

Chemical Analysis Report

NE-DIST-2017-07-19-02

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

Event Description: **Gainesville 3**
Request ID: **RQ-2017-07-17-08**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way
Suite 100
Jacksonville, FL 32256-7577
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 10-AUG-2017 11:30

A handwritten signature in black ink, appearing to read "Liang Lin", on a light-colored background.

Case Narrative

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

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: LAKE KANAPAHA 300M N OF 56TH

Collection Date/Time: 07/18/2017 11:55

Field ID: G2NE0933 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914585	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P328799	
	EPA 300.0 Rev. 2.1	Chloride	12	A	mg Cl/L	P328865	
		Sulfate	1.6	A	mg SO4/L	P328867	
	SM 2120 B	Color (true)	240		PCU	P328804	
	SM 2320 B-97	Total Alkalinity	71		mg CaCO3/L	P328972	
	SM 2540 C-97	TDS	122		mg/L	P329281	
	SM 2540 D-97	TSS	12		mg/L	P329297	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P329084	
1914588	EPA 350.1 Rev. 2.0	Ammonia-N	0.49		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	3.3		mg N/L	P328894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P328982	
	EPA 365.1 Rev. 2.0	Total-P	1.2		mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	23		mg C/L	P329126	
1914591	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.92		mg P/L	P328789	

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: LAKE ALICE-CENTER FROM BRIDGE

Collection Date/Time: 07/18/2017 11:15

Field ID: G1NE0038 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914582	EPA 180.1 Rev. 2.0	Turbidity	6.8	A	NTU	P328799	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P328865	
		Sulfate	25		mg SO4/L	P328867	
	SM 2120 B	Color (true)	52		PCU	P328804	
	SM 2320 B-97	Total Alkalinity	74		mg CaCO3/L	P328972	
	SM 2540 C-97	TDS	142		mg/L	P329281	
	SM 2540 D-97	TSS	7	I	mg/L	P329297	
	SM 4500 F-C-97	Fluoride	0.32		mg F/L	P329084	
1914583	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P328894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328982	
	EPA 365.1 Rev. 2.0	Total-P	0.55		mg P/L	P328928	
	SM 5310 B-00	Organic Carbon	8.5		mg C/L	P329126	
1914584	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.43		mg P/L	P328789	
1914598	EPA 8321B	Glyphosate**	0.50	U	ug/L	P328648	
		Pyraclostrobin**	0.0020	U	ug/L	P328783	
	USGS O-2060-01	2,4-D	0.66		ug/L	P328838	
		Diuron	0.015		ug/L	P328838	
		Fenuron	0.0080	U	ug/L	P328838	
		Imidacloprid	0.0069	J	ug/L	P328838	MS
		Bentazon	0.0011	I	ug/L	P328838	
		Linuron	0.0040	U	ug/L	P328838	
		Acetaminophen**	0.0080	U	ug/L	P328838	

Field ID: G1NE0038 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914598	USGS O-2060-01	MCP	0.0020	U	ug/L	P328838	
		Carbamazepine**	0.0012	I	ug/L	P328838	
		Triclopyr**	0.0040	U	ug/L	P328838	
		Primidone**	0.0040	U	ug/L	P328838	
		Fluridone**	0.0039		ug/L	P328838	
1914599	EPA 8270D	Aldrin	4.2	U	ng/L	P328810	
		Alpha-BHC	2.1	U	ng/L	P328810	
		Beta-BHC	4.2	U	ng/L	P328810	
		Delta-BHC	4.2	U	ng/L	P328810	
		Gamma-BHC	4.2	U	ng/L	P328810	
		Carbophenothion	4.2	U	ng/L	P328810	RPD
		Chlorothalonil	2.1	UJ	ng/L	P328810	CCV
		Cypermethrin	21	U	ng/L	P328810	
		DDD-p,p'	2.1	U	ng/L	P328810	
		DDE-p,p'	3.2	U	ng/L	P328810	
		DDT-p,p'	3.2	U	ng/L	P328810	
		Dieldrin	4.2	U	ng/L	P328810	
		Endosulfan I	4.2	U	ng/L	P328810	
		Endosulfan II	4.2	U	ng/L	P328810	
		Endosulfan Sulfate	2.1	U	ng/L	P328810	
		Endrin	2.1	U	ng/L	P328810	
		Endrin Aldehyde	2.1	U	ng/L	P328810	
		Heptachlor	1.6	U	ng/L	P328810	
		Heptachlor Epoxide	2.1	U	ng/L	P328810	
		Methoxychlor	4.2	U	ng/L	P328810	
		Mirex	2.1	U	ng/L	P328810	
		Permethrin	11	U	ng/L	P328810	
		Trifluralin	1.1	U	ng/L	P328810	
		Alpha-Chlordane	1.1	U	ng/L	P328810	
		Gamma-Chlordane	1.1	U	ng/L	P328810	
		Endrin Ketone	2.1	U	ng/L	P328810	
		Dicofol	32	UJ	ng/L	P328810	CCV, RPD
	EPA 8276	Chlordane**	2.7	U	ng/L	P328810	
		Toxaphene**	13	U	ng/L	P328810	
1914600	EPA 8270D	Alachlor	0.25	U	ng/L	P329016	
		Ametryn	0.33	U	ng/L	P329016	
		Atrazine	0.32	I	ng/L	P329016	
		Atrazine Desethyl	1.5	U	ng/L	P329016	
		Azinphos Methyl	2.3	U	ng/L	P329016	
		Bromacil	26		ng/L	P329016	
		Butylate	0.41	U	ng/L	P329016	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P329016	
		Chlorpyrifos Methyl	0.10	U	ng/L	P329016	
		Demeton	2.0	U	ng/L	P329016	RPD
		Diazinon	0.13	U	ng/L	P329016	MS, RPD

Field ID: G1NE0038 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914600	EPA 8270D	Disulfoton	0.33	U	ng/L	P329016	RPD
		EPTC	1.3	U	ng/L	P329016	
		Ethion	0.15	U	ng/L	P329016	
		Ethoprop	0.10	U	ng/L	P329016	MS, RPD
		Fenamiphos	0.25	U	ng/L	P329016	
		Fipronil	0.54	I	ng/L	P329016	
		Fipronil Sulfide	2.1		ng/L	P329016	
		Fipronil Sulfone	2.7		ng/L	P329016	
		Hexazinone	0.51	U	ng/L	P329016	
		Malathion	0.35	U	ng/L	P329016	
		Metribuzin	0.20	U	ng/L	P329016	MS, RPD
		Mevinphos	0.51	U	ng/L	P329016	RPD
		Molinate	0.30	U	ng/L	P329016	RPD
		Norflurazon	0.51	U	ng/L	P329016	
		Pendimethalin	1.5	U	ng/L	P329016	
		Phorate	0.25	U	ng/L	P329016	RPD
		Prometon	0.91	U	ng/L	P329016	
		Prometryn	0.20	U	ng/L	P329016	
		Simazine	0.51	U	ng/L	P329016	
		Terbufos	0.10	U	ng/L	P329016	MS, RPD
		Terbuthylazine	0.43	U	ng/L	P329016	
		Fonofos	0.20	U	ng/L	P329016	MS, RPD
		Metalaxyl	0.92		ng/L	P329016	
		Metolachlor	0.32	I	ng/L	P329016	
		Acetochlor	0.25	U	ng/L	P329016	
		Cyanazine	0.51	U	ng/L	P329016	RPD
		Parathion Ethyl	0.25	U	ng/L	P329016	
		Parathion Methyl	0.25	U	ng/L	P329016	
1914601	EPA 200.7 Rev. 4.4	Calcium	36.2		mg/L	P328878	
		Iron	58	I	ug/L	P328878	
		Magnesium	6.59		mg/L	P328878	
		Potassium	2.0		mg/L	P328878	
		Sodium	9.9		mg/L	P328878	
		Zinc	5.0	U	ug/L	P328878	
	EPA 200.8 Rev. 5.4	Arsenic	0.64		ug/L	P328878	
		Cadmium	0.020	U	ug/L	P328878	
		Chromium	0.40	U	ug/L	P328878	
		Copper	1.34		ug/L	P328878	
		Lead	0.26		ug/L	P328878	
		Nickel	0.32	I	ug/L	P328878	
		Silver	0.010	U	ug/L	P328878	

Field ID: G1NE0038 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
Ref. Method and Comment:							
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.							
USGS O-2060-01: MS accuracy for 2,4-D could not be assessed due to high concentration of parameter in the spiked sample.							
USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.							
EPA 8270D: Refer to the narrative for an explanation of QC Codes.							
EPA 8270D: MS accuracy for Atrazine, Fipronil, Fipronil Sulfide, and Fipronil Sulfone not assessed due to high content of these parameters in the sample spiked.							

Sample Location: BIVENS ARM OUTLET @ SR 331

Collection Date/Time: 07/18/2017 12:30

Field ID: G1NE0208 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914586	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P328799	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P328908	
		Sulfate	6.0		mg SO4/L	P328912	
	SM 2120 B	Color (true)	72	A	PCU	P328804	
	SM 2320 B-97	Total Alkalinity	85		mg CaCO3/L	P328972	
	SM 2540 C-97	TDS	117	A	mg/L	P329281	
	SM 2540 D-97	TSS	3	IA	mg/L	P329297	
1914589	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P329084	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.76		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.6		mg N/L	P328894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P328982	
	EPA 365.1 Rev. 2.0	Total-P	0.18		mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P329126	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P328789	

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: CALF POND-CENTER

Collection Date/Time: 07/18/2017 10:20

Field ID: G1NE0862 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1914587	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P328799	
	EPA 300.0 Rev. 2.1	Chloride	14	A	mg Cl/L	P328908	
		Sulfate	8.7	A	mg SO4/L	P328912	
	SM 2120 B	Color (true)	290		PCU	P328804	
	SM 2320 B-97	Total Alkalinity	64		mg CaCO3/L	P328972	
	SM 2540 C-97	TDS	171	A	mg/L	P329282	
	SM 2540 D-97	TSS	3	IA	mg/L	P329298	
1914590	SM 4500 F-C-97	Fluoride	0.15		mg F/L	P329084	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P328956	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P328894	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P328982	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P328929	
	SM 5310 B-00	Organic Carbon	30		mg C/L	P329126	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P328789	

Field ID: G1NE0862 07182017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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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: P328799

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P328878

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: P328878

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: P328865

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P328867

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P328908

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328912

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328894

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328982

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328928

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

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

Reference Method: EPA 8270D
Batch ID: P328810

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'	2.0	U	ng/L
DDE-p,p'	3.0	U	ng/L
DDT-p,p'	3.0	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P328810

Component	Result	Code	Units
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 8270D
Batch ID: P329016

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	0.32	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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P329016

Component	Result	Code	Units
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	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 8276
Batch ID: P328810

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

Reference Method: EPA 8321B
Batch ID: P328648

Component	Result	Code	Units
Glyphosate	0.50	U	ug/L

Reference Method: EPA 8321B
Batch ID: P328783

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: SM 2120 B
Batch ID: P328804

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P328972

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

Reference Method: SM 2540 C-97
Batch ID: P329281

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P329282

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P329297

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329298

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329126

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

Reference Method: USGS O-2060-01
Batch ID: P328838

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
MCPP	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: P328878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	111		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	101		P	85 - 115
Sodium	105		P	85 - 115
Zinc	104		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	101		P	85 - 115
Cadmium	99.9		P	85 - 115
Chromium	98.1		P	85 - 115
Copper	98.3		P	85 - 115
Lead	95.7		P	85 - 115
Nickel	99.6		P	85 - 115
Silver	99.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328908

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328912

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328894

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328982

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328928

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	98.1		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

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

Reference Method: EPA 8270D
Batch ID: P328810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	55.9	51.6	P/P	26 - 88.0
Alpha-BHC	90.7	84.5	P/P	63 - 114
Alpha-Chlordane	91.1	83.6	P/P	56 - 117
Beta-BHC	106	105	P/P	57 - 138
Carbophenothion	102	86.3	P/P	36 - 148
Chlorothalonil	40.9	42.8	P/P	26 - 173
Cypermethrin	85.1	84.9	P/P	42 - 159
DDD-p,p'	103	91.9	P/P	62 - 126
DDE-p,p'	95.5	85.6	P/P	53 - 115
DDT-p,p'	95.0	87.3	P/P	54 - 117
Delta-BHC	113	100	P/P	68 - 158
Dicofol	65.3	69.1	P/P	25 - 114
Dieldrin	96.8	91.4	P/P	59 - 126
Endosulfan I	94.5	85.8	P/P	62 - 138
Endosulfan II	99.0	84.1	P/P	61 - 150
Endosulfan Sulfate	94.9	85.9	P/P	63 - 132
Endrin	101	102	P/P	49 - 148
Endrin Aldehyde	102	89.7	P/P	50 - 144
Endrin Ketone	97.7	90.3	P/P	66 - 122
Gamma-BHC	96.5	97.9	P/P	60 - 137
Gamma-Chlordane	95.1	85.9	P/P	54 - 113
Heptachlor	79.5	73.0	P/P	43 - 104
Heptachlor Epoxide	94.6	87.3	P/P	64 - 118
Methoxychlor	107	98.6	P/P	63 - 129
Mirex	81.9	76.6	P/P	39 - 93.0
Permethrin	93.5	86.4	P/P	51 - 123
Trifluralin	149	139	P/P	35 - 187

Reference Method: EPA 8270D
Batch ID: P329016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	88.8	92.5	P/P	78 - 118
Alachlor	88.5	92.0	P/P	77 - 119

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
 Batch ID: P329016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ametryn	83.4	80.8	P/P	61 - 136
Atrazine	96.9	92.4	P/P	73 - 120
Atrazine Desethyl	80.2	84.1	P/P	16 - 122
Azinphos Methyl	119	126	P/P	69 - 186
Bromacil	84.1	92.1	P/P	40 - 125
Butylate	42.0	51.3	P/P	32 - 87.0
Chlorpyrifos Ethyl	93.1	103	P/P	53 - 110
Chlorpyrifos Methyl	89.4	96.5	P/P	31 - 119
Cyanazine	121	123	P/P	36 - 224
Demeton	72.2	82.9	P/P	39 - 122
Diazinon	87.3	92.0	P/P	75 - 119
Disulfoton	79.4	80.0	P/P	42 - 139
EPTC	44.2	51.1	P/P	33 - 96.0
Ethion	96.9	103	P/P	63 - 127
Ethoprop	67.5	74.2	P/P	65 - 107
Fenamiphos	90.2	102	P/P	64 - 137
Fipronil	78.1	88.1	P/P	60 - 126
Fipronil Sulfide	76.3	93.2	P/P	58 - 124
Fipronil Sulfone	80.0	92.6	P/P	57 - 126
Fonofos	80.4	87.2	P/P	65 - 111
Hexazinone	86.3	88.9	P/P	46 - 151
Malathion	102	107	P/P	68 - 132
Metalaxyl	85.8	87.0	P/P	51 - 132
Metolachlor	89.5	92.8	P/P	78 - 119
Metribuzin	112	120	P/P	64 - 138
Mevinphos	67.9	77.9	P/P	34 - 128
Molinate	52.1	63.7	P/P	44 - 101
Norflurazon	84.9	93.0	P/P	63 - 129
Parathion Ethyl	85.2	85.4	P/P	80 - 109
Parathion Methyl	93.0	97.0	P/P	74 - 125
Pendimethalin	86.7	83.7	P/P	48 - 134
Phorate	80.3	67.9	P/P	52 - 119
Prometon	90.5	90.0	P/P	69 - 124
Prometryn	89.2	90.8	P/P	66 - 124
Simazine	102	89.6	P/P	61 - 134
Terbufos	74.7	80.7	P/P	58 - 115
Terbuthylazine	91.9	98.2	P/P	77 - 113

Reference Method: EPA 8276
 Batch ID: P328810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	87.5	82.5	P/P	48 - 121
Toxaphene	98.6	88.3	P/P	43 - 135

Reference Method: EPA 8321B
 Batch ID: P328648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	123		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P328783

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	102		P	40 - 150

Reference Method: SM 2320 B-97
Batch ID: P328972

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

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.7		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P329126

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

Reference Method: USGS O-2060-01
Batch ID: P328838

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	107		P	40 - 150
Acetaminophen	99.9		P	30 - 150
Bentazon	103		P	40 - 150
Carbamazepine	120		P	40 - 150
Diuron	122		P	40 - 150
Fenuron	111		P	40 - 150
Fluridone	113		P	40 - 150
Imidacloprid	119		P	40 - 160
Linuron	112		P	40 - 150
MCPP	105		P	40 - 150
Primidone	97.7		P	40 - 150
Triclopyr	94.2		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914325	Calcium	112		P	80 - 120
1914325	Iron	113		P	80 - 120
1914325	Magnesium	115		P	80 - 120
1914325	Potassium	102		P	80 - 120
1914325	Sodium	108		P	80 - 120
1914325	Zinc	108		P	80 - 120
1914474	Calcium	106		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914474	Iron	113	111	P/P	80 - 120
1914474	Magnesium	106		P	80 - 120
1914474	Potassium	98.5		P	80 - 120
1914474	Sodium	103		P	80 - 120
1914474	Zinc	106	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914325	Arsenic	101		P	80 - 120
1914325	Cadmium	102		P	80 - 120
1914325	Chromium	100		P	80 - 120
1914325	Copper	98.9		P	80 - 120
1914325	Lead	96.2		P	80 - 120
1914325	Nickel	99.6		P	80 - 120
1914325	Silver	97.8		P	80 - 120
1914474	Arsenic	104	105	P/P	80 - 120
1914474	Cadmium	102	105	P/P	80 - 120
1914474	Chromium	97.7	98.8	P/P	80 - 120
1914474	Copper	100	101	P/P	80 - 120
1914474	Lead	98.0	98.9	P/P	80 - 120
1914474	Nickel	101	102	P/P	80 - 120
1914474	Silver	99.0	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914489	Chloride	99.7		P	90 - 110
1914585	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914489	Sulfate	97.1		P	90 - 110
1914585	Sulfate	98.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328908

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914587	Chloride	97.0		P	90 - 110
1914685	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914587	Sulfate	95.8		P	90 - 110
1914685	Sulfate	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P328956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914561	Ammonia-N	99.3	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P328894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914559	Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P328982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914561	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914559	Total-P	104	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P328929

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914589	Total-P	99.4	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P328789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914562	O-Phosphate-P	98.2	100	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P328810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915140	Aldrin	63.6	57.5	P/P	22 - 97.0
1915140	Alpha-BHC	89.3	82.0	P/P	43 - 132
1915140	Alpha-Chlordane	86.5	81.7	P/P	36 - 126
1915140	Beta-BHC	97.8	106	P/P	41 - 150
1915140	Carbophenothion	102	64.9	P/P	13 - 196
1915140	Chlorothalonil	85.0	104	P/P	10 - 266
1915140	Cypermethrin	87.3	96.3	P/P	37 - 161
1915140	DDD-p,p'	96.1	92.7	P/P	44 - 131
1915140	DDE-p,p'	91.0	83.6	P/P	32 - 127
1915140	DDT-p,p'	90.6	83.9	P/P	45 - 116
1915140	Delta-BHC	114	113	P/P	50 - 201
1915140	Dicofol	42.5	28.9	P/P	10 - 100
1915140	Dieldrin	91.5	82.0	P/P	39 - 142
1915140	Endosulfan I	100	82.7	P/P	51 - 139
1915140	Endosulfan II	88.0	90.5	P/P	49 - 155
1915140	Endosulfan Sulfate	86.8	87.8	P/P	54 - 136

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P328810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915140	Endrin	89.3	85.3	P/P	38 - 141
1915140	Endrin Aldehyde	88.3	79.0	P/P	14 - 152
1915140	Endrin Ketone	86.4	91.1	P/P	60 - 128
1915140	Gamma-BHC	97.6	93.5	P/P	48 - 157
1915140	Gamma-Chlordane	87.7	83.5	P/P	35 - 123
1915140	Heptachlor	73.1	64.9	P/P	25 - 112
1915140	Heptachlor Epoxide	92.5	85.4	P/P	48 - 125
1915140	Methoxychlor	94.0	90.4	P/P	52 - 127
1915140	Mirex	74.7	70.5	P/P	25 - 108
1915140	Permethrin	87.8	90.7	P/P	46 - 133
1915140	Trifluralin	161	165	P/P	29 - 254

Reference Method: EPA 8270D
Batch ID: P329016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914535	Acetochlor	82.4	94.7	P/P	74 - 123
1914535	Alachlor	78.9	97.3	P/P	73 - 124
1914535	Ametryn	92.4	113	P/P	56 - 149
1914535	Atrazine Desethyl	63.9	89.8	P/P	12 - 103
1914535	Azinphos Methyl	113	136	P/P	60 - 202
1914535	Bromacil	65.9	82.3	P/P	42 - 133
1914535	Butylate	33.6	42.7	P/P	10 - 85.0
1914535	Chlorpyrifos Ethyl	83.6	93.3	P/P	53 - 113
1914535	Chlorpyrifos Methyl	72.1	92.1	P/P	40 - 115
1914535	Cyanazine	67.3	149	P/P	22 - 210
1914535	Demeton	53.1	135	P/P	17 - 149
1914535	Diazinon	69.2	99.4	F/P	72 - 124
1914535	Disulfoton	64.8	92.9	P/P	43 - 139
1914535	EPTC	28.4	36.2	P/P	10 - 86.0
1914535	Ethion	95.2	87.6	P/P	65 - 131
1914535	Ethoprop	49.9	77.8	F/P	59 - 110
1914535	Fenamiphos	89.4	92.7	P/P	57 - 138
1914535	Fonofos	53.0	82.5	F/P	60 - 112
1914535	Hexazinone	76.9	83.8	P/P	69 - 142
1914535	Malathion	97.1	101	P/P	68 - 132
1914535	Metalaxyl	78.3	91.8	P/P	66 - 118
1914535	Metolachlor	82.9	97.6	P/P	71 - 124
1914535	Metribuzin	114	162	P/F	61 - 140
1914535	Mevinphos	47.0	71.0	P/P	38 - 130
1914535	Molinate	32.9	59.7	P/P	23 - 99.0
1914535	Norflurazon	65.5	85.4	P/P	39 - 139
1914535	Parathion Ethyl	77.9	81.9	P/P	75 - 111
1914535	Parathion Methyl	80.6	92.6	P/P	64 - 130
1914535	Pendimethalin	77.6	83.6	P/P	26 - 173
1914535	Phorate	45.0	84.3	P/P	43 - 127
1914535	Prometon	77.6	91.8	P/P	50 - 144
1914535	Prometryn	84.7	81.0	P/P	69 - 126
1914535	Simazine	96.5	113	P/P	51 - 152
1914535	Terbufos	50.0	85.6	F/P	54 - 125
1914535	Terbutylazine	82.9	86.4	P/P	76 - 113

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
 Batch ID: P328810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915146	Chlordane	97.4	103	P/P	44 - 134
1915146	Toxaphene	106	123	P/P	36 - 147

Reference Method: EPA 8321B
 Batch ID: P328648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1913901	Glyphosate	114	119	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P328783

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914533	Pyraclostrobin	89.4	79.2	P/P	40 - 150

Reference Method: SM 4500 F-C-97
 Batch ID: P329084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914940	Fluoride	99.4	100	P/P	91 - 105

Reference Method: SM 5310 B-00
 Batch ID: P329126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914491	Organic Carbon	96.6	96.2	P/P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P328838

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1914598	Acetaminophen	128	132	P/P	30 - 150
1914598	Bentazon	56.7	61.2	P/P	40 - 150
1914598	Carbamazepine	118	124	P/P	40 - 150
1914598	Diuron	90.3	84.6	P/P	40 - 150
1914598	Fenuron	91.8	92.6	P/P	40 - 150
1914598	Fluridone	52.7	52.7	P/P	40 - 150
1914598	Imidacloprid	178	178	F/F	40 - 160
1914598	Linuron	84.8	84.8	P/P	40 - 150
1914598	MCP	126	120	P/P	40 - 150
1914598	Primidone	102	115	P/P	40 - 150
1914598	Triclopyr	100	103	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P328799

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P328799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914582	Turbidity	1.92	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P328878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914474	Calcium	1.44	Spike	P	0 - 20
1914474	Iron	2.46	Spike	P	0 - 20
1914474	Magnesium	2.47	Spike	P	0 - 20
1914474	Potassium	0.903	Spike	P	0 - 20
1914474	Sodium	1.07	Spike	P	0 - 20
1914474	Zinc	0.955	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P328878

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914474	Arsenic	0.894	Spike	P	0 - 20
1914474	Cadmium	2.60	Spike	P	0 - 20
1914474	Chromium	1.16	Spike	P	0 - 20
1914474	Copper	0.664	Spike	P	0 - 20
1914474	Lead	0.873	Spike	P	0 - 20
1914474	Nickel	1.55	Spike	P	0 - 20
1914474	Silver	1.63	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328865

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914585	Chloride	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328867

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914585	Sulfate	4.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P328908

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914587	Chloride	1.89	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P328912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914587	Sulfate	1.10	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P328956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914561	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P328894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914559	Kjeldahl Nitrogen	0.744	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P328982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914561	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914559	Total-P	5.23	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P328929

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914589	Total-P	0.897	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P328789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914562	O-Phosphate-P	1.82	Spike	P	0 - 20

Reference Method: EPA 8270D
 Batch ID: P328810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915140	Aldrin	10.1	Spike	P	0 - 30
1915140	Alpha-BHC	8.41	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P328810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915140	Alpha-Chlordane	5.67	Spike	P	0 - 30
1915140	Beta-BHC	8.34	Spike	P	0 - 30
1915140	Carbophenothion	44.3	Spike	F	0 - 30
1915140	Chlorothalonil	19.7	Spike	P	0 - 30
1915140	Cypermethrin	9.78	Spike	P	0 - 30
1915140	DDD-p,p'	3.59	Spike	P	0 - 30
1915140	DDE-p,p'	8.38	Spike	P	0 - 30
1915140	DDT-p,p'	7.74	Spike	P	0 - 30
1915140	Delta-BHC	1.40	Spike	P	0 - 30
1915140	Dicofol	38.1	Spike	F	0 - 30
1915140	Dieldrin	11.0	Spike	P	0 - 30
1915140	Endosulfan I	18.9	Spike	P	0 - 30
1915140	Endosulfan II	2.82	Spike	P	0 - 30
1915140	Endosulfan Sulfate	1.16	Spike	P	0 - 30
1915140	Endrin	4.60	Spike	P	0 - 30
1915140	Endrin Aldehyde	11.2	Spike	P	0 - 30
1915140	Endrin Ketone	5.30	Spike	P	0 - 30
1915140	Gamma-BHC	4.33	Spike	P	0 - 30
1915140	Gamma-Chlordane	4.90	Spike	P	0 - 30
1915140	Heptachlor	12.0	Spike	P	0 - 30
1915140	Heptachlor Epoxide	7.99	Spike	P	0 - 30
1915140	Methoxychlor	3.88	Spike	P	0 - 30
1915140	Mirex	5.71	Spike	P	0 - 30
1915140	Permethrin	3.18	Spike	P	0 - 30
1915140	Trifluralin	2.03	Spike	P	0 - 30
LFB	Aldrin	8.03	LCS	P	0 - 30
LFB	Alpha-BHC	7.11	LCS	P	0 - 30
LFB	Alpha-Chlordane	8.55	LCS	P	0 - 30
LFB	Beta-BHC	1.40	LCS	P	0 - 30
LFB	Carbophenothion	16.6	LCS	P	0 - 30
LFB	Chlorothalonil	4.63	LCS	P	0 - 30
LFB	Cypermethrin	0.258	LCS	P	0 - 30
LFB	DDD-p,p'	11.5	LCS	P	0 - 30
LFB	DDE-p,p'	10.9	LCS	P	0 - 30
LFB	DDT-p,p'	8.40	LCS	P	0 - 30
LFB	Delta-BHC	12.1	LCS	P	0 - 30
LFB	Dicofol	5.77	LCS	P	0 - 30
LFB	Dieldrin	5.75	LCS	P	0 - 30
LFB	Endosulfan I	9.65	LCS	P	0 - 30
LFB	Endosulfan II	16.3	LCS	P	0 - 30
LFB	Endosulfan Sulfate	9.96	LCS	P	0 - 30
LFB	Endrin	0.388	LCS	P	0 - 30
LFB	Endrin Aldehyde	12.6	LCS	P	0 - 30
LFB	Endrin Ketone	7.82	LCS	P	0 - 30
LFB	Gamma-BHC	1.50	LCS	P	0 - 30
LFB	Gamma-Chlordane	10.2	LCS	P	0 - 30
LFB	Heptachlor	8.52	LCS	P	0 - 30
LFB	Heptachlor Epoxide	8.02	LCS	P	0 - 30
LFB	Methoxychlor	8.47	LCS	P	0 - 30
LFB	Mirex	6.76	LCS	P	0 - 30
LFB	Permethrin	7.85	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P328810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Trifluralin	6.69	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P329016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914535	Acetochlor	14.0	Spike	P	0 - 30
1914535	Alachlor	20.9	Spike	P	0 - 30
1914535	Ametryn	20.0	Spike	P	0 - 30
1914535	Atrazine	3.68	Spike	P	0 - 30
1914535	Atrazine Desethyl	24.9	Spike	P	0 - 30
1914535	Azinphos Methyl	19.2	Spike	P	0 - 30
1914535	Bromacil	18.0	Spike	P	0 - 30
1914535	Butylate	23.9	Spike	P	0 - 30
1914535	Chlorpyrifos Ethyl	11.0	Spike	P	0 - 30
1914535	Chlorpyrifos Methyl	24.3	Spike	P	0 - 30
1914535	Cyanazine	75.6	Spike	F	0 - 30
1914535	Demeton	87.3	Spike	F	0 - 30
1914535	Diazinon	35.9	Spike	F	0 - 30
1914535	Disulfoton	35.7	Spike	F	0 - 30
1914535	EPTC	24.1	Spike	P	0 - 30
1914535	Ethion	8.35	Spike	P	0 - 30
1914535	Ethoprop	43.8	Spike	F	0 - 30
1914535	Fenamiphos	3.57	Spike	P	0 - 30
1914535	Fipronil	28.0	Spike	P	0 - 30
1914535	Fipronil Sulfide	16.0	Spike	P	0 - 30
1914535	Fipronil Sulfone	28.4	Spike	P	0 - 30
1914535	Fonofos	43.6	Spike	F	0 - 30
1914535	Hexazinone	8.62	Spike	P	0 - 30
1914535	Malathion	3.86	Spike	P	0 - 30
1914535	Metalaxyl	15.9	Spike	P	0 - 30
1914535	Metolachlor	15.7	Spike	P	0 - 30
1914535	Metribuzin	34.3	Spike	F	0 - 30
1914535	Mevinphos	40.6	Spike	F	0 - 30
1914535	Molinate	57.9	Spike	F	0 - 30
1914535	Norflurazon	26.4	Spike	P	0 - 30
1914535	Parathion Ethyl	4.96	Spike	P	0 - 30
1914535	Parathion Methyl	13.9	Spike	P	0 - 30
1914535	Pendimethalin	7.46	Spike	P	0 - 30
1914535	Phorate	60.8	Spike	F	0 - 30
1914535	Prometon	14.4	Spike	P	0 - 30
1914535	Prometryn	4.53	Spike	P	0 - 30
1914535	Simazine	16.1	Spike	P	0 - 30
1914535	Terbufos	52.5	Spike	F	0 - 30
1914535	Terbutylazine	4.14	Spike	P	0 - 30
LFB	Acetochlor	4.17	LCS	P	0 - 30
LFB	Alachlor	3.95	LCS	P	0 - 30
LFB	Ametryn	3.20	LCS	P	0 - 30
LFB	Atrazine	4.77	LCS	P	0 - 30
LFB	Atrazine Desethyl	4.76	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P329016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Azinphos Methyl	5.65	LCS	P	0 - 30
LFB	Bromacil	9.08	LCS	P	0 - 30
LFB	Butylate	19.9	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	9.81	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	7.64	LCS	P	0 - 30
LFB	Cyanazine	1.84	LCS	P	0 - 30
LFB	Demeton	13.8	LCS	P	0 - 30
LFB	Diazinon	5.18	LCS	P	0 - 30
LFB	Disulfoton	0.757	LCS	P	0 - 30
LFB	EPTC	14.4	LCS	P	0 - 30
LFB	Ethion	5.70	LCS	P	0 - 30
LFB	Ethoprop	9.54	LCS	P	0 - 30
LFB	Fenamiphos	12.1	LCS	P	0 - 30
LFB	Fipronil	12.1	LCS	P	0 - 30
LFB	Fipronil Sulfide	19.9	LCS	P	0 - 30
LFB	Fipronil Sulfone	14.6	LCS	P	0 - 30
LFB	Fonofos	8.03	LCS	P	0 - 30
LFB	Hexazinone	2.98	LCS	P	0 - 30
LFB	Malathion	5.22	LCS	P	0 - 30
LFB	Metalaxyl	1.43	LCS	P	0 - 30
LFB	Metolachlor	3.67	LCS	P	0 - 30
LFB	Metribuzin	7.33	LCS	P	0 - 30
LFB	Mevinphos	13.6	LCS	P	0 - 30
LFB	Molinate	20.1	LCS	P	0 - 30
LFB	Norflurazon	9.11	LCS	P	0 - 30
LFB	Parathion Ethyl	0.198	LCS	P	0 - 30
LFB	Parathion Methyl	4.19	LCS	P	0 - 30
LFB	Pendimethalin	3.43	LCS	P	0 - 30
LFB	Phorate	16.6	LCS	P	0 - 30
LFB	Prometon	0.530	LCS	P	0 - 30
LFB	Prometryn	1.82	LCS	P	0 - 30
LFB	Simazine	12.7	LCS	P	0 - 30
LFB	Terbufos	7.69	LCS	P	0 - 30
LFB	Terbuthylazine	6.67	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P328810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915146	Chlordane	5.31	Spike	P	0 - 30
1915146	Toxaphene	15.0	Spike	P	0 - 30
LFB	Chlordane	5.95	LCS	P	0 - 30
LFB	Toxaphene	11.0	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P328648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1913901	Glyphosate	4.42	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P328783

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914533	Pyraclostrobin	12.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P328804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914586	Color (true)	1.43	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P328972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915059	Total Alkalinity	0.209	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914586	TDS	6.84	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P329282

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914587	TDS	7.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P329084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914940	Fluoride	0.477	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P329126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914491	Organic Carbon	0.283	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P328838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914598	2,4-D	10.7	Spike	P	0 - 30
1914598	Acetaminophen	2.96	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: USGS O-2060-01
Batch ID: P328838

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1914598	Bentazon	7.20	Spike	P	0 - 30
1914598	Carbamazepine	5.31	Spike	P	0 - 30
1914598	Diuron	4.57	Spike	P	0 - 30
1914598	Fenuron	0.846	Spike	P	0 - 30
1914598	Fluridone	0.0320	Spike	P	0 - 30
1914598	Imidacloprid	0.348	Spike	P	0 - 30
1914598	Linuron	0.0707	Spike	P	0 - 30
1914598	MCPP	5.08	Spike	P	0 - 30
1914598	Primidone	11.7	Spike	P	0 - 30
1914598	Triclopyr	3.23	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: 1914598
Field Sample ID: G1NE0038 07182017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	136	P	30 - 160
EPA 8321B	Carbamazepine-d10	116	P	30 - 160
EPA 8321B	Diuron-d6	78.0	P	30 - 160
EPA 8321B	Diuron-d6	79.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.1	P	40 - 160
EPA 8321B	Primidone-d5	114	P	30 - 160
USGS O-2060-01	2,4-D-d3	144	P	40 - 160
USGS O-2060-01	Acetaminophen-d4	136	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	116	P	30 - 160
USGS O-2060-01	Diuron-d6	78.0	P	30 - 160
USGS O-2060-01	Diuron-d6	79.6	P	30 - 160
USGS O-2060-01	Primidone-d5	114	P	30 - 160

Lab Sample ID: 1914599
Field Sample ID: G1NE0038 07182017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	61.0	P	39 - 118
EPA 8270D	Tetrachloro-m-xylene	42.0	P	32 - 103
EPA 8276	Decachlorobiphenyl	52.1	P	31 - 100

Lab Sample ID: 1914600
Field Sample ID: G1NE0038 07182017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	60.4	P	53 - 135
EPA 8270D	Simazine-d10	101	P	71 - 126

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A77800

Included Lab Sample IDs: 1914582, 1914585, 1914586, 1914587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Chloride	102	102	P/P	90 - 110
Chloride	104	102	P/P	90 - 110
Sulfate	102	104	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A77817

Included Lab Sample IDs: 1914584, 1914591, 1914592, 1914593

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	101	P/P	90 - 110
O-Phosphate-P	102	101	P/P	90 - 110
O-Phosphate-P	99.1	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A77821

Included Lab Sample IDs: 1914582, 1914585, 1914586, 1914587

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

Reference Method: SM 2120 B

Run ID: A77822

Included Lab Sample IDs: 1914582, 1914585, 1914586, 1914587

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	85 - 115
Color (true)	104	102	P/P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A77874

Included Lab Sample IDs: 1914583, 1914588, 1914589, 1914590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	97.9	P/P	90 - 110
Ammonia-N	99.3	99.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77875

Included Lab Sample IDs: 1914601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	102	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	100	101	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	96.3	96.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A77875

Included Lab Sample IDs: 1914601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	102	101	P/P	90 - 110
Silver	97.6	98.0	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A77884

Included Lab Sample IDs: 1914582, 1914585, 1914586, 1914587

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A77893

Included Lab Sample IDs: 1914583, 1914588, 1914589, 1914590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.3	P/P	90 - 110
Total-P	100	99.3	P/P	90 - 110
Total-P	98.3	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A77896

Included Lab Sample IDs: 1914583, 1914588, 1914589, 1914590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A77897

Included Lab Sample IDs: 1914583, 1914588, 1914589, 1914590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A77914

Included Lab Sample IDs: 1914598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	113	83.5	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A77918

Included Lab Sample IDs: 1914601

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	98.2	P/P	90 - 110
Iron	103	99.5	P/P	90 - 110
Magnesium	102	98.8	P/P	90 - 110
Potassium	96.8	93.9	P/P	90 - 110
Sodium	99.5	96.7	P/P	90 - 110
Zinc	100	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A77931

Included Lab Sample IDs: 1914598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	102	81.0	P/P	70 - 160

Reference Method: SM 4500 F-C-97

Run ID: A77941

Included Lab Sample IDs: 1914582, 1914585, 1914586, 1914587

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

Reference Method: SM 5310 B-00

Run ID: A77952

Included Lab Sample IDs: 1914583, 1914588, 1914589, 1914590

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	98.5	P/P	90 - 110
Organic Carbon	98.5	98.3	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A77976

Included Lab Sample IDs: 1914599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.7		P	80 - 120
Toxaphene	102		P	80 - 120

Reference Method: EPA 8270D

Run ID: A78023

Included Lab Sample IDs: 1914599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	96.1		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	93.5		P	80 - 120
Beta-BHC	107		P	80 - 120
Carbophenothion	92.5		P	80 - 120
Chlorothalonil	74.1*		F	80 - 120
Cypermethrin	91.1		P	80 - 120
DDD-p,p'	97.2		P	80 - 120
DDE-p,p'	98.9		P	80 - 120
DDT-p,p'	107		P	80 - 120
Delta-BHC	99.4		P	80 - 120
Dicofol	163*		F	80 - 120
Dieldrin	97.4		P	80 - 120
Endosulfan I	88.2		P	80 - 120
Endosulfan II	86.1		P	80 - 120
Endosulfan Sulfate	96.6		P	80 - 120
Endrin	92.9		P	80 - 120
Endrin Aldehyde	94.0		P	80 - 120
Endrin Ketone	99.4		P	80 - 120
Gamma-BHC	101		P	80 - 120
Gamma-Chlordane	99.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A78023

Included Lab Sample IDs: 1914599

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Heptachlor	94.7		P	80 - 120
Heptachlor Epoxide	97.7		P	80 - 120
Methoxychlor	104		P	80 - 120
Mirex	100		P	80 - 120
Permethrin	94.3		P	80 - 120
Trifluralin	89.4		P	80 - 120

Reference Method: USGS O-2060-01

Run ID: A78113

Included Lab Sample IDs: 1914598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	112	110	P/P	60 - 150
Bentazon	117	129	P/P	50 - 150
Carbamazepine	120	116	P/P	60 - 150
Diuron	117	113	P/P	60 - 150
Fenuron	113	99.6	P/P	60 - 150
Fluridone	113	107	P/P	60 - 160
Imidacloprid	106	109	P/P	60 - 150
Linuron	104	118	P/P	60 - 150
MCPP	97.1	99.0	P/P	50 - 150
Primidone	105	94.2	P/P	60 - 150
Triclopyr	78.5	86.9	P/P	50 - 150

Reference Method: USGS O-2060-01

Run ID: A78183

Included Lab Sample IDs: 1914598

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	74.4	102	P/P	50 - 150

Reference Method: EPA 8270D

Run ID: A78232

Included Lab Sample IDs: 1914600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	95.7		P	80 - 120
Alachlor	99.9		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine	94.5		P	80 - 120
Atrazine Desethyl	94.3		P	80 - 120
Azinphos Methyl	101		P	80 - 120
Bromacil	100		P	80 - 120
Butylate	96.5		P	80 - 120
Chlorpyrifos Ethyl	94.7		P	80 - 120
Chlorpyrifos Methyl	93.8		P	80 - 120
Cyanazine	83.5		P	80 - 120
Demeton	97.5		P	80 - 120
Diazinon	101		P	80 - 120
Disulfoton	96.7		P	80 - 120
EPTC	98.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A78232
Included Lab Sample IDs: 1914600

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ethion	91.4		P	80 - 120
Ethoprop	96.4		P	80 - 120
Fenamiphos	96.6		P	80 - 120
Fipronil	93.9		P	80 - 120
Fipronil Sulfide	91.4		P	80 - 120
Fipronil Sulfone	91.9		P	80 - 120
Fonofos	102		P	80 - 120
Hexazinone	97.8		P	80 - 120
Malathion	95.6		P	80 - 120
Metaxyl	96.3		P	80 - 120
Metolachlor	99.9		P	80 - 120
Metribuzin	85.7		P	80 - 120
Mevinphos	97.5		P	80 - 120
Molinate	97.5		P	80 - 120
Norflurazon	93.1		P	80 - 120
Parathion Ethyl	94.2		P	80 - 120
Parathion Methyl	91.4		P	80 - 120
Pendimethalin	88.9		P	80 - 120
Phorate	98.3		P	80 - 120
Prometon	96.0		P	80 - 120
Prometryn	96.4		P	80 - 120
Simazine	95.3		P	80 - 120
Terbufos	91.4		P	80 - 120
Terbutylazine	99.6		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				1.92	
EPA 200.7 Rev. 4.4	Calcium	110	112 106			1.44
	Iron	111	113 113 111			2.46
	Magnesium	109	115 106			2.47
	Potassium	101	102 98.5			0.903
	Sodium	105	108 103			1.07
	Zinc	104	108 106 105			0.955
EPA 200.8 Rev. 5.4	Arsenic	101	101 104 105			0.894
	Cadmium	99.9	102 102 105			2.60
	Chromium	98.1	100 97.7 98.8			1.16
	Copper	98.3	98.9 100 101			0.664
	Lead	95.7	96.2 98.0 98.9			0.873
	Nickel	99.6	99.6 101 102			1.55
	Silver	99.2	97.8 99.0 101			1.63
EPA 300.0 Rev. 2.1	Chloride	98.4	96.9 99.7		1.71	
	Chloride	101	97.0 101		1.89	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 300.0 Rev. 2.1	Sulfate	99.4		98.6	97.1		4.59	
	Sulfate	100		95.8	101		1.10	
EPA 350.1 Rev. 2.0	Ammonia-N	102		99.3	101			1.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107		109	108			0.744
EPA 353.2 Rev. 2.0	NO2NO3-N	101		102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	98.2		104	98.2			5.23
	Total-P	98.1		99.4	98.1			0.897
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		98.2	100			1.82
EPA 8270D	Acetochlor	88.8	92.5	82.4	94.7	4.17		14.0
	Alachlor	88.5	92.0	78.9	97.3	3.95		20.9
	Aldrin	55.9	51.6	63.6	57.5	8.03		10.1
	Alpha-BHC	90.7	84.5	89.3	82.0	7.11		8.41
	Alpha-Chlordane	91.1	83.6	86.5	81.7	8.55		5.67
	Ametryn	83.4	80.8	92.4	113	3.20		20.0
	Atrazine	96.9	92.4			4.77		3.68
	Atrazine Desethyl	80.2	84.1	63.9	89.8	4.76		24.9
	Azinphos Methyl	119	126	113	136	5.65		19.2
	Beta-BHC	106	105	97.8	106	1.40		8.34
	Bromacil	84.1	92.1	65.9	82.3	9.08		18.0
	Butylate	42.0	51.3	33.6	42.7	19.9		23.9
	Carbophenothion	102	86.3	102	64.9	16.6		44.3
	Chlorothalonil	40.9	42.8	85.0	104	4.63		19.7
	Chlorpyrifos Ethyl	93.1	103	83.6	93.3	9.81		11.0
	Chlorpyrifos Methyl	89.4	96.5	72.1	92.1	7.64		24.3
	Cyanazine	121	123	67.3	149	1.84		75.6
	Cypermethrin	85.1	84.9	87.3	96.3	0.258		9.78
	DDD-p,p'	103	91.9	96.1	92.7	11.5		3.59
	DDE-p,p'	95.5	85.6	91.0	83.6	10.9		8.38
	DDT-p,p'	95.0	87.3	90.6	83.9	8.40		7.74
	Delta-BHC	113	100	114	113	12.1		1.40
	Demeton	72.2	82.9	53.1	135	13.8		87.3
	Diazinon	87.3	92.0	69.2	99.4	5.18		35.9
	Dicofol	65.3	69.1	42.5	28.9	5.77		38.1
	Dieldrin	96.8	91.4	91.5	82.0	5.75		11.0
	Disulfoton	79.4	80.0	64.8	92.9	0.757		35.7
	Endosulfan I	94.5	85.8	100	82.7	9.65		18.9
	Endosulfan II	99.0	84.1	88.0	90.5	16.3		2.82
	Endosulfan Sulfate	94.9	85.9	86.8	87.8	9.96		1.16
	Endrin	101	102	89.3	85.3	0.388		4.60
	Endrin Aldehyde	102	89.7	88.3	79.0	12.6		11.2
	Endrin Ketone	97.7	90.3	86.4	91.1	7.82		5.30
	EPTC	44.2	51.1	28.4	36.2	14.4		24.1
	Ethion	96.9	103	95.2	87.6	5.70		8.35
	Ethoprop	67.5	74.2	49.9	77.8	9.54		43.8
	Fenamiphos	90.2	102	89.4	92.7	12.1		3.57
	Fipronil	78.1	88.1			12.1		28.0
	Fipronil Sulfide	76.3	93.2			19.9		16.0
	Fipronil Sulfone	80.0	92.6			14.6		28.4
	Fonofos	80.4	87.2	53.0	82.5	8.03		43.6
	Gamma-BHC	96.5	97.9	97.6	93.5	1.50		4.33
	Gamma-Chlordane	95.1	85.9	87.7	83.5	10.2		4.90
	Heptachlor	79.5	73.0	73.1	64.9	8.52		12.0
	Heptachlor Epoxide	94.6	87.3	92.5	85.4	8.02		7.99
	Hexazinone	86.3	88.9	76.9	83.8	2.98		8.62

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Malathion	102	107	97.1	101	5.22	3.86
	Metalaxyl	85.8	87.0	78.3	91.8	1.43	15.9
	Methoxychlor	107	98.6	94.0	90.4	8.47	3.88
	Metolachlor	89.5	92.8	82.9	97.6	3.67	15.7
	Metribuzin	112	120	114	162	7.33	34.3
	Mevinphos	67.9	77.9	47.0	71.0	13.6	40.6
	Mirex	81.9	76.6	74.7	70.5	6.76	5.71
	Molinate	52.1	63.7	32.9	59.7	20.1	57.9
	Norflurazon	84.9	93.0	65.5	85.4	9.11	26.4
	Parathion Ethyl	85.2	85.4	77.9	81.9	0.198	4.96
	Parathion Methyl	93.0	97.0	80.6	92.6	4.19	13.9
	Pendimethalin	86.7	83.7	77.6	83.6	3.43	7.46
	Permethrin	93.5	86.4	87.8	90.7	7.85	3.18
	Phorate	80.3	67.9	45.0	84.3	16.6	60.8
	Prometon	90.5	90.0	77.6	91.8	0.530	14.4
	Prometryn	89.2	90.8	84.7	81.0	1.82	4.53
	Simazine	102	89.6	96.5	113	12.7	16.1
	Terbufos	74.7	80.7	50.0	85.6	7.69	52.5
	Terbuthylazine	91.9	98.2	82.9	86.4	6.67	4.14
	Trifluralin	149	139	161	165	6.69	2.03
EPA 8276	Chlordane	87.5	82.5	97.4	103	5.95	5.31
	Toxaphene	98.6	88.3	106	123	11.0	15.0
EPA 8321B	Glyphosate	123		114	119		4.42
	Pyraclostrobin	102		89.4	79.2		12.1
SM 2120 B	Color (true)					1.43	
SM 2320 B-97	Total Alkalinity	103				0.209	
SM 2540 C-97	TDS					6.84	
	TDS					7.02	
SM 4500 F-C-97	Fluoride	96.7		99.4	100		0.477
SM 5310 B-00	Organic Carbon	97.6		96.6	96.2		0.283
USGS O-2060-01	2,4-D	107					10.7
	Acetaminophen	99.9		128	132		2.96
	Bentazon	103		56.7	61.2		7.20
	Carbamazepine	120		124	118		5.31
	Diuron	122		84.6	90.3		4.57
	Fenuron	111		92.6	91.8		0.846
	Fluridone	113		52.7	52.7		0.0320
	Imidacloprid	119		178	178		0.348
	Linuron	112		84.8	84.8		0.0707
	MCPP	105		126	120		5.08
	Primidone	97.7		115	102		11.7
	Triclopyr	94.2		100	103		3.23

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1914582, 1914585, 1914586, 1914587
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1914601
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1914601
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1914582, 1914585, 1914586, 1914587

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1914582, 1914585, 1914586, 1914587
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1914583, 1914588, 1914589, 1914590
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1914583, 1914588, 1914589, 1914590
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1914583, 1914588, 1914589, 1914590
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1914583, 1914588, 1914589, 1914590
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1914584, 1914591, 1914592, 1914593
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1914599
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1914600
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1914599
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1914598
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1914598
SM 2120 B / E31780	True Color measured at 450 nm	1914582, 1914585, 1914586, 1914587
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1914582, 1914585, 1914586, 1914587
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1914582, 1914585, 1914586, 1914587
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1914582, 1914585, 1914586, 1914587
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1914582, 1914585, 1914586, 1914587
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1914583, 1914588, 1914589, 1914590
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1914598
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1914598

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	07/19/2017			07/19/2017 16:03	DeAsia Armster	1914582, 1914585, 1914586, 1914587
EPA 200.7 Rev. 4.4	07/19/2017	07/20/2017	Elliott D. Healy	07/24/2017	Betina Topolski	1914601
EPA 200.8 Rev. 5.4	07/19/2017	07/20/2017	Elliott D. Healy	07/21/2017	Nadine Brooks	1914601
EPA 300.0 Rev. 2.1	07/19/2017			07/19/2017	Julia Storbeck	1914585
	07/19/2017			07/20/2017	Julia Storbeck	1914582, 1914587
	07/19/2017			07/21/2017	Julia Storbeck	1914586
EPA 350.1 Rev. 2.0	07/19/2017			07/21/2017	Sofia Elnemr	1914583, 1914588, 1914589, 1914590
EPA 351.2 Rev. 2.0	07/19/2017	07/21/2017	Adrian Shelby	07/24/2017	Joseph Suarez	1914583, 1914588, 1914589, 1914590
EPA 353.2 Rev. 2.0	07/19/2017			07/24/2017	Beverly Y. Sanders	1914583, 1914588, 1914589, 1914590
EPA 365.1 Rev. 2.0	07/19/2017	07/21/2017	Vijayalakshmi Reddy	07/24/2017	Lipi Saha	1914583, 1914588, 1914589, 1914590
EPA 365.1 Rev. 2.0 dissolved	07/19/2017			07/19/2017 14:14	Lipi Saha	1914593
	07/19/2017			07/19/2017 14:28	Lipi Saha	1914592
	07/19/2017			07/19/2017 14:51	Lipi Saha	1914584
	07/19/2017			07/19/2017 14:56	Lipi Saha	1914591
EPA 8270D	07/19/2017	07/21/2017	Fe-Val Siddell	07/25/2017	Vandana T. Nagar	1914599
	07/19/2017	07/24/2017	John Kaba	08/01/2017	Irina Carbone	1914600
EPA 8276	07/19/2017	07/21/2017	Fe-Val Siddell	07/25/2017	John P. Burgos	1914599
EPA 8321B	07/19/2017	07/21/2017	Julie Michelle Frank	07/21/2017	Julie Michelle Frank	1914598
	07/19/2017	07/24/2017	Julie Michelle Frank	07/24/2017	Julie Michelle Frank	1914598
SM 2120 B	07/19/2017			07/19/2017 16:38	Tanya Welborn	1914585, 1914587
	07/19/2017			07/19/2017 16:46	Tanya Welborn	1914582
	07/19/2017			07/19/2017 16:48	Tanya Welborn	1914586
SM 2320 B-97	07/19/2017			07/22/2017	Dale L. Simmons	1914582, 1914585, 1914586, 1914587
SM 2540 C-97	07/19/2017			07/21/2017	Yijie Li	1914582, 1914585, 1914586, 1914587
SM 2540 D-97	07/19/2017			07/21/2017	Yijie Li	1914582, 1914585, 1914586, 1914587
SM 4500 F-C-97	07/19/2017			07/26/2017	Dale L. Simmons	1914582, 1914585, 1914586, 1914587
SM 5310 B-00	07/19/2017			07/25/2017	Ping Hua	1914583, 1914588, 1914589, 1914590
USGS O-2060-01	07/19/2017	07/21/2017	Hoor Shaik	07/29/2017	Juyoung Kim	1914598
	07/19/2017	07/21/2017	Hoor Shaik	08/04/2017	Juyoung Kim	1914598