

Chemical Analysis Report

WQ-ASSESS-2017-10-05-01

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

Event Description: **Magdalene & Armistead**

Request ID: **RQ-2017-10-02-18**

Customer: **WQ-ASSESS**

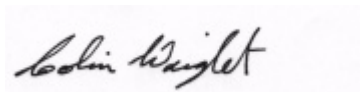
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 01-NOV-2017 12:42

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light-colored rectangular background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, 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: Magdalene

Collection Date/Time: 10/04/2017 09:10

Field ID: G1SW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934698	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	36		mg Cl/L	P333111	
		Sulfate	13		mg SO4/L	P333114	
	SM 2120 B	Color (true)	56	A	PCU	P332835	
	SM 2320 B-97	Total Alkalinity	42	A	mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	142		mg/L	P333146	
	SM 2540 D-97	TSS	2	I	mg/L	P333008	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P333350	
1934699	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P333237	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.88		mg N/L	P333308	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P333266	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P333409	
1934700	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332853	
1934726	EPA 200.7 Rev. 4.4	Calcium	19.3		mg/L	P332965	
		Iron	35	I	ug/L	P332965	
		Magnesium	2.11		mg/L	P332965	
		Potassium	3.8		mg/L	P332965	
		Sodium	22.9		mg/L	P332965	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P332965	
		Arsenic	3.77		ug/L	P332965	
		Cadmium	0.020	U	ug/L	P332965	
		Chromium	0.40	U	ug/L	P332965	
		Copper	0.64	I	ug/L	P332965	
		Lead	0.079	I	ug/L	P332965	
		Nickel	0.20	U	ug/L	P332965	
		Silver	0.010	U	ug/L	P332965	

Ref. Method and Comment:

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

Sample Location: MAGDALELE

Collection Date/Time: 10/04/2017 09:10

Field ID: G1SW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934706	EPA 8321B	Glyphosate**	0.50	U	ug/L	P332696	
		Pyraclostrobin**	0.0020	U	ug/L	P332701	
		Sucralose**	1.2	J	ug/L	P332778	RPD
	USGS O-2060-01	2,4-D	0.040		ug/L	P332779	
		Diuron	0.0053		ug/L	P332779	
		Fenuron	0.0080	U	ug/L	P332779	
		Imidacloprid	0.042		ug/L	P332779	
		Bentazon	0.025	J	ug/L	P332779	MS
		Linuron	0.0040	U	ug/L	P332779	
		Acetaminophen**	0.0080	U	ug/L	P332779	

Field ID: G1SW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934706	USGS O-2060-01	MCP	0.0020	U	ug/L	P332779	
		Carbamazepine**	0.0017		ug/L	P332779	
		Triclopyr**	0.0040	U	ug/L	P332779	
		Primidone**	0.0055	I	ug/L	P332779	
		Fluridone**	0.056		ug/L	P332779	
1934724	EPA 8270D	Aldrin	4.2	UJ	ng/L	P332947	SUR
		Alpha-BHC	2.1	UJ	ng/L	P332947	LCS, SUR
		Beta-BHC	4.2	UJ	ng/L	P332947	SUR
		Delta-BHC	4.2	UJ	ng/L	P332947	LCS, SUR
		Gamma-BHC	4.2	UJ	ng/L	P332947	SUR
		Carbophenothion	4.2	UJ	ng/L	P332947	SUR
		Chlorothalonil	2.1	UJ	ng/L	P332947	SUR
		Cypermethrin	21	UJ	ng/L	P332947	SUR
		DDD-p,p'	3.1	UJ	ng/L	P332947	SUR
		DDE-p,p'	3.1	UJ	ng/L	P332947	SUR
		DDT-p,p'	3.1	UJ	ng/L	P332947	SUR
		Dieldrin	4.2	UJ	ng/L	P332947	SUR
		Endosulfan I	4.2	UJ	ng/L	P332947	SUR
		Endosulfan II	4.2	UJ	ng/L	P332947	SUR
		Endosulfan Sulfate	2.1	UJ	ng/L	P332947	LCS, SUR
		Endrin	2.1	UJ	ng/L	P332947	SUR
		Endrin Aldehyde	2.1	UJ	ng/L	P332947	SUR
		Heptachlor	1.6	UJ	ng/L	P332947	SUR
		Heptachlor Epoxide	2.1	UJ	ng/L	P332947	LCS, SUR
		Methoxychlor	4.2	UJ	ng/L	P332947	SUR
		Mirex	2.1	UJ	ng/L	P332947	SUR
		Permethrin	10	UJ	ng/L	P332947	SUR
		Trifluralin	1.0	UJ	ng/L	P332947	CCV, SUR
		Alpha-Chlordane	1.0	UJ	ng/L	P332947	SUR
		Gamma-Chlordane	1.0	UJ	ng/L	P332947	SUR
		Endrin Ketone	2.1	UJ	ng/L	P332947	LCS, SUR
		Dicofol	31	UJ	ng/L	P332947	SUR
	EPA 8276	Chlordane**	2.6	U	ng/L	P332947	
		Toxaphene**	13	U	ng/L	P332947	
1934725	EPA 8270D	Alachlor	0.24	U	ng/L	P333058	
		Ametryn	2.2		ng/L	P333058	
		Atrazine	11		ng/L	P333058	
		Atrazine Desethyl	1.4	U	ng/L	P333058	
		Azinphos Methyl	2.2	U	ng/L	P333058	
		Bromacil	0.48	U	ng/L	P333058	
		Butylate	0.38	UJ	ng/L	P333058	RPD
		Chlorpyrifos Ethyl	0.24	U	ng/L	P333058	
		Chlorpyrifos Methyl	0.096	U	ng/L	P333058	
		Demeton	1.9	U	ng/L	P333058	
		Diazinon	0.12	U	ng/L	P333058	

Field ID: G1SW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934725	EPA 8270D	Disulfoton	0.48	U	ng/L	P333058	
		EPTC	1.2	U	ng/L	P333058	
		Ethion	0.14	U	ng/L	P333058	
		Ethoprop	0.096	UJ	ng/L	P333058	MS
		Fenamiphos	0.24	U	ng/L	P333058	
		Fipronil	0.25	I	ng/L	P333058	
		Fipronil Sulfide	0.36	I	ng/L	P333058	
		Fipronil Sulfone	0.70		ng/L	P333058	
		Hexazinone	3.6		ng/L	P333058	
		Malathion	0.34	U	ng/L	P333058	
		Metribuzin	0.19	UJ	ng/L	P333058	RPD
		Mevinphos	0.48	U	ng/L	P333058	
		Molinate	0.29	U	ng/L	P333058	
		Norflurazon	0.48	U	ng/L	P333058	
		Pendimethalin	0.96	U	ng/L	P333058	
		Phorate	0.24	U	ng/L	P333058	
		Prometon	6.7		ng/L	P333058	
		Prometryn	0.19	U	ng/L	P333058	
		Simazine	0.81	I	ng/L	P333058	
		Terbufos	0.096	U	ng/L	P333058	
		Terbutylazine	0.41	U	ng/L	P333058	
		Fonofos	0.19	U	ng/L	P333058	
		Metalaxyl	0.19	U	ng/L	P333058	
		Metolachlor	0.24	U	ng/L	P333058	
		Acetochlor	0.24	U	ng/L	P333058	
		Cyanazine	0.48	UJ	ng/L	P333058	RPD
		Parathion Ethyl	0.24	U	ng/L	P333058	
		Parathion Methyl	0.24	U	ng/L	P333058	

Ref. Method and Comment:

EPA 8321B: Refer to the narrative for an explanation of QC Codes.

USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.

USGS O-2060-01: MS accuracy for imidacloprid and fluridone could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8270D: Refer to the narrative for an explanation of QC Codes. Reported results qualified with J due to surrogate below control limits; the sample was subsequently re-analyzed (after expiration) with acceptable surrogate recovery and the same analytical results were obtained.

EPA 8270D: Refer to the narrative for an explanation of QC Codes. MS accuracy for Atrazine not assessed due to high content of this parameter in the sample spiked.

Sample Location: ARMISTEAD

Collection Date/Time: 10/04/2017 10:15

Field ID: G1SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934701	EPA 180.1 Rev. 2.0	Turbidity	1.0		NTU	P332815	
	EPA 300.0 Rev. 2.1	Chloride	26		mg Cl/L	P333111	
		Sulfate	3.7		mg SO4/L	P333114	
	SM 2120 B	Color (true)	210		PCU	P332835	
	SM 2320 B-97	Total Alkalinity	28		mg CaCO3/L	P333347	
	SM 2540 C-97	TDS	114		mg/L	P333146	
	SM 2540 D-97	TSS	2	U	mg/L	P333008	

Field ID: G1SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934701	SM 4500 F-C-97	Fluoride	0.096	I	mg F/L	P333350	
1934702	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P333237	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P333130	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P333224	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P333266	
	SM 5310 B-00	Organic Carbon	17		mg C/L	P333409	
1934703	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P332853	

Ref. Method and Comment:

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P332815

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P332965

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: P332965

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
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333111

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333114

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333130

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333266

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

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

Reference Method: EPA 8270D
Batch ID: P332947

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270D

Batch ID: P332947

Component	Result	Code	Units
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 8270D

Batch ID: P333058

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
Metalaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P333058

Component	Result	Code	Units
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8276
Batch ID: P332947

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Toxaphene	12	U	ng/L

Reference Method: EPA 8321B
Batch ID: P332696

Component	Result	Code	Units
Glyphosate	0.50	U	ug/L

Reference Method: EPA 8321B
Batch ID: P332701

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P332778

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P332835

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333347

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

Reference Method: SM 2540 C-97
Batch ID: P333146

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333008

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
 Batch ID: P333350

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P333409

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

Reference Method: USGS O-2060-01
 Batch ID: P332779

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	8.0E-04	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	8.0E-04	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P332965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	111		P	85 - 115
Iron	109		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.4		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P332965

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	98.9		P	85 - 115
Copper	96.5		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	98.0		P	85 - 115
Silver	96.6		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333111

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P333114

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333130

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P333308

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333224

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: P333266

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332853

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

Reference Method: EPA 8270D
Batch ID: P332947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	47.9	44.1	P/P	26 - 88.0
Alpha-BHC	62.3	63.2	F/P	63 - 114
Alpha-Chlordane	61.2	65.2	P/P	56 - 117
Beta-BHC	65.3	65.9	P/P	57 - 138

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P332947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Carbophenothion	53.9	69.3	P/P	36 - 148
Chlorothalonil	100	82.2	P/P	26 - 173
Cypermethrin	62.2	60.8	P/P	42 - 159
DDD-p,p'	68.9	71.5	P/P	62 - 126
DDE-p,p'	62.6	66.5	P/P	53 - 115
DDT-p,p'	62.3	64.8	P/P	54 - 117
Delta-BHC	64.1	63.0	F/F	68 - 158
Dicofol	34.9	37.8	P/P	25 - 114
Dieldrin	67.3	64.7	P/P	59 - 126
Endosulfan I	67.0	72.4	P/P	62 - 138
Endosulfan II	72.0	73.2	P/P	61 - 150
Endosulfan Sulfate	60.7	66.5	F/P	63 - 132
Endrin	65.4	67.5	P/P	49 - 148
Endrin Aldehyde	57.7	64.3	P/P	50 - 144
Endrin Ketone	61.0	63.5	F/F	66 - 122
Gamma-BHC	65.5	66.8	P/P	60 - 137
Gamma-Chlordane	60.4	64.5	P/P	54 - 113
Heptachlor	53.1	58.0	P/P	43 - 104
Heptachlor Epoxide	60.2	65.2	F/P	64 - 118
Methoxychlor	68.1	73.5	P/P	63 - 129
Mirex	50.6	52.3	P/P	39 - 93.0
Permethrin	60.6	63.3	P/P	51 - 123
Trifluralin	56.8	58.9	P/P	35 - 187

Reference Method: EPA 8270D

Batch ID: P333058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	91.8	104	P/P	78 - 118
Alachlor	97.6	103	P/P	77 - 119
Ametryn	91.5	89.5	P/P	61 - 136
Atrazine	93.2	95.2	P/P	73 - 120
Atrazine Desethyl	99.5	113	P/P	16 - 122
Azinphos Methyl	95.5	107	P/P	69 - 186
Bromacil	90.4	82.5	P/P	40 - 125
Butylate	78.4	57.2	P/P	32 - 87.0
Chlorpyrifos Ethyl	94.2	86.7	P/P	53 - 110
Chlorpyrifos Methyl	89.0	97.2	P/P	31 - 119
Cyanazine	97.6	156	P/P	36 - 224
Demeton	97.1	84.9	P/P	39 - 122
Diazinon	87.2	115	P/P	75 - 119
Disulfoton	103	108	P/P	42 - 139
EPTC	73.3	54.5	P/P	33 - 96.0
Ethion	95.8	83.0	P/P	63 - 127
Ethoprop	83.1	90.1	P/P	65 - 107
Fenamiphos	99.1	85.9	P/P	64 - 137
Fipronil	95.9	102	P/P	60 - 126
Fipronil Sulfide	93.5	76.3	P/P	58 - 124
Fipronil Sulfone	89.7	68.2	P/P	57 - 126
Fonofos	84.8	93.0	P/P	65 - 111
Hexazinone	93.2	82.1	P/P	46 - 151
Malathion	92.8	79.2	P/P	68 - 132

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P333058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Metalaxyl	91.5	91.0	P/P	51 - 132
Metolachlor	98.7	94.3	P/P	78 - 119
Metribuzin	72.6	113	P/P	58 - 148
Mevinphos	86.2	80.2	P/P	34 - 128
Molinate	73.8	58.2	P/P	44 - 101
Norflurazon	92.6	87.7	P/P	63 - 129
Parathion Ethyl	89.1	89.1	P/P	80 - 109
Parathion Methyl	93.5	105	P/P	74 - 125
Pendimethalin	91.3	93.4	P/P	48 - 134
Phorate	85.4	88.2	P/P	52 - 119
Prometon	93.1	85.4	P/P	69 - 124
Prometryn	94.5	102	P/P	66 - 124
Simazine	96.7	96.2	P/P	61 - 134
Terbufos	86.0	91.1	P/P	58 - 115
Terbutylazine	92.3	92.1	P/P	77 - 113

Reference Method: EPA 8276

Batch ID: P332947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	79.7	69.1	P/P	48 - 121
Toxaphene	104	83.6	P/P	43 - 135

Reference Method: EPA 8321B

Batch ID: P332696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	112		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P332701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	105		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P332778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	101		P	40 - 150

Reference Method: SM 2320 B-97

Batch ID: P333347

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97

Batch ID: P333350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00

Batch ID: P333409

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Reference Method: USGS O-2060-01

Batch ID: P332779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	109		P	40 - 150
Acetaminophen	103		P	30 - 150
Bentazon	43.4		P	30 - 150
Carbamazepine	126		P	40 - 150
Diuron	116		P	40 - 150
Fenuron	96.1		P	40 - 150
Fluridone	107		P	40 - 150
Imidacloprid	98.5		P	40 - 160
Linuron	95.6		P	40 - 150
MCP	121		P	40 - 150
Primidone	97.2		P	40 - 150
Triclopyr	125		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P332965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934357	Calcium	111		P	80 - 120
1934357	Iron	109		P	80 - 120
1934357	Magnesium	111		P	80 - 120
1934357	Potassium	101		P	80 - 120
1934357	Sodium	99.9		P	80 - 120
1934357	Zinc	104		P	80 - 120
1934494	Calcium	112	113	P/P	80 - 120
1934494	Iron	107	109	P/P	80 - 120
1934494	Magnesium	110	111	P/P	80 - 120
1934494	Potassium	104	105	P/P	80 - 120
1934494	Sodium	99.3		P	80 - 120
1934494	Zinc	105	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P332965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934357	Arsenic	101		P	80 - 120
1934357	Cadmium	102		P	80 - 120
1934357	Chromium	98.5		P	80 - 120
1934357	Copper	96.8		P	80 - 120
1934357	Lead	99.3		P	80 - 120
1934357	Nickel	98.1		P	80 - 120
1934357	Silver	95.6		P	80 - 120
1934494	Arsenic	100	101	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P332965

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934494	Cadmium	100	102	P/P	80 - 120
1934494	Chromium	97.7	98.3	P/P	80 - 120
1934494	Copper	97.3	97.9	P/P	80 - 120
1934494	Lead	99.2	99.6	P/P	80 - 120
1934494	Nickel	98.1	98.6	P/P	80 - 120
1934494	Silver	95.5	95.8	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Chloride	96.1		P	90 - 110
1934627	Chloride	98.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P333114

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934533	Sulfate	93.8		P	90 - 110
1934627	Sulfate	95.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P333237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934656	Ammonia-N	102	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P333130

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934467	Kjeldahl Nitrogen	98.7	96.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P333308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934650	Kjeldahl Nitrogen	101	95.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P333224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934648	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P333266

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934699	Total-P	100	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P332853

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934659	O-Phosphate-P	97.3	98.5	P/P	90 - 110

Reference Method: EPA 8270D

Batch ID: P332947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934756	Aldrin	46.0	44.7	P/P	22 - 97.0
1934756	Alpha-BHC	57.5	56.0	P/P	43 - 132
1934756	Alpha-Chlordane	66.9	64.4	P/P	36 - 126
1934756	Beta-BHC	86.0	81.4	P/P	41 - 150
1934756	Carbophenothion	115	111	P/P	13 - 196
1934756	Chlorothalonil	151	121	P/P	10 - 266
1934756	Cypermethrin	88.5	80.0	P/P	37 - 161
1934756	DDD-p,p'	74.5	71.6	P/P	44 - 131
1934756	DDE-p,p'	66.2	60.5	P/P	32 - 127
1934756	DDT-p,p'	67.7	61.0	P/P	45 - 116
1934756	Delta-BHC	100	88.9	P/P	50 - 201
1934756	Dicofol	17.2	13.5	P/P	10 - 100
1934756	Dieldrin	70.6	65.2	P/P	39 - 142
1934756	Endosulfan I	75.8	72.9	P/P	51 - 139
1934756	Endosulfan II	85.6	80.1	P/P	49 - 155
1934756	Endosulfan Sulfate	83.0	75.2	P/P	54 - 136
1934756	Endrin	65.1	68.0	P/P	38 - 141
1934756	Endrin Aldehyde	68.7	55.7	P/P	14 - 152
1934756	Endrin Ketone	75.5	68.3	P/P	60 - 128
1934756	Gamma-BHC	66.8	75.5	P/P	48 - 157
1934756	Gamma-Chlordane	66.6	64.1	P/P	35 - 123
1934756	Heptachlor	52.7	50.7	P/P	25 - 112
1934756	Heptachlor Epoxide	67.4	64.2	P/P	48 - 125
1934756	Methoxychlor	70.6	65.4	P/P	52 - 127
1934756	Mirex	57.9	52.6	P/P	25 - 108
1934756	Permethrin	75.0	68.8	P/P	46 - 133
1934756	Trifluralin	86.0	83.6	P/P	29 - 254

Reference Method: EPA 8270D

Batch ID: P333058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934725	Acetochlor	96.2	104	P/P	74 - 123
1934725	Alachlor	95.5	99.6	P/P	73 - 124
1934725	Ametryn	89.6	69.8	P/P	56 - 149
1934725	Atrazine Desethyl	96.9	92.7	P/P	12 - 103
1934725	Azinphos Methyl	99.6	110	P/P	60 - 202
1934725	Bromacil	101	107	P/P	42 - 133
1934725	Butylate	59.4	57.6	P/P	10 - 85.0
1934725	Chlorpyrifos Ethyl	81.4	83.2	P/P	53 - 113
1934725	Chlorpyrifos Methyl	94.4	104	P/P	40 - 115
1934725	Cyanazine	134	160	P/P	22 - 210
1934725	Demeton	83.0	86.9	P/P	17 - 149
1934725	Diazinon	110	121	P/P	72 - 124
1934725	Disulfoton	106	121	P/P	43 - 139
1934725	EPTC	57.4	55.2	P/P	10 - 86.0

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P333058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934725	Ethion	78.4	82.5	P/P	65 - 131
1934725	Ethoprop	99.7	111	P/F	59 - 110
1934725	Fenamiphos	88.6	84.0	P/P	57 - 138
1934725	Fipronil	107	111	P/P	40 - 130
1934725	Fipronil Sulfide	82.7	84.2	P/P	36 - 128
1934725	Fipronil Sulfone	71.4	73.2	P/P	16 - 145
1934725	Fonofos	98.2	108	P/P	60 - 112
1934725	Hexazinone	87.4	94.3	P/P	69 - 142
1934725	Malathion	95.9	99.2	P/P	68 - 132
1934725	Metalaxyl	99.2	97.5	P/P	66 - 118
1934725	Metolachlor	93.1	98.1	P/P	71 - 124
1934725	Metribuzin	124	123	P/P	61 - 140
1934725	Mevinphos	91.1	92.6	P/P	38 - 130
1934725	Molinate	49.1	55.9	P/P	23 - 99.0
1934725	Norflurazon	82.2	86.9	P/P	39 - 139
1934725	Parathion Ethyl	92.3	94.2	P/P	75 - 111
1934725	Parathion Methyl	109	114	P/P	64 - 130
1934725	Pendimethalin	102	99.3	P/P	26 - 173
1934725	Phorate	90.2	87.8	P/P	43 - 127
1934725	Prometon	86.2	81.8	P/P	50 - 144
1934725	Prometryn	95.3	100	P/P	69 - 126
1934725	Simazine	94.4	113	P/P	51 - 152
1934725	Terbufos	98.7	102	P/P	54 - 125
1934725	Terbutylazine	92.1	100	P/P	76 - 113

Reference Method: EPA 8276

Batch ID: P332947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1935024	Chlordane	108	94.0	P/P	44 - 134
1935024	Toxaphene	141	118	P/P	36 - 147

Reference Method: EPA 8321B

Batch ID: P332696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933717	Glyphosate	112	118	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P332701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934227	Pyraclostrobin	101	119	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P332778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	Sucralose	69.3	114	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P333350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934698	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333409

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934486	Organic Carbon	98.8	97.6	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P332779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934706	2,4-D	66.3	58.8	P/P	40 - 150
1934706	Acetaminophen	84.5	80.9	P/P	30 - 150
1934706	Bentazon	25.7	21.7	F/F	30 - 150
1934706	Carbamazepine	90.7	94.5	P/P	40 - 150
1934706	Diuron	76.1	79.7	P/P	40 - 150
1934706	Fenuron	82.5	90.8	P/P	40 - 150
1934706	Linuron	91.9	98.1	P/P	40 - 150
1934706	MCP	50.3	53.1	P/P	40 - 150
1934706	Primidone	105	107	P/P	40 - 150
1934706	Triclopyr	47.5	50.6	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934646	Turbidity	0.777	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P332965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934494	Calcium	1.29	Spike	P	0 - 20
1934494	Iron	1.31	Spike	P	0 - 20
1934494	Magnesium	1.22	Spike	P	0 - 20
1934494	Potassium	0.847	Spike	P	0 - 20
1934494	Sodium	0.643	Spike	P	0 - 20
1934494	Zinc	0.226	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P332965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934494	Arsenic	0.896	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P332965

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934494	Cadmium	1.92	Spike	P	0 - 20
1934494	Chromium	0.616	Spike	P	0 - 20
1934494	Copper	0.629	Spike	P	0 - 20
1934494	Lead	0.390	Spike	P	0 - 20
1934494	Nickel	0.443	Spike	P	0 - 20
1934494	Silver	0.279	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Chloride	0.0361	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P333114

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934533	Sulfate	0.0383	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P333237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934656	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P333130

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934467	Kjeldahl Nitrogen	1.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P333308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934650	Kjeldahl Nitrogen	3.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P333224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934648	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P333266

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934699	Total-P	0.261	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P332853

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934659	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: EPA 8270D

Batch ID: P332947

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934756	Aldrin	2.97	Spike	P	0 - 30
1934756	Alpha-BHC	2.62	Spike	P	0 - 30
1934756	Alpha-Chlordane	3.77	Spike	P	0 - 30
1934756	Beta-BHC	5.56	Spike	P	0 - 30
1934756	Carbophenothion	3.27	Spike	P	0 - 30
1934756	Chlorothalonil	21.9	Spike	P	0 - 30
1934756	Cypermethrin	10.1	Spike	P	0 - 30
1934756	DDD-p,p'	3.96	Spike	P	0 - 30
1934756	DDE-p,p'	9.05	Spike	P	0 - 30
1934756	DDT-p,p'	10.4	Spike	P	0 - 30
1934756	Delta-BHC	11.7	Spike	P	0 - 30
1934756	Dicofol	23.8	Spike	P	0 - 30
1934756	Dieldrin	7.90	Spike	P	0 - 30
1934756	Endosulfan I	3.95	Spike	P	0 - 30
1934756	Endosulfan II	6.67	Spike	P	0 - 30
1934756	Endosulfan Sulfate	9.88	Spike	P	0 - 30
1934756	Endrin	4.39	Spike	P	0 - 30
1934756	Endrin Aldehyde	21.0	Spike	P	0 - 30
1934756	Endrin Ketone	10.0	Spike	P	0 - 30
1934756	Gamma-BHC	12.2	Spike	P	0 - 30
1934756	Gamma-Chlordane	3.94	Spike	P	0 - 30
1934756	Heptachlor	3.87	Spike	P	0 - 30
1934756	Heptachlor Epoxide	4.86	Spike	P	0 - 30
1934756	Methoxychlor	7.64	Spike	P	0 - 30
1934756	Mirex	9.45	Spike	P	0 - 30
1934756	Permethrin	8.64	Spike	P	0 - 30
1934756	Trifluralin	2.83	Spike	P	0 - 30
LFB	Aldrin	8.45	LCS	P	0 - 30
LFB	Alpha-BHC	1.42	LCS	P	0 - 30
LFB	Alpha-Chlordane	6.24	LCS	P	0 - 30
LFB	Beta-BHC	0.858	LCS	P	0 - 30
LFB	Carbophenothion	24.9	LCS	P	0 - 30
LFB	Chlorothalonil	19.8	LCS	P	0 - 30
LFB	Cypermethrin	2.20	LCS	P	0 - 30
LFB	DDD-p,p'	3.62	LCS	P	0 - 30
LFB	DDE-p,p'	5.95	LCS	P	0 - 30
LFB	DDT-p,p'	3.96	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P332947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Delta-BHC	1.77	LCS	P	0 - 30
LFB	Dicofol	8.00	LCS	P	0 - 30
LFB	Dieldrin	3.81	LCS	P	0 - 30
LFB	Endosulfan I	7.77	LCS	P	0 - 30
LFB	Endosulfan II	1.66	LCS	P	0 - 30
LFB	Endosulfan Sulfate	9.08	LCS	P	0 - 30
LFB	Endrin	3.06	LCS	P	0 - 30
LFB	Endrin Aldehyde	10.9	LCS	P	0 - 30
LFB	Endrin Ketone	4.07	LCS	P	0 - 30
LFB	Gamma-BHC	2.05	LCS	P	0 - 30
LFB	Gamma-Chlordane	6.68	LCS	P	0 - 30
LFB	Heptachlor	8.88	LCS	P	0 - 30
LFB	Heptachlor Epoxide	7.87	LCS	P	0 - 30
LFB	Methoxychlor	7.68	LCS	P	0 - 30
LFB	Mirex	3.32	LCS	P	0 - 30
LFB	Permethrin	4.51	LCS	P	0 - 30
LFB	Trifluralin	3.74	LCS	P	0 - 30

Reference Method: EPA 8270D

Batch ID: P333058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934725	Acetochlor	8.00	Spike	P	0 - 30
1934725	Alachlor	4.19	Spike	P	0 - 30
1934725	Ametryn	14.5	Spike	P	0 - 30
1934725	Atrazine	12.0	Spike	P	0 - 30
1934725	Atrazine Desethyl	3.90	Spike	P	0 - 30
1934725	Azinphos Methyl	10.0	Spike	P	0 - 30
1934725	Bromacil	6.31	Spike	P	0 - 30
1934725	Butylate	2.99	Spike	P	0 - 30
1934725	Chlorpyrifos Ethyl	2.23	Spike	P	0 - 30
1934725	Chlorpyrifos Methyl	9.54	Spike	P	0 - 30
1934725	Cyanazine	18.1	Spike	P	0 - 30
1934725	Demeton	4.53	Spike	P	0 - 30
1934725	Diazinon	9.33	Spike	P	0 - 30
1934725	Disulfoton	13.5	Spike	P	0 - 30
1934725	EPTC	4.02	Spike	P	0 - 30
1934725	Ethion	5.04	Spike	P	0 - 30
1934725	Ethoprop	10.6	Spike	P	0 - 30
1934725	Fenamiphos	5.30	Spike	P	0 - 30
1934725	Fipronil	3.91	Spike	P	0 - 30
1934725	Fipronil Sulfide	1.44	Spike	P	0 - 30
1934725	Fipronil Sulfone	1.71	Spike	P	0 - 30
1934725	Fonofos	9.77	Spike	P	0 - 30
1934725	Hexazinone	5.67	Spike	P	0 - 30
1934725	Malathion	3.32	Spike	P	0 - 30
1934725	Metalaxyl	1.73	Spike	P	0 - 30
1934725	Metolachlor	5.17	Spike	P	0 - 30
1934725	Metribuzin	1.49	Spike	P	0 - 30
1934725	Mevinphos	1.67	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P333058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934725	Molinate	12.9	Spike	P	0 - 30
1934725	Norflurazon	5.62	Spike	P	0 - 30
1934725	Parathion Ethyl	1.99	Spike	P	0 - 30
1934725	Parathion Methyl	4.70	Spike	P	0 - 30
1934725	Pendimethalin	2.16	Spike	P	0 - 30
1934725	Phorate	2.70	Spike	P	0 - 30
1934725	Prometon	2.42	Spike	P	0 - 30
1934725	Prometryn	4.80	Spike	P	0 - 30
1934725	Simazine	14.7	Spike	P	0 - 30
1934725	Terbufos	3.22	Spike	P	0 - 30
1934725	Terbutylazine	8.38	Spike	P	0 - 30
LFB	Acetochlor	12.8	LCS	P	0 - 30
LFB	Alachlor	5.87	LCS	P	0 - 30
LFB	Ametryn	2.13	LCS	P	0 - 30
LFB	Atrazine	2.13	LCS	P	0 - 30
LFB	Atrazine Desethyl	12.7	LCS	P	0 - 30
LFB	Azinphos Methyl	11.0	LCS	P	0 - 30
LFB	Bromacil	9.13	LCS	P	0 - 30
LFB	Butylate	31.3	LCS	F	0 - 30
LFB	Chlorpyrifos Ethyl	8.31	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	8.83	LCS	P	0 - 30
LFB	Cyanazine	46.0	LCS	F	0 - 30
LFB	Demeton	13.4	LCS	P	0 - 30
LFB	Diazinon	27.4	LCS	P	0 - 30
LFB	Disulfoton	4.96	LCS	P	0 - 30
LFB	EPTC	29.4	LCS	P	0 - 30
LFB	Ethion	14.3	LCS	P	0 - 30
LFB	Ethoprop	8.06	LCS	P	0 - 30
LFB	Fenamiphos	14.2	LCS	P	0 - 30
LFB	Fipronil	6.36	LCS	P	0 - 30
LFB	Fipronil Sulfide	20.2	LCS	P	0 - 30
LFB	Fipronil Sulfone	27.2	LCS	P	0 - 30
LFB	Fonofos	9.22	LCS	P	0 - 30
LFB	Hexazinone	12.7	LCS	P	0 - 30
LFB	Malathion	15.7	LCS	P	0 - 30
LFB	Metalaxyl	0.535	LCS	P	0 - 30
LFB	Metolachlor	4.61	LCS	P	0 - 30
LFB	Metribuzin	43.2	LCS	F	0 - 30
LFB	Mevinphos	7.15	LCS	P	0 - 30
LFB	Molinate	23.7	LCS	P	0 - 30
LFB	Norflurazon	5.47	LCS	P	0 - 30
LFB	Parathion Ethyl	0.00561	LCS	P	0 - 30
LFB	Parathion Methyl	11.6	LCS	P	0 - 30
LFB	Pendimethalin	2.27	LCS	P	0 - 30
LFB	Phorate	3.17	LCS	P	0 - 30
LFB	Prometon	8.67	LCS	P	0 - 30
LFB	Prometryn	7.21	LCS	P	0 - 30
LFB	Simazine	0.503	LCS	P	0 - 30
LFB	Terbufos	5.71	LCS	P	0 - 30
LFB	Terbutylazine	0.218	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P332947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1935024	Chlordane	13.6	Spike	P	0 - 30
1935024	Toxaphene	17.5	Spike	P	0 - 30
LFB	Chlordane	14.3	LCS	P	0 - 30
LFB	Toxaphene	22.1	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P332696

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933717	Glyphosate	5.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P332701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934227	Pyraclostrobin	16.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P332778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	Sucralose	30.9	Spike	F	0 - 30

Reference Method: SM 2120 B
Batch ID: P332835

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Color (true)	0.867	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333347

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Total Alkalinity	0.208	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P333146

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934708	TDS	4.85	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97

Batch ID: P333350

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934698	Fluoride	0.482	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00

Batch ID: P333409

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934486	Organic Carbon	1.11	Spike	P	0 - 20

Reference Method: USGS O-2060-01

Batch ID: P332779

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934706	2,4-D	4.57	Spike	P	0 - 30
1934706	Acetaminophen	4.40	Spike	P	0 - 30
1934706	Bentazon	4.62	Spike	P	0 - 30
1934706	Carbamazepine	3.92	Spike	P	0 - 30
1934706	Diuron	3.96	Spike	P	0 - 30
1934706	Fenuron	9.55	Spike	P	0 - 30
1934706	Fluridone	4.22	Spike	P	0 - 30
1934706	Imidacloprid	2.56	Spike	P	0 - 30
1934706	Linuron	6.61	Spike	P	0 - 30
1934706	MCPP	5.30	Spike	P	0 - 30
1934706	Primidone	1.90	Spike	P	0 - 30
1934706	Triclopyr	6.44	Spike	P	0 - 30

* 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: 1934706

Field Sample ID: G1SW0059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	73.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	96.6	P	30 - 160
EPA 8321B	Diuron-d6	67.0	P	30 - 160
EPA 8321B	Diuron-d6	97.2	P	30 - 160
EPA 8321B	Diuron-d6	67.0	P	30 - 160
EPA 8321B	Diuron-d6	97.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	117	P	40 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Primidone-d5	95.1	P	30 - 160
EPA 8321B	Sucralose-d6	94.9	P	40 - 160
EPA 8321B	Sucralose-d6	94.9	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1934706
 Field Sample ID: G1SW0059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	2,4-D-d3	62.4	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	73.5	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	96.6	P	30 - 160
USGS O-2060-01	Diuron-d6	67.0	P	30 - 160
USGS O-2060-01	Diuron-d6	97.2	P	30 - 160
USGS O-2060-01	Primidone-d5	95.1	P	30 - 160
USGS O-2060-01	Sucralose-d6	94.9	P	40 - 160

Lab Sample ID: 1934724
 Field Sample ID: G1SW0059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	29.0	F	39 - 118
EPA 8270D	Tetrachloro-m-xylene	17.0	F	32 - 103
EPA 8276	Decachlorobiphenyl	37.3	P	31 - 100

Lab Sample ID: 1934725
 Field Sample ID: G1SW0059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	66.4	P	53 - 135
EPA 8270D	Simazine-d10	103	P	71 - 126

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
 Run ID: A79366
 Included Lab Sample IDs: 1934698, 1934701

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

Reference Method: SM 2120 B
 Run ID: A79372
 Included Lab Sample IDs: 1934698, 1934701

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Run ID: A79378
 Included Lab Sample IDs: 1934700, 1934703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	97.8	P/P	90 - 110
O-Phosphate-P	98.5	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A79430
Included Lab Sample IDs: 1934706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	104	98.0	P/P	70 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A79473
Included Lab Sample IDs: 1934698, 1934701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	104	P/P	90 - 110
Sulfate	99.4	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A79474
Included Lab Sample IDs: 1934726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	105	106	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	102	102	P/P	90 - 110
Copper	103	105	P/P	90 - 110
Silver	97.6	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A79476
Included Lab Sample IDs: 1934726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	106	104	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	104	103	P/P	90 - 110
Potassium	98.7	98.3	P/P	90 - 110
Sodium	96.9	95.2	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A79478
Included Lab Sample IDs: 1934706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	104	103	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A79478
Included Lab Sample IDs: 1934706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.8	93.4	P/P	50 - 150
Acetaminophen	83.8	87.9	P/P	60 - 150
Bentazon	88.2	89.7	P/P	50 - 150
Carbamazepine	94.6	96.4	P/P	60 - 150
Diuron	92.6	94.7	P/P	60 - 150
Fenuron	92.3	94.6	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: A79478

Included Lab Sample IDs: 1934706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	108	107	P/P	60 - 160
Imidacloprid	92.4	88.3	P/P	60 - 150
Linuron	96.6	99.8	P/P	60 - 150
MCPP	97.8	98.1	P/P	50 - 150
Primidone	99.8	100	P/P	60 - 150
Triclopyr	99.6	98.2	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79506

Included Lab Sample IDs: 1934699, 1934702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79510

Included Lab Sample IDs: 1934699, 1934702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A79511

Included Lab Sample IDs: 1934706

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	85.0	82.7	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A79522

Included Lab Sample IDs: 1934726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	100	99.9	P/P	90 - 110
Nickel	102	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79535

Included Lab Sample IDs: 1934698, 1934701

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79535

Included Lab Sample IDs: 1934698, 1934701

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79545

Included Lab Sample IDs: 1934702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79547

Included Lab Sample IDs: 1934702

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

Reference Method: SM 5310 B-00

Run ID: A79563

Included Lab Sample IDs: 1934699, 1934702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79564

Included Lab Sample IDs: 1934699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79578

Included Lab Sample IDs: 1934699

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.2	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A79710

Included Lab Sample IDs: 1934724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	85.3		P	80 - 120
Toxaphene	103		P	80 - 120

Reference Method: EPA 8270D

Run ID: A79728

Included Lab Sample IDs: 1934724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	97.5		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	96.4		P	80 - 120
Beta-BHC	93.4		P	80 - 120
Carbophenothion	98.2		P	80 - 120
Chlorothalonil	97.5		P	80 - 120
Cypermethrin	95.1		P	80 - 120
DDD-p,p'	97.0		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270D

Run ID: A79728

Included Lab Sample IDs: 1934724

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDE-p,p'	98.5		P	80 - 120
DDT-p,p'	107		P	80 - 120
Delta-BHC	96.0		P	80 - 120
Dicofol	91.2		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	95.4		P	80 - 120
Endosulfan II	91.2		P	80 - 120
Endosulfan Sulfate	102		P	80 - 120
Endrin	98.8		P	80 - 120
Endrin Aldehyde	95.5		P	80 - 120
Endrin Ketone	98.0		P	80 - 120
Gamma-BHC	103		P	80 - 120
Gamma-Chlordane	95.6		P	80 - 120
Heptachlor	95.9		P	80 - 120
Heptachlor Epoxide	97.8		P	80 - 120
Methoxychlor	106		P	80 - 120
Mirex	100		P	80 - 120
Permethrin	97.1		P	80 - 120
Trifluralin	79.6*		F	80 - 120

Reference Method: EPA 8270D

Run ID: A79787

Included Lab Sample IDs: 1934725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	105		P	80 - 120
Alachlor	104		P	80 - 120
Ametryn	97.2		P	80 - 120
Atrazine	94.6		P	80 - 120
Atrazine Desethyl	93.5		P	80 - 120
Azinphos Methyl	109		P	80 - 120
Bromacil	102		P	80 - 120
Butylate	105		P	80 - 120
Chlorpyrifos Ethyl	97.8		P	80 - 120
Chlorpyrifos Methyl	98.4		P	80 - 120
Cyanazine	93.1		P	80 - 120
Demeton	94.0		P	80 - 120
Diazinon	101		P	80 - 120
Disulfoton	97.8		P	80 - 120
EPTC	97.7		P	80 - 120
Ethion	95.0		P	80 - 120
Ethoprop	97.8		P	80 - 120
Fenamiphos	101		P	80 - 120
Fipronil	101		P	80 - 120
Fipronil Sulfide	118		P	80 - 120
Fipronil Sulfone	99.9		P	80 - 120
Fonofos	92.4		P	80 - 120
Hexazinone	98.0		P	80 - 120
Malathion	98.4		P	80 - 120
Metalaxyl	102		P	80 - 120
Metolachlor	103		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
 Run ID: A79787
 Included Lab Sample IDs: 1934725

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Metribuzin	94.7		P	80 - 120
Mevinphos	97.0		P	80 - 120
Molinate	105		P	80 - 120
Norflurazon	95.8		P	80 - 120
Parathion Ethyl	93.5		P	80 - 120
Parathion Methyl	97.4		P	80 - 120
Pendimethalin	90.9		P	80 - 120
Phorate	95.0		P	80 - 120
Prometon	91.3		P	80 - 120
Prometryn	104		P	80 - 120
Simazine	97.4		P	80 - 120
Terbufos	97.6		P	80 - 120
Terbutylazine	104		P	80 - 120

* 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							0.777	
EPA 200.7 Rev. 4.4	Calcium	111		111	112	113			1.29
	Iron	109		109	107	109			1.31
	Magnesium	111		111	110	111			1.22
	Potassium	101		101	104	105			0.847
	Sodium	99.4		99.9	99.3				0.643
	Zinc	103		104	105	106			0.226
EPA 200.8 Rev. 5.4	Arsenic	101		101	100	101			0.896
	Cadmium	102		102	100	102			1.92
	Chromium	98.9		98.5	97.7	98.3			0.616
	Copper	96.5		96.8	97.3	97.9			0.629
	Lead	98.4		99.3	99.2	99.6			0.390
	Nickel	98.0		98.1	98.1	98.6			0.443
	Silver	96.6		95.6	95.5	95.8			0.279
EPA 300.0 Rev. 2.1	Chloride	98.8		96.1	98.2			0.0361	
	Sulfate	96.0		93.8	95.6			0.0383	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7		102	99.8				1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.7		98.7	96.1				1.54
	Kjeldahl Nitrogen	105		101	95.2				3.21
EPA 353.2 Rev. 2.0	NO2NO3-N	102		103	103				0.0
EPA 365.1 Rev. 2.0	Total-P	98.5		100	101				0.261
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		97.3	98.5				1.23
EPA 8270D	Acetochlor	91.8	104	96.2	104		12.8		8.00
	Alachlor	97.6	103	95.5	99.6		5.87		4.19
	Aldrin	44.1	47.9	46.0	44.7		8.45		2.97
	Alpha-BHC	62.3	63.2	57.5	56.0		1.42		2.62
	Alpha-Chlordane	65.2	61.2	66.9	64.4		6.24		3.77

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 8270D	Ametryn	91.5	89.5	89.6	69.8	2.13		14.5
	Atrazine	93.2	95.2			2.13		12.0
	Atrazine Desethyl	99.5	113	96.9	92.7	12.7		3.90
	Azinphos Methyl	95.5	107	99.6	110	11.0		10.0
	Beta-BHC	65.3	65.9	86.0	81.4	0.858		5.56
	Bromacil	90.4	82.5	101	107	9.13		6.31
	Butylate	78.4	57.2	59.4	57.6	31.3		2.99
	Carbophenothion	53.9	69.3	115	111	24.9		3.27
	Chlorothalonil	100	82.2	151	121	19.8		21.9
	Chlorpyrifos Ethyl	94.2	86.7	81.4	83.2	8.31		2.23
	Chlorpyrifos Methyl	89.0	97.2	94.4	104	8.83		9.54
	Cyanazine	97.6	156	134	160	46.0		18.1
	Cypermethrin	62.2	60.8	88.5	80.0	2.20		10.1
	DDD-p,p'	68.9	71.5	74.5	71.6	3.62		3.96
	DDE-p,p'	66.5	62.6	66.2	60.5	5.95		9.05
	DDT-p,p'	64.8	62.3	67.7	61.0	3.96		10.4
	Delta-BHC	63.0	64.1	100	88.9	1.77		11.7
	Demeton	97.1	84.9	83.0	86.9	13.4		4.53
	Diazinon	87.2	115	110	121	27.4		9.33
	Dicofol	34.9	37.8	17.2	13.5	8.00		23.8
	Dieldrin	64.7	67.3	70.6	65.2	3.81		7.90
	Disulfoton	103	108	106	121	4.96		13.5
	Endosulfan I	72.4	67.0	75.8	72.9	7.77		3.95
	Endosulfan II	73.2	72.0	85.6	80.1	1.66		6.67
	Endosulfan Sulfate	60.7	66.5	83.0	75.2	9.08		9.88
	Endrin	67.5	65.4	65.1	68.0	3.06		4.39
	Endrin Aldehyde	64.3	57.7	68.7	55.7	10.9		21.0
	Endrin Ketone	63.5	61.0	75.5	68.3	4.07		10.0
	EPTC	73.3	54.5	57.4	55.2	29.4		4.02
	Ethion	95.8	83.0	78.4	82.5	14.3		5.04
	Ethoprop	83.1	90.1	99.7	111	8.06		10.6
	Fenamiphos	99.1	85.9	88.6	84.0	14.2		5.30
	Fipronil	95.9	102	107	111	6.36		3.91
	Fipronil Sulfide	93.5	76.3	82.7	84.2	20.2		1.44
	Fipronil Sulfone	89.7	68.2	71.4	73.2	27.2		1.71
	Fonofos	84.8	93.0	98.2	108	9.22		9.77
	Gamma-BHC	66.8	65.5	66.8	75.5	2.05		12.2
	Gamma-Chlordane	64.5	60.4	66.6	64.1	6.68		3.94
	Heptachlor	58.0	53.1	52.7	50.7	8.88		3.87
	Heptachlor Epoxide	65.2	60.2	67.4	64.2	7.87		4.86
	Hexazinone	93.2	82.1	87.4	94.3	12.7		5.67
	Malathion	92.8	79.2	95.9	99.2	15.7		3.32
	Metalaxyl	91.5	91.0	99.2	97.5	0.535		1.73
	Methoxychlor	73.5	68.1	70.6	65.4	7.68		7.64
	Metolachlor	98.7	94.3	93.1	98.1	4.61		5.17
	Metribuzin	72.6	113	124	123	43.2		1.49
	Mevinphos	86.2	80.2	91.1	92.6	7.15		1.67
	Mirex	52.3	50.6	57.9	52.6	3.32		9.45
	Molinate	73.8	58.2	49.1	55.9	23.7		12.9
	Norflurazon	92.6	87.7	82.2	86.9	5.47		5.62
	Parathion Ethyl	89.1	89.1	92.3	94.2	0.0056		1.99
	Parathion Methyl	93.5	105	109	114	11.6		4.70
	Pendimethalin	91.3	93.4	102	99.3	2.27		2.16
	Permethrin	63.3	60.6	75.0	68.8	4.51		8.64

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8270D	Phorate	85.4	88.2	90.2	87.8	3.17	2.70
	Prometon	93.1	85.4	86.2	81.8	8.67	2.42
	Prometryn	94.5	102	95.3	100	7.21	4.80
	Simazine	96.7	96.2	94.4	113	0.503	14.7
	Terbufos	86.0	91.1	98.7	102	5.71	3.22
	Terbutylazine	92.3	92.1	92.1	100	0.218	8.38
	Trifluralin	58.9	56.8	86.0	83.6	3.74	2.83
EPA 8276	Chlordane	79.7	69.1	108	94.0	14.3	13.6
	Toxaphene	104	83.6	141	118	22.1	17.5
EPA 8321B	Glyphosate	112		112	118		5.53
	Pyraclostrobin	105		101	119		16.0
	Sucralose	101		69.3	114		30.9
SM 2120 B	Color (true)					0.867	
SM 2320 B-97	Total Alkalinity	103				0.208	
SM 2540 C-97	TDS					4.85	
SM 4500 F-C-97	Fluoride	102		101	101		0.482
SM 5310 B-00	Organic Carbon	103		98.8	97.6		1.11
USGS O-2060-01	2,4-D	109		66.3	58.8		4.57
	Acetaminophen	103		84.5	80.9		4.40
	Bentazon	43.4		25.7	21.7		4.62
	Carbamazepine	126		90.7	94.5		3.92
	Diuron	116		76.1	79.7		3.96
	Fenuron	96.1		82.5	90.8		9.55
	Fluridone	107					4.22
	Imidacloprid	98.5					2.56
	Linuron	95.6		91.9	98.1		6.61
	MCP	121		50.3	53.1		5.30
	Primidone	97.2		105	107		1.90
	Triclopyr	125		47.5	50.6		6.44

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934698, 1934701
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1934726
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1934726
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934698, 1934701
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934698, 1934701
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934699, 1934702
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934699, 1934702
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934699, 1934702
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934699, 1934702
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934700, 1934703
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1934724

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1934725
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1934724
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1934706
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1934706
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1934706
SM 2120 B / E31780	True Color measured at 450 nm	1934698, 1934701
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1934698, 1934701
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934698, 1934701
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934698, 1934701
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934698, 1934701
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934699, 1934702
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1934706
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1934706

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	10/05/2017			10/05/2017 15:12	DeAsia Armster	1934698, 1934701
EPA 200.7 Rev. 4.4	10/05/2017	10/09/2017	Elliott D. Healy	10/10/2017	Betina Topolski	1934726
EPA 200.8 Rev. 5.4	10/05/2017	10/09/2017	Elliott D. Healy	10/10/2017	Nadine Brooks	1934726
	10/05/2017	10/09/2017	Elliott D. Healy	10/13/2017	Nadine Brooks	1934726
EPA 300.0 Rev. 2.1	10/05/2017			10/09/2017	Julia Storbeck	1934698
	10/05/2017			10/10/2017	Julia Storbeck	1934701
EPA 350.1 Rev. 2.0	10/05/2017			10/11/2017	Sofia Elnemr	1934699, 1934702
EPA 351.2 Rev. 2.0	10/05/2017	10/11/2017	Adrian Shelby	10/12/2017	Joseph Suarez	1934702
	10/05/2017	10/12/2017	Adrian Shelby	10/13/2017	Virginia P. Brown	1934699
EPA 353.2 Rev. 2.0	10/05/2017			10/12/2017	Beverly Y. Sanders	1934699, 1934702
EPA 365.1 Rev. 2.0	10/05/2017	10/12/2017	Sima Feizi	10/13/2017	Lipi Saha	1934702
	10/05/2017	10/12/2017	Sima Feizi	10/16/2017	Lipi Saha	1934699
EPA 365.1 Rev. 2.0 dissolved	10/05/2017			10/05/2017 16:06	Megan Treadwell	1934700
	10/05/2017			10/05/2017 16:21	Megan Treadwell	1934703
EPA 8270D	10/05/2017	10/09/2017	John Kaba	10/20/2017	Marek Topolski	1934724
	10/05/2017	10/10/2017	Rasheda Ghaffari	10/20/2017	Irina Carbone	1934725
EPA 8276	10/05/2017	10/09/2017	John Kaba	10/20/2017	John P. Burgos	1934724
EPA 8321B	10/05/2017	10/09/2017	Juyoung Kim	10/09/2017	Juyoung Kim	1934706
	10/05/2017	10/10/2017	Hoor Shaik	10/11/2017	Julie Michelle Frank	1934706
	10/05/2017	10/11/2017	Juyoung Kim	10/11/2017	Juyoung Kim	1934706
SM 2120 B	10/05/2017			10/05/2017 15:31	Tanya Welborn	1934698
	10/05/2017			10/05/2017 15:51	Tanya Welborn	1934701
SM 2320 B-97	10/05/2017			10/13/2017	Dale L. Simmons	1934698, 1934701
SM 2540 C-97	10/05/2017			10/06/2017	DeAsia Armster	1934698, 1934701
SM 2540 D-97	10/05/2017			10/06/2017	DeAsia Armster	1934698, 1934701
SM 4500 F-C-97	10/05/2017			10/13/2017	Dale L. Simmons	1934698, 1934701
SM 5310 B-00	10/05/2017			10/13/2017	Ping Hua	1934699, 1934702
USGS O-2060-01	10/05/2017	10/10/2017	Hoor Shaik	10/12/2017	Julie Michelle Frank	1934706