Fluridone	103	114	P/P	40 - 150
Hydrocodone	105	113	P/P	40 - 150
Ibuprofen	81.5	95.1	P/P	40 - 150
Imazapyr	75.7	80.1	P/P	40 - 150
Imidacloprid	94.4	100	P/P	40 - 160
Linuron	71.7	72.9	P/P	40 - 150
MCPP	91.4	116	P/P	40 - 150
Methiocarb	68.3	77.9	P/P	40 - 150
Methomyl	108	103	P/P	40 - 150
Naproxen	102	93.2	P/P	40 - 150
Oxamyl	103	98.8	P/P	40 - 150
Primidone	80.8	95.6	P/P	40 - 150
Propoxur	69.1	79.7	P/P	40 - 150
Pyraclostrobin	78.6	91.2	P/P	40 - 150
Triclopyr	98.2	118	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P351269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	74.1		P	40 - 150
AMPA	100		P	40 - 150
Endothall	89.1		P	40 - 150
Glufosinate	95.5		P	40 - 150
Glyphosate	74.7		P	40 - 140
Sucralose	92.1		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P351300

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P351534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022955	Calcium	101		P	80 - 120
2022955	Iron	105	105	P/P	80 - 120
2022955	Magnesium	99.3		P	80 - 120
2022955	Potassium	102	102	P/P	80 - 120
2022955	Sodium	100		P	80 - 120
2022955	Zinc	98.7	98.5	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351394

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022955	Arsenic	98.2	97.2	P/P	80 - 120
2022955	Cadmium	100	97.9	P/P	80 - 120
2022955	Chromium	92.1	91.0	P/P	80 - 120
2022955	Copper	94.2	94.6	P/P	80 - 120
2022955	Lead	91.0	90.6	P/P	80 - 120
2022955	Nickel	95.0	95.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2028316	Silver	94.6		P	80 - 120
2028580	Silver	94.2	89.9	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023174	Chloride	98.2		P	90 - 110
2023721	Chloride	99.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023174	Sulfate	98.3		P	90 - 110
2023721	Sulfate	98.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023164	Ammonia-N	98.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023167	Kjeldahl Nitrogen	105	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P351587

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023166	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P351473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023230	Total-P	96.4	99.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P351305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023173	O-Phosphate-P	98.0	98.5	P/P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P351254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022302	Acetochlor	97.1	104	P/P	67 - 125
2022302	Alachlor	91.1	106	P/P	69 - 123
2022302	Ametryn	78.3	100	P/P	52 - 151
2022302	Atrazine Desethyl	116	148	P/F	10 - 129
2022302	Azinphos Methyl	135	127	P/P	48 - 200
2022302	Bromacil	83.3	109	P/P	46 - 130
2022302	Butylate	46.2	37.6	P/P	10 - 85.0
2022302	Chlorpyrifos Ethyl	96.4	93.4	P/P	54 - 115
2022302	Chlorpyrifos Methyl	100	98.3	P/P	44 - 117
2022302	Cyanazine	142	191	P/P	10 - 262
2022302	Demeton	86.6	83.8	P/P	24 - 145
2022302	Diazinon	117	123	P/P	66 - 129
2022302	Disulfoton	102	103	P/P	45 - 139
2022302	EPTC	47.9	32.9	P/P	10 - 86.0
2022302	Ethion	54.7	93.3	F/P	59 - 133
2022302	Ethoprop	104	96.8	P/P	54 - 116
2022302	Fenamiphos	79.7	92.5	P/P	55 - 140
2022302	Fipronil	71.2	103	P/P	37 - 142
2022302	Fipronil Sulfide	65.5	86.2	P/P	37 - 130
2022302	Fipronil Sulfone	44.2	85.5	P/P	18 - 143
2022302	Fonofos	103	96.7	P/P	55 - 118
2022302	Malathion	104	97.9	P/P	64 - 132
2022302	Metalaxyl	82.8	104	P/P	55 - 129
2022302	Metolachlor	86.6	95.2	P/P	56 - 137
2022302	Metribuzin	215	220	P/F	16 - 218
2022302	Mevinphos	94.2	96.4	P/P	34 - 129
2022302	Molinate	50.9	41.6	P/P	16 - 99.0
2022302	Norflurazon	23.7	80.6	F/P	43 - 135
2022302	Parathion Ethyl	104	107	P/P	71 - 112
2022302	Parathion Methyl	116	122	P/P	65 - 127
2022302	Pendimethalin	127	126	P/P	35 - 159
2022302	Phorate	79.9	76.4	P/P	41 - 129
2022302	Prometon	106	120	P/P	56 - 140
2022302	Prometryn	95.1	105	P/P	65 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P351254

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022302	Simazine	110	113	P/P	54 - 148
2022302	Terbufos	113	107	P/P	53 - 126
2022302	Terbutylazine	102	112	P/P	73 - 114

Reference Method: EPA 8270D
Batch ID: P351495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023243	Aldrin	60.7	64.7	P/P	26 - 96.0
2023243	Alpha-BHC	104	98.8	P/P	51 - 123
2023243	Alpha-Chlordane	90.7	87.8	P/P	45 - 120
2023243	Beta-BHC	150	145	F/P	43 - 146
2023243	Carbophenothion	93.8	102	P/P	26 - 179
2023243	Chlorothalonil	117	89.3	P/P	10 - 215
2023243	Cypermethrin	124	136	P/P	35 - 169
2023243	DDD-p,p'	103	101	P/P	49 - 131
2023243	DDE-p,p'	88.0	87.5	P/P	39 - 127
2023243	DDT-p,p'	84.4	91.4	P/P	49 - 120
2023243	Delta-BHC	157	131	P/P	49 - 187
2023243	Dicofol	87.8	94.0	P/P	10 - 129
2023243	Dieldrin	93.0	94.1	P/P	46 - 132
2023243	Endosulfan I	94.8	96.2	P/P	57 - 130
2023243	Endosulfan II	109	112	P/P	52 - 148
2023243	Endosulfan Sulfate	103	109	P/P	55 - 129
2023243	Endrin	97.4	97.4	P/P	45 - 133
2023243	Endrin Aldehyde	103	102	P/P	26 - 140
2023243	Endrin Ketone	106	117	P/P	60 - 125
2023243	Gamma-BHC	125	141	P/P	50 - 145
2023243	Gamma-Chlordane	86.6	85.6	P/P	44 - 118
2023243	Heptachlor	65.4	67.7	P/P	35 - 106
2023243	Heptachlor Epoxide	87.5	90.6	P/P	52 - 123
2023243	Methoxychlor	102	107	P/P	54 - 132
2023243	Mirex	67.4	78.0	P/P	36 - 107
2023243	Permethrin	81.5	94.6	P/P	47 - 135
2023243	Trifluralin	75.2	75.3	P/P	32 - 228

Reference Method: EPA 8276
Batch ID: P351495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023767	Toxaphene	55.4	57.4	P/P	39 - 158

Reference Method: EPA 8321B
Batch ID: P351269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023047	Acesulfame K	28.9	30.2	F/F	40 - 150
2023047	AMPA	89.2	97.7	P/P	40 - 150
2023047	Endothall	179	171	F/F	40 - 150
2023047	Glufosinate	62.9	67.8	P/P	40 - 150
2023047	Glyphosate	62.6	70.4	P/P	40 - 140
2023047	Sucralose	112	115	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023223	Fluoride	98.2	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2023178	Organic Carbon	100		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023163	Turbidity	2.21	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P351394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022955	Calcium	0.201	Spike	P	0 - 20
2022955	Iron	0.00840	Spike	P	0 - 20
2022955	Magnesium	0.128	Spike	P	0 - 20
2022955	Potassium	0.0436	Spike	P	0 - 20
2022955	Sodium	0.000343	Spike	P	0 - 20
2022955	Zinc	0.121	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P351394

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022955	Arsenic	1.01	Spike	P	0 - 20
2022955	Cadmium	2.15	Spike	P	0 - 20
2022955	Chromium	1.12	Spike	P	0 - 20
2022955	Copper	0.468	Spike	P	0 - 20
2022955	Lead	0.463	Spike	P	0 - 20
2022955	Nickel	0.989	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P352390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2028580	Silver	4.63	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023174	Chloride	0.135	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023174	Sulfate	0.0848	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351607

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023164	Ammonia-N	2.26	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023167	Kjeldahl Nitrogen	0.812	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351587

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023166	NO2NO3-N	0.962	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023230	Total-P	2.37	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023173	O-Phosphate-P	0.509	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P351254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022302	Acetochlor	6.64	Spike	P	0 - 30
2022302	Alachlor	15.1	Spike	P	0 - 30
2022302	Ametryn	12.4	Spike	P	0 - 30
2022302	Atrazine	4.05	Spike	P	0 - 30
2022302	Atrazine Desethyl	24.2	Spike	P	0 - 30
2022302	Azinphos Methyl	6.31	Spike	P	0 - 30
2022302	Bromacil	26.7	Spike	P	0 - 30
2022302	Butylate	20.4	Spike	P	0 - 30
2022302	Chlorpyrifos Ethyl	3.17	Spike	P	0 - 30
2022302	Chlorpyrifos Methyl	1.94	Spike	P	0 - 30
2022302	Cyanazine	29.6	Spike	P	0 - 30
2022302	Demeton	3.28	Spike	P	0 - 30
2022302	Diazinon	5.28	Spike	P	0 - 30
2022302	Disulfoton	0.925	Spike	P	0 - 30
2022302	EPTC	37.0	Spike	F	0 - 30
2022302	Ethion	52.2	Spike	F	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D
Batch ID: P351254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022302	Ethoprop	6.73	Spike	P	0 - 30
2022302	Fenamiphos	14.9	Spike	P	0 - 30
2022302	Fipronil	32.7	Spike	F	0 - 30
2022302	Fipronil Sulfide	23.3	Spike	P	0 - 30
2022302	Fipronil Sulfone	42.6	Spike	F	0 - 30
2022302	Fonofos	5.89	Spike	P	0 - 30
2022302	Hexazinone	13.3	Spike	P	0 - 30
2022302	Malathion	6.15	Spike	P	0 - 30
2022302	Metalaxyl	16.1	Spike	P	0 - 30
2022302	Metolachlor	7.33	Spike	P	0 - 30
2022302	Metribuzin	1.76	Spike	P	0 - 30
2022302	Mevinphos	2.30	Spike	P	0 - 30
2022302	Molinate	19.9	Spike	P	0 - 30
2022302	Norflurazon	46.2	Spike	F	0 - 30
2022302	Parathion Ethyl	2.75	Spike	P	0 - 30
2022302	Parathion Methyl	4.49	Spike	P	0 - 30
2022302	Pendimethalin	0.553	Spike	P	0 - 30
2022302	Phorate	4.52	Spike	P	0 - 30
2022302	Prometon	12.2	Spike	P	0 - 30
2022302	Prometryn	10.2	Spike	P	0 - 30
2022302	Simazine	2.83	Spike	P	0 - 30
2022302	Terbufos	5.06	Spike	P	0 - 30
2022302	Terbuthylazine	8.99	Spike	P	0 - 30
LFB	Acetochlor	3.27	LCS	P	0 - 30
LFB	Alachlor	2.93	LCS	P	0 - 30
LFB	Ametryn	0.690	LCS	P	0 - 30
LFB	Atrazine	0.150	LCS	P	0 - 30
LFB	Atrazine Desethyl	21.7	LCS	P	0 - 30
LFB	Azinphos Methyl	2.94	LCS	P	0 - 30
LFB	Bromacil	8.18	LCS	P	0 - 30
LFB	Butylate	33.9	LCS	F	0 - 30
LFB	Chlorpyrifos Ethyl	0.646	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	0.921	LCS	P	0 - 30
LFB	Cyanazine	13.2	LCS	P	0 - 30
LFB	Demeton	14.4	LCS	P	0 - 30
LFB	Diazinon	4.88	LCS	P	0 - 30
LFB	Disulfoton	6.82	LCS	P	0 - 30
LFB	EPTC	24.3	LCS	P	0 - 30
LFB	Ethion	5.04	LCS	P	0 - 30
LFB	Ethoprop	15.0	LCS	P	0 - 30
LFB	Fenamiphos	10.4	LCS	P	0 - 30
LFB	Fipronil	6.50	LCS	P	0 - 30
LFB	Fipronil Sulfide	5.24	LCS	P	0 - 30
LFB	Fipronil Sulfone	4.22	LCS	P	0 - 30
LFB	Fonofos	8.36	LCS	P	0 - 30
LFB	Hexazinone	4.43	LCS	P	0 - 30
LFB	Malathion	5.64	LCS	P	0 - 30
LFB	Metalaxyl	3.01	LCS	P	0 - 30
LFB	Metolachlor	5.11	LCS	P	0 - 30
LFB	Metribuzin	14.0	LCS	P	0 - 30
LFB	Mevinphos	14.6	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P351254

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Molinate	16.0	LCS	P	0 - 30
LFB	Norflurazon	5.23	LCS	P	0 - 30
LFB	Parathion Ethyl	1.22	LCS	P	0 - 30
LFB	Parathion Methyl	9.54	LCS	P	0 - 30
LFB	Pendimethalin	3.88	LCS	P	0 - 30
LFB	Phorate	6.21	LCS	P	0 - 30
LFB	Prometon	5.76	LCS	P	0 - 30
LFB	Prometryn	6.37	LCS	P	0 - 30
LFB	Simazine	1.09	LCS	P	0 - 30
LFB	Terbufos	8.59	LCS	P	0 - 30
LFB	Terbuthylazine	8.70	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P351495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023243	Aldrin	6.26	Spike	P	0 - 30
2023243	Alpha-BHC	5.19	Spike	P	0 - 30
2023243	Alpha-Chlordane	3.20	Spike	P	0 - 30
2023243	Beta-BHC	3.36	Spike	P	0 - 30
2023243	Carbophenothion	8.22	Spike	P	0 - 30
2023243	Chlorothalonil	26.8	Spike	P	0 - 30
2023243	Cypermethrin	9.05	Spike	P	0 - 30
2023243	DDD-p,p'	1.63	Spike	P	0 - 30
2023243	DDE-p,p'	0.600	Spike	P	0 - 30
2023243	DDT-p,p'	7.94	Spike	P	0 - 30
2023243	Delta-BHC	18.0	Spike	P	0 - 30
2023243	Dicofol	6.85	Spike	P	0 - 30
2023243	Dieldrin	1.16	Spike	P	0 - 30
2023243	Endosulfan I	1.42	Spike	P	0 - 30
2023243	Endosulfan II	2.85	Spike	P	0 - 30
2023243	Endosulfan Sulfate	5.99	Spike	P	0 - 30
2023243	Endrin	0.0649	Spike	P	0 - 30
2023243	Endrin Aldehyde	0.904	Spike	P	0 - 30
2023243	Endrin Ketone	9.96	Spike	P	0 - 30
2023243	Gamma-BHC	12.1	Spike	P	0 - 30
2023243	Gamma-Chlordane	1.25	Spike	P	0 - 30
2023243	Heptachlor	3.44	Spike	P	0 - 30
2023243	Heptachlor Epoxide	3.54	Spike	P	0 - 30
2023243	Methoxychlor	4.67	Spike	P	0 - 30
2023243	Mirex	14.7	Spike	P	0 - 30
2023243	Permethrin	14.9	Spike	P	0 - 30
2023243	Trifluralin	0.0625	Spike	P	0 - 30
LFB	Aldrin	19.8	LCS	P	0 - 30
LFB	Alpha-BHC	24.7	LCS	P	0 - 30
LFB	Alpha-Chlordane	13.6	LCS	P	0 - 30
LFB	Beta-BHC	2.01	LCS	P	0 - 30
LFB	Carbophenothion	15.6	LCS	P	0 - 30
LFB	Chlorothalonil	0.853	LCS	P	0 - 30
LFB	Cypermethrin	15.9	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P351495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	DDD-p,p'	11.7	LCS	P	0 - 30
LFB	DDE-p,p'	14.5	LCS	P	0 - 30
LFB	DDT-p,p'	15.8	LCS	P	0 - 30
LFB	Delta-BHC	5.54	LCS	P	0 - 30
LFB	Dicofol	0.0114	LCS	P	0 - 30
LFB	Dieldrin	12.4	LCS	P	0 - 30
LFB	Endosulfan I	7.82	LCS	P	0 - 30
LFB	Endosulfan II	9.40	LCS	P	0 - 30
LFB	Endosulfan Sulfate	11.1	LCS	P	0 - 30
LFB	Endrin	13.9	LCS	P	0 - 30
LFB	Endrin Aldehyde	7.98	LCS	P	0 - 30
LFB	Endrin Ketone	7.36	LCS	P	0 - 30
LFB	Gamma-BHC	4.31	LCS	P	0 - 30
LFB	Gamma-Chlordane	13.5	LCS	P	0 - 30
LFB	Heptachlor	15.4	LCS	P	0 - 30
LFB	Heptachlor Epoxide	9.02	LCS	P	0 - 30
LFB	Methoxychlor	7.54	LCS	P	0 - 30
LFB	Mirex	23.4	LCS	P	0 - 30
LFB	Permethrin	17.4	LCS	P	0 - 30
LFB	Trifluralin	12.4	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P351495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023767	Chlordane	7.78	Spike	P	0 - 30
2023767	Toxaphene	3.53	Spike	P	0 - 30
LFB	Chlordane	15.1	LCS	P	0 - 30
LFB	Toxaphene	11.2	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	2,4-D	8.16	LCS	P	0 - 30
LFB	3-Hydroxycarbofuran	1.38	LCS	P	0 - 30
LFB	Acetaminophen	1.08	LCS	P	0 - 30
LFB	Aldicarb	5.95	LCS	P	0 - 30
LFB	Aldicarb Sulfone	1.29	LCS	P	0 - 30
LFB	Aldicarb Sulfoxide	15.1	LCS	P	0 - 30
LFB	Bentazon	42.4	LCS	F	0 - 30
LFB	Carbamazepine	3.09	LCS	P	0 - 30
LFB	Carbaryl	12.5	LCS	P	0 - 30
LFB	Carbofuran	16.3	LCS	P	0 - 30
LFB	Diuron	11.6	LCS	P	0 - 30
LFB	Fenuron	18.7	LCS	P	0 - 30
LFB	Fluridone	9.32	LCS	P	0 - 30
LFB	Hydrocodone	7.04	LCS	P	0 - 30
LFB	Ibuprofen	15.4	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P351258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Imazapyr	5.56	LCS	P	0 - 30
LFB	Imidacloprid	5.88	LCS	P	0 - 30
LFB	Linuron	1.62	LCS	P	0 - 30
LFB	MCP	23.4	LCS	P	0 - 30
LFB	Methiocarb	13.2	LCS	P	0 - 30
LFB	Methomyl	3.99	LCS	P	0 - 30
LFB	Naproxen	9.25	LCS	P	0 - 30
LFB	Oxamyl	3.91	LCS	P	0 - 30
LFB	Primidone	16.8	LCS	P	0 - 30
LFB	Propoxur	14.2	LCS	P	0 - 30
LFB	Pyraclostrobin	14.8	LCS	P	0 - 30
LFB	Triclopyr	18.4	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P351269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023047	Acesulfame K	4.38	Spike	P	0 - 30
2023047	AMPA	6.62	Spike	P	0 - 30
2023047	Endothall	4.61	Spike	P	0 - 30
2023047	Glufosinate	7.50	Spike	P	0 - 30
2023047	Glyphosate	8.81	Spike	P	0 - 30
2023047	Sucralose	2.25	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P351300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023180	Color (true)	1.77	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Total Alkalinity	1.14	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P351795

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023070	TDS	7.57	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P351537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023223	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2023178	Organic Carbon	0.433	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2023241
Field Sample ID: Blank_06092018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbaryl-d7	62.4	P	30 - 160

Lab Sample ID: 2023242
Field Sample ID: Blank_06092018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	117	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	95.4	P	30 - 160
EPA 8321B	Endothall-d6	91.2	P	40 - 160
EPA 8321B	Endothall-d6	91.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	94.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	94.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	83.9	P	30 - 160
EPA 8321B	Primidone-d5	117	P	30 - 160
EPA 8321B	Sucralose-d6	119	P	40 - 160
EPA 8321B	Sucralose-d6	119	P	40 - 160

Lab Sample ID: 2023243
Field Sample ID: Blank_06092018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	70.8	P	37 - 117
EPA 8270D	Tetrachloro-m-xylene	65.9	P	34 - 101
EPA 8276	Decachlorobiphenyl	53.5	P	31 - 108
EPA 8276	PCNB	88.2	P	62 - 142

Lab Sample ID: 2023244
Field Sample ID: Blank_06092018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	99.8	P	71 - 126
EPA 8270D	Terbufos-d10	95.2	P	59 - 149

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A86351
Included Lab Sample IDs: 2023214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.9	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A86353
Included Lab Sample IDs: 2023216

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	102	100	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A86357
Included Lab Sample IDs: 2023242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	84.5	78.9	P/P	60 - 150
Endothall	101	115	P/P	60 - 150

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A86366
Included Lab Sample IDs: 2023214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A86393
Included Lab Sample IDs: 2023241

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
3-Hydroxycarbofuran	107	84.3	P/P	50 - 150
Aldicarb	93.2	89.4	P/P	60 - 150
Aldicarb Sulfone	104	78.4	P/P	50 - 150
Aldicarb Sulfoxide	97.4	96.6	P/P	50 - 150
Carbaryl	91.8	94.9	P/P	60 - 150
Carbofuran	93.2	92.3	P/P	50 - 150
Methiocarb	97.7	96.7	P/P	50 - 150
Methomyl	107	91.3	P/P	50 - 150
Oxamyl	98.0	83.3	P/P	50 - 150
Propoxur	99.3	101	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A86410
Included Lab Sample IDs: 2023242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.3	110	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A86413

Included Lab Sample IDs: 2023242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	104	139	P/P	60 - 160
Glufosinate	98.4	101	P/P	60 - 160
Glyphosate	81.9	107	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A86431

Included Lab Sample IDs: 2023242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.4	83.5	P/P	50 - 150
Bentazon	120	110	P/P	50 - 160
Ibuprofen	67.7	86.7	P/P	50 - 160
MCP	61.9	94.3	P/P	50 - 150
Naproxen	66.1	109	P/P	50 - 160
Triclopyr	113	100	P/P	50 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A86447

Included Lab Sample IDs: 2023268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	99.2	P/P	95 - 105
Iron	104	101	P/P	95 - 105
Magnesium	104	101	P/P	95 - 105
Potassium	103	100	P/P	95 - 105
Sodium	103	100	P/P	95 - 105
Zinc	103	102	P/P	95 - 105

Reference Method: SM 2320 B-97

Run ID: A86448

Included Lab Sample IDs: 2023214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86448

Included Lab Sample IDs: 2023214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86460

Included Lab Sample IDs: 2023215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO ₂ NO ₃ -N	102	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86462

Included Lab Sample IDs: 2023215

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86508

Included Lab Sample IDs: 2023215

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86516

Included Lab Sample IDs: 2023215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	95.8	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A86521

Included Lab Sample IDs: 2023243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	98.3		P	80 - 120
Alpha-BHC	91.3		P	80 - 120
Alpha-Chlordane	97.6		P	80 - 120
Beta-BHC	107		P	80 - 120
Carbophenothion	103		P	80 - 120
Chlorothalonil	95.8		P	80 - 120
Cypermethrin	104		P	80 - 120
DDD-p,p'	102		P	80 - 120
DDE-p,p'	97.9		P	80 - 120
DDT-p,p'	107		P	80 - 120
Delta-BHC	115		P	80 - 120
Dicofol	94.1		P	80 - 120
Dieldrin	100		P	80 - 120
Endosulfan I	97.8		P	80 - 120
Endosulfan II	91.5		P	80 - 120
Endosulfan Sulfate	105		P	80 - 120
Endrin	97.5		P	80 - 120
Endrin Aldehyde	99.3		P	80 - 120
Endrin Ketone	102		P	80 - 120
Gamma-BHC	115		P	80 - 120
Gamma-Chlordane	98.1		P	80 - 120
Heptachlor	95.5		P	80 - 120
Heptachlor Epoxide	99.0		P	80 - 120
Methoxychlor	98.6		P	80 - 120
Mirex	101		P	80 - 120
Permethrin	92.2		P	80 - 120
Trifluralin	101		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A86566

Included Lab Sample IDs: 2023214

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

Reference Method: SM 5310 B-00

Run ID: A86572

Included Lab Sample IDs: 2023215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.8	99.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86599

Included Lab Sample IDs: 2023268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	98.6	95.2	P/P	90 - 110
Cadmium	97.4	95.6	P/P	90 - 110
Chromium	96.7	94.5	P/P	90 - 110
Lead	95.1	93.7	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A86614

Included Lab Sample IDs: 2023243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.5		P	80 - 120
Toxaphene	106		P	80 - 120

Reference Method: EPA 8321B

Run ID: A86633

Included Lab Sample IDs: 2023242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	120	131	P/P	60 - 160
Carbamazepine	118	137	P/P	60 - 160
Diuron	102	126	P/P	60 - 150
Fenuron	88.7	130	P/P	60 - 150
Fluridone	117	120	P/P	60 - 160
Hydrocodone	107	128	P/P	60 - 150
Imazapyr	112	88.8	P/P	50 - 150
Imidacloprid	79.6	108	P/P	60 - 150
Linuron	97.9	101	P/P	60 - 150
Primidone	104	108	P/P	60 - 150
Pyraclostrobin	101	112	P/P	60 - 150

Reference Method: EPA 8270D

Run ID: A86662

Included Lab Sample IDs: 2023244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.2		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A86662
Included Lab Sample IDs: 2023244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alachlor	99.8		P	80 - 120
Ametryn	93.1		P	80 - 120
Atrazine	93.4		P	80 - 120
Atrazine Desethyl	87.7		P	80 - 120
Azinphos Methyl	94.3		P	80 - 120
Bromacil	95.8		P	80 - 120
Butylate	93.1		P	80 - 120
Chlorpyrifos Ethyl	94.2		P	80 - 120
Chlorpyrifos Methyl	97.9		P	80 - 120
Cyanazine	82.1		P	80 - 120
Demeton	101		P	80 - 120
Diazinon	97.4		P	80 - 120
Disulfoton	99.1		P	80 - 120
EPTC	94.5		P	80 - 120
Ethion	94.0		P	80 - 120
Ethoprop	100		P	80 - 120
Fenamiphos	88.6		P	80 - 120
Fipronil	96.2		P	80 - 120
Fipronil Sulfide	96.4		P	80 - 120
Fipronil Sulfone	95.1		P	80 - 120
Fonofos	98.6		P	80 - 120
Hexazinone	95.7		P	80 - 120
Malathion	101		P	80 - 120
Metaxyl	97.1		P	80 - 120
Metolachlor	100		P	80 - 120
Metribuzin	90.3		P	80 - 120
Mevinphos	95.6		P	80 - 120
Molinate	91.7		P	80 - 120
Norflurazon	94.5		P	80 - 120
Parathion Ethyl	94.1		P	80 - 120
Parathion Methyl	95.3		P	80 - 120
Pendimethalin	96.1		P	80 - 120
Phorate	97.5		P	80 - 120
Prometon	99.1		P	80 - 120
Prometryn	96.5		P	80 - 120
Simazine	94.7		P	80 - 120
Terbufos	96.2		P	80 - 120
Terbutylazine	96.6		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A86670
Included Lab Sample IDs: 2023268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	100	98.8	P/P	90 - 110
Nickel	99.3	98.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A86783

Included Lab Sample IDs: 2023268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	94.3	92.7	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						2.21	
EPA 200.7 Rev. 4.4	Calcium	97.2		101				0.201
	Iron	108		105	105			0.0084
	Magnesium	99.4		99.3				0.128
	Potassium	105		102	102			0.0436
	Sodium	97.8		100				0.0003
	Zinc	102		98.7	98.5			0.121
EPA 200.8 Rev. 5.4	Arsenic	99.4		98.2	97.2			1.01
	Cadmium	96.9		100	97.9			2.15
	Chromium	94.7		92.1	91.0			1.12
	Copper	97.8		94.2	94.6			0.468
	Lead	90.8		91.0	90.6			0.463
	Nickel	97.2		95.0	95.9			0.989
	Silver	96.9		94.6	94.2	89.9		4.63
EPA 300.0 Rev. 2.1	Chloride	100		98.2	99.5		0.135	
	Sulfate	99.2		98.3	98.1		0.0848	
EPA 350.1 Rev. 2.0	Ammonia-N	96.8		98.2	101			2.26
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.9		105	107			0.812
EPA 353.2 Rev. 2.0	NO2NO3-N	102		104	104			0.962
EPA 365.1 Rev. 2.0	Total-P	99.1		96.4	99.3			2.37
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9		98.0	98.5			0.509
EPA 8270D	Acetochlor	98.8	102	97.1	104	3.27		6.64
	Alachlor	97.5	100	91.1	106	2.93		15.1
	Aldrin	69.0	56.5	60.7	64.7	19.8		6.26
	Alpha-BHC	81.6	63.7	104	98.8	24.7		5.19
	Alpha-Chlordane	91.9	80.2	90.7	87.8	13.6		3.20
	Ametryn	99.7	99.0	78.3	100	0.690		12.4
	Atrazine	106	106			0.150		4.05
	Atrazine Desethyl	71.5	88.9	116	148	21.7		24.2
	Azinphos Methyl	125	129	135	127	2.94		6.31
	Beta-BHC	112	110	150	145	2.01		3.36
	Bromacil	87.4	94.8	83.3	109	8.18		26.7
	Butylate	54.8	38.9	46.2	37.6	33.9		20.4
	Carbophenothion	95.9	82.0	93.8	102	15.6		8.22
	Chlorothalonil	89.1	89.9	89.3	117	0.853		26.8
	Chlorpyrifos Ethyl	98.0	98.6	96.4	93.4	0.646		3.17
	Chlorpyrifos Methyl	94.3	93.5	100	98.3	0.921		1.94
	Cyanazine	136	155	142	191	13.2		29.6
	Cypermethrin	110	93.4	136	124	15.9		9.05
	DDD-p,p'	102	91.1	101	103	11.7		1.63
	DDE-p,p'	92.5	80.0	88.0	87.5	14.5		0.600
	DDT-p,p'	91.0	77.7	84.4	91.4	15.8		7.94
	Delta-BHC	112	106	157	131	5.54		18.0
	Demeton	85.7	74.2	86.6	83.8	14.4		3.28
	Diazinon	115	109	117	123	4.88		5.28
	Dicofol	88.2	88.2	87.8	94.0	0.0114		6.85
	Dieldrin	101	88.9	93.0	94.1	12.4		1.16
	Disulfoton	98.2	91.7	102	103	6.82		0.925
	Endosulfan I	97.0	89.7	94.8	96.2	7.82		1.42
	Endosulfan II	104	94.7	109	112	9.40		2.85
	Endosulfan Sulfate	103	92.3	103	109	11.1		5.99
	Endrin	104	90.6	97.4	97.4	13.9		0.0649
	Endrin Aldehyde	114	105	103	102	7.98		0.904
	Endrin Ketone	104	96.3	106	117	7.36		9.96

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	EPTC	57.8	45.3	47.9	32.9	24.3	37.0
	Ethion	88.5	93.1	54.7	93.3	5.04	52.2
	Ethoprop	89.5	77.0	104	96.8	15.0	6.73
	Fenamiphos	91.4	101	79.7	92.5	10.4	14.9
	Fipronil	99.4	106	71.2	103	6.50	32.7
	Fipronil Sulfide	84.3	88.8	65.5	86.2	5.24	23.3
	Fipronil Sulfone	82.3	85.8	44.2	85.5	4.22	42.6
	Fonofos	97.2	89.4	103	96.7	8.36	5.89
	Gamma-BHC	103	98.8	125	141	4.31	12.1
	Gamma-Chlordane	87.5	76.5	86.6	85.6	13.5	1.25
	Heptachlor	73.0	62.6	65.4	67.7	15.4	3.44
	Heptachlor Epoxide	93.5	85.4	87.5	90.6	9.02	3.54
	Hexazinone	103	98.2			4.43	13.3
	Malathion	99.5	105	104	97.9	5.64	6.15
	Metalaxyl	100	103	82.8	104	3.01	16.1
	Methoxychlor	102	94.5	102	107	7.54	4.67
	Metolachlor	94.6	99.6	86.6	95.2	5.11	7.33
	Metribuzin	125	144	215	220	14.0	1.76
	Mevinphos	84.7	73.2	94.2	96.4	14.6	2.30
	Mirex	78.1	61.7	67.4	78.0	23.4	14.7
	Molinate	56.8	48.4	50.9	41.6	16.0	19.9
	Norflurazon	91.8	96.7	23.7	80.6	5.23	46.2
	Parathion Ethyl	96.9	95.7	104	107	1.22	2.75
	Parathion Methyl	113	103	116	122	9.54	4.49
	Pendimethalin	120	116	127	126	3.88	0.553
	Permethrin	86.9	73.0	81.5	94.6	17.4	14.9
	Phorate	65.5	69.7	79.9	76.4	6.21	4.52
	Prometon	115	109	106	120	5.76	12.2
	Prometryn	98.2	105	95.1	105	6.37	10.2
	Simazine	97.7	96.6	110	113	1.09	2.83
	Terbufos	100	91.9	113	107	8.59	5.06
	Terbutylazine	95.0	104	102	112	8.70	8.99
	Trifluralin	84.4	74.6	75.2	75.3	12.4	0.0625
EPA 8276	Chlordane	76.1	88.5			15.1	7.78
	Toxaphene	64.2	71.7	55.4	57.4	11.2	3.53
EPA 8321B	2,4-D	89.7	97.3			8.16	
	3-Hydroxycarbofuran	98.5	97.2			1.38	
	Acesulfame K	74.1		28.9	30.2		4.38
	Acetaminophen	134	135			1.08	
	Aldicarb	109	103			5.95	
	Aldicarb Sulfone	98.6	99.9			1.29	
	Aldicarb Sulfoxide	96.5	112			15.1	
	AMPA	100		89.2	97.7		6.62
	Bentazon	96.3	148			42.4	
	Carbamazepine	87.3	90.0			3.09	
	Carbaryl	70.9	80.4			12.5	
	Carbofuran	72.3	85.1			16.3	
	Diuron	81.2	91.2			11.6	
	Endothall	89.1		179	171		4.61
	Fenuron	95.2	115			18.7	
	Fluridone	103	114			9.32	
	Glufosinate	95.5		62.9	67.8		7.50
	Glyphosate	74.7		62.6	70.4		8.81
	Hydrocodone	105	113			7.04	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 8321B	Ibuprofen	81.5	95.1			15.4		
	Imazapyr	75.7	80.1			5.56		
	Imidacloprid	94.4	100			5.88		
	Linuron	71.7	72.9			1.62		
	MCCP	91.4	116			23.4		
	Methiocarb	68.3	77.9			13.2		
	Methomyl	108	103			3.99		
	Naproxen	102	93.2			9.25		
	Oxamyl	103	98.8			3.91		
	Primidone	80.8	95.6			16.8		
	Propoxur	69.1	79.7			14.2		
	Pyraclostrobin	78.6	91.2			14.8		
	Sucralose	92.1		112	115			2.25
	Triclopyr	98.2	118			18.4		
SM 2120 B	Color (true)	99.6					1.77	
SM 2320 B-97	Total Alkalinity	103					1.14	
SM 2540 C-97	TDS						7.57	
SM 4500 F-C-97	Fluoride	99.2		98.2	98.2			0.0
SM 5310 B-00	Organic Carbon	97.1		100				0.433

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2023214
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2023268
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2023268
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2023214
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2023214
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2023215
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2023215
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2023215
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2023215
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2023216
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	2023243
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2023244
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2023243
EPA 8321B / E31780	Carbamates in water matrices by HPLC/MS/MS	2023241
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2023242
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2023242
SM 2120 B / E31780	True Color measured at 450 nm	2023214
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2023214
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2023214
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2023214
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2023214

Reference Method Descriptions

Method / DoH Cert #	Description	<u>Associated Samples</u>
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2023215

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	09/07/2018			09/07/2018 16:38	Megan Treadwell	2023214
EPA 200.7 Rev. 4.4	09/07/2018	09/11/2018 13:25	Elliott D. Healy	09/12/2018 15:25	Betina Topolski	2023268
EPA 200.8 Rev. 5.4	09/07/2018	09/11/2018 13:25	Elliott D. Healy	09/19/2018 12:42	Robert K Palmer	2023268
	09/07/2018	09/11/2018 13:25	Elliott D. Healy	09/20/2018 18:26	Robert K Palmer	2023268
	09/07/2018	09/27/2018 16:45	Elliott D. Healy	09/28/2018 12:52	Robert K Palmer	2023268
EPA 300.0 Rev. 2.1	09/07/2018			09/18/2018 18:07	Lipi Saha	2023214
EPA 350.1 Rev. 2.0	09/07/2018			09/12/2018 13:50	Ping Hua	2023215
EPA 351.2 Rev. 2.0	09/07/2018	09/12/2018 10:45	Adrian Shelby	09/14/2018 18:16	Joseph Suarez	2023215
EPA 353.2 Rev. 2.0	09/07/2018			09/13/2018 12:46	Lauren Bottorf	2023215
EPA 365.1 Rev. 2.0	09/07/2018	09/12/2018 12:10	Sima Feizi	09/14/2018 12:22	Beverly Y. Sanders	2023215
EPA 365.1 Rev. 2.0 dissolved	09/07/2018			09/07/2018 15:46	Julia Storbeck	2023216
EPA 8270D	09/07/2018	09/07/2018 14:30	Rasheda Ghaffari	09/13/2018 17:22	Marek Topolski	2023244
	09/07/2018	09/12/2018 10:11	Rasheda Ghaffari	09/14/2018 21:59	Dinesh Mishra	2023243
EPA 8276	09/07/2018	09/12/2018 10:11	Rasheda Ghaffari	09/15/2018 05:17	Arthur Maknenko	2023243
EPA 8321B	09/07/2018	09/09/2018 16:45	Mohammad Ghaffari	09/10/2018 01:23	Mohammad Ghaffari	2023242
	09/07/2018	09/09/2018 16:45	Mohammad Ghaffari	09/11/2018 13:36	Mohammad Ghaffari	2023242
	09/07/2018	09/09/2018 16:45	Mohammad Ghaffari	09/11/2018 20:20	Mohammad Ghaffari	2023242
	09/07/2018	09/10/2018 13:00	Hoor Shaik	09/11/2018 03:43	Juyoung Kim	2023241
	09/07/2018	09/10/2018 13:00	Hoor Shaik	09/12/2018 04:59	Juyoung Kim	2023242
	09/07/2018	09/10/2018 13:00	Hoor Shaik	09/21/2018 09:07	Mohammad Ghaffari	2023242
SM 2120 B	09/07/2018			09/07/2018 15:34	DeAsia Armster	2023214
SM 2320 B-97	09/07/2018			09/13/2018 05:40	Dale L. Simmons	2023214
SM 2540 C-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023214
SM 2540 D-97	09/07/2018			09/12/2018 15:16	Yijie Li	2023214
SM 4500 F-C-97	09/07/2018			09/13/2018 05:40	Dale L. Simmons	2023214
SM 5310 B-00	09/07/2018			09/17/2018 09:34	Megan Treadwell	2023215