

Chemical Analysis Report

CEN-DIST-2018-02-01-02

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

Event Description: **Apopka Beauclair Canal**
Request ID: **RQ-2018-01-15-29**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:

FL Dept. of Environmental Protection
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3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 27-FEB-2018 12:09



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 Starke @ Center (3002D)

Collection Date/Time: 01/31/2018 09:40

Field ID: G2CE0094

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963695	EPA 180.1 Rev. 2.0	Turbidity	7.8		NTU	P339172	
	EPA 300.0 Rev. 2.1	Chloride	27		mg Cl/L	P339697	
		Sulfate	20		mg SO4/L	P339702	
	SM 2120 B	Color (true)	17		PCU	P339194	
	SM 2320 B-97	Total Alkalinity	58		mg CaCO3/L	P339515	
	SM 2540 C-97	TDS	149		mg/L	P339636	
	SM 2540 D-97	TSS	9	I	mg/L	P339534	
	SM 4500 F-C-97	Fluoride	0.14		mg F/L	P340385	
1963697	EPA 350.1 Rev. 2.0	Ammonia-N	0.068		mg N/L	P339370	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P339224	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P339332	
	EPA 365.1 Rev. 2.0	Total-P	0.036		mg P/L	P339339	
	SM 5310 B-00	Organic Carbon	9.1		mg C/L	P339521	
1963699	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P339203	

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: Apopka Beauclair Canal @ 200m S of Lock (2835A1)

Collection Date/Time: 01/31/2018 10:40

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963696	EPA 180.1 Rev. 2.0	Turbidity	9.4	A	NTU	P339173	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P339697	
		Sulfate	11		mg SO4/L	P339702	
	SM 2120 B	Color (true)	51		PCU	P339194	
	SM 2320 B-97	Total Alkalinity	133		mg CaCO3/L	P339515	
	SM 2540 C-97	TDS	264	A	mg/L	P339636	
	SM 2540 D-97	TSS	22		mg/L	P339534	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P340385	
1963698	EPA 350.1 Rev. 2.0	Ammonia-N	0.23		mg N/L	P339677	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P339224	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P339332	
	EPA 365.1 Rev. 2.0	Total-P	0.098		mg P/L	P339339	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P339521	
1963700	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P339203	
1963713	EPA 200.7 Rev. 4.4	Calcium	42.4		mg/L	P339319	
		Iron	67	I	ug/L	P339319	
		Magnesium	15.1		mg/L	P340039	
		Potassium	10.7		mg/L	P339319	
		Sodium	20.0		mg/L	P339319	
		Zinc	5.0	U	ug/L	P339319	
	EPA 200.8 Rev. 5.4	Arsenic	3.07		ug/L	P339319	
		Cadmium	0.020	U	ug/L	P339319	

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963713	EPA 200.8 Rev. 5.4	Chromium	0.40	U	ug/L	P339319	
		Copper	0.37	I	ug/L	P339319	
		Lead	0.20		ug/L	P339319	
		Nickel	0.20	I	ug/L	P339319	
		Silver	0.010	U	ug/L	P339319	

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: Apopka Beauclair Canal @ 200m S of Lock (2835A1)

Collection Date/Time: 01/31/2018 10:40

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963708	EPA 8321B	Glyphosate**	0.10	U	ug/L	P339137	
		2,4-D	0.014		ug/L	P339135	
		AMPA**	0.10	U	ug/L	P339137	
		Sucralose**	0.39		ug/L	P339296	
		Bentazon	0.0013	I	ug/L	P339135	MS
		MCP	0.0020	U	ug/L	P339135	MS
		Triclopyr**	0.0040	U	ug/L	P339135	
		Imidacloprid	0.0020	U	ug/L	P339135	MS
		Diuron	0.0020	U	ug/L	P339135	
		Pyraclostrobin**	0.0020	U	ug/L	P339135	
		Primidone**	0.0040	U	ug/L	P339135	
		Linuron	0.0040	U	ug/L	P339135	
		Acetaminophen**	0.0080	UJ	ug/L	P339135	SUR
		Fenuron	0.0080	U	ug/L	P339135	
		Carbamazepine**	4.0E-04	U	ug/L	P339135	
		Fluridone**	5.1E-04	I	ug/L	P339135	
		Aldicarb	0.020	U	ug/L	P339135	
		Aldicarb Sulfone	0.0020	U	ug/L	P339135	
		Aldicarb Sulfoxide	0.0020	U	ug/L	P339135	
		Carbaryl	0.0020	U	ug/L	P339135	
1963709		Carbofuran	0.0020	U	ug/L	P339135	
		3-Hydroxycarbofuran	0.0020	U	ug/L	P339135	
		Methiocarb	0.0020	U	ug/L	P339135	
		Methomyl	0.0020	U	ug/L	P339135	
		Oxamyl	0.0020	U	ug/L	P339135	
		Propoxur	0.0020	U	ug/L	P339135	
		Aldrin	4.2	U	ng/L	P339743	
		Alpha-BHC	2.1	U	ng/L	P339743	
		Beta-BHC	4.2	U	ng/L	P339743	
		Delta-BHC	4.2	U	ng/L	P339743	
1963711	EPA 8270D	Gamma-BHC	4.2	U	ng/L	P339743	
		Carbophenothion	4.2	U	ng/L	P339743	
		Chlorothalonil	2.1	UJ	ng/L	P339743	MS, RPD

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963711	EPA 8270D	Cypermethrin	21	U	ng/L	P339743	
		DDD-p,p'	3.2	U	ng/L	P339743	
		DDE-p,p'	3.2	U	ng/L	P339743	
		DDT-p,p'	3.2	U	ng/L	P339743	
		Dieldrin	4.2	U	ng/L	P339743	
		Endosulfan I	4.2	U	ng/L	P339743	
		Endosulfan II	4.2	U	ng/L	P339743	MS
		Endosulfan Sulfate	2.1	U	ng/L	P339743	
		Endrin	2.1	U	ng/L	P339743	
		Endrin Aldehyde	2.1	U	ng/L	P339743	
		Heptachlor	1.6	U	ng/L	P339743	
		Heptachlor Epoxide	2.1	U	ng/L	P339743	
		Methoxychlor	4.2	U	ng/L	P339743	
		Mirex	2.1	U	ng/L	P339743	
		Permethrin	11	U	ng/L	P339743	
		Trifluralin	1.1	U	ng/L	P339743	
		Alpha-Chlordane	1.1	U	ng/L	P339743	
		Gamma-Chlordane	1.1	U	ng/L	P339743	
		Endrin Ketone	2.1	U	ng/L	P339743	
		Dicofol	32	UJ	ng/L	P339743	RPD
		Chlordane**	2.6	U	ng/L	P339743	
		Toxaphene**	13	U	ng/L	P339743	
1963712	EPA 8270D	Alachlor	0.24	U	ng/L	P339294	
		Ametryn	0.31	UJ	ng/L	P339294	LCS, MS
		Atrazine	6.8		ng/L	P339294	
		Atrazine Desethyl	1.4	U	ng/L	P339294	MS, RPD
		Azinphos Methyl	2.2	U	ng/L	P339294	
		Bromacil	0.48	U	ng/L	P339294	
		Butylate	0.38	U	ng/L	P339294	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P339294	MS
		Chlorpyrifos Methyl	0.096	U	ng/L	P339294	MS
		Demeton	1.9	U	ng/L	P339294	
		Diazinon	0.12	U	ng/L	P339294	
		Disulfoton	0.48	U	ng/L	P339294	
		EPTC	1.2	UJ	ng/L	P339294	LCS, RPD
		Ethion	0.14	U	ng/L	P339294	
		Ethoprop	0.096	U	ng/L	P339294	
		Fenamiphos	0.24	U	ng/L	P339294	
		Fipronil	0.24	U	ng/L	P339294	
		Fipronil Sulfide	0.14	U	ng/L	P339294	
		Fipronil Sulfone	0.14	U	ng/L	P339294	
		Hexazinone	0.48	U	ng/L	P339294	
		Malathion	0.34	U	ng/L	P339294	MS
		Metribuzin	0.19	U	ng/L	P339294	
		Mevinphos	0.48	U	ng/L	P339294	

Field ID: G1CE0025

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1963712	EPA 8270D	Molinate	0.29	U	ng/L	P339294	
		Norflurazon	0.48	U	ng/L	P339294	
		Pendimethalin	0.96	U	ng/L	P339294	
		Phorate	0.24	U	ng/L	P339294	
		Prometon	0.86	U	ng/L	P339294	
		Prometryn	0.19	U	ng/L	P339294	
		Simazine	0.48	U	ng/L	P339294	
		Terbufos	0.096	U	ng/L	P339294	
		Terbuthylazine	0.41	U	ng/L	P339294	
		Fonofos	0.19	U	ng/L	P339294	
		Metalaxyl	0.24	U	ng/L	P339294	
		Metolachlor	0.75	I	ng/L	P339294	
		Acetochlor	0.24	U	ng/L	P339294	
		Cyanazine	0.48	U	ng/L	P339294	
		Parathion Ethyl	0.24	U	ng/L	P339294	MS
		Parathion Methyl	0.24	UJ	ng/L	P339294	LCS, MS

Ref. Method and Comment:
 EPA 8321B: 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 not assessed due to high content of this parameter in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P339172

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P339173

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P339319

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P340039

Component	Result	Code	Units
Magnesium	0.040	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

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: P339697

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339702

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339370

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339677

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339224

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339332

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339339

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339203

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

Reference Method: EPA 8270D
Batch ID: P339294

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	0.25	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
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8270D
Batch ID: P339743

Component	Result	Code	Units
Aldrin	4.0	U	ng/L
Alpha-BHC	2.0	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P339743

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

Reference Method: EPA 8276
Batch ID: P339743

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

Reference Method: EPA 8321B
Batch ID: P339135

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
3-Hydroxycarbofuran	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Aldicarb	0.020	U	ug/L
Aldicarb Sulfone	0.0020	U	ug/L
Aldicarb Sulfoxide	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Carbaryl	0.0020	U	ug/L
Carbofuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P339135

Component	Result	Code	Units
MCPPP	0.0020	U	ug/L
Methiocarb	0.0020	U	ug/L
Methomyl	0.0020	U	ug/L
Oxamyl	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Propoxur	0.0020	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339137

Component	Result	Code	Units
AMPA	0.10	U	ug/L
Glyphosate	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P339296

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P339194

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P339515

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

Reference Method: SM 2540 C-97
Batch ID: P339636

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P339534

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P340385

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P339521

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	114		P	85 - 115
Iron	112		P	85 - 115
Potassium	110		P	85 - 115
Sodium	112		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Magnesium	99.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	105		P	85 - 115
Cadmium	105		P	85 - 115
Chromium	100		P	85 - 115
Copper	101		P	85 - 115
Lead	101		P	85 - 115
Nickel	104		P	85 - 115
Silver	88.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	95.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339702

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	94.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339370

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339677

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339224

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: P339332

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339339

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339203

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

Reference Method: EPA 8270D
Batch ID: P339294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	113	90.2	P/P	74 - 119
Alachlor	116	95.3	P/P	75 - 118
Ametryn	221	164	F/F	59 - 137
Atrazine	119	111	P/P	73 - 120
Atrazine Desethyl	102	93.3	P/P	19 - 129
Azinphos Methyl	152	141	P/P	65 - 181
Bromacil	89.2	76.7	P/P	43 - 123
Butylate	52.5	50.1	P/P	28 - 85.0
Chlorpyrifos Ethyl	111	110	P/P	55 - 112
Chlorpyrifos Methyl	122	107	P/P	35 - 124
Cyanazine	149	147	P/P	26 - 262
Demeton	103	105	P/P	43 - 122
Diazinon	108	79.7	P/P	72 - 120
Disulfoton	77.6	78.5	P/P	45 - 137
EPTC	33.3	17.8	P/F	28 - 95.0
Ethion	120	113	P/P	63 - 127
Ethoprop	106	94.4	P/P	63 - 109
Fenamiphos	107	106	P/P	66 - 136
Fipronil	103	92.9	P/P	63 - 126
Fipronil Sulfide	94.0	94.3	P/P	59 - 123
Fipronil Sulfone	109	108	P/P	56 - 122
Fonofos	95.5	95.6	P/P	64 - 114

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P339294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Hexazinone	117	113	P/P	49 - 144
Malathion	112	120	P/P	68 - 131
Metaxyl	110	87.8	P/P	57 - 126
Metolachlor	110	99.2	P/P	75 - 118
Metribuzin	167	131	P/P	46 - 169
Mevinphos	86.9	99.4	P/P	34 - 126
Molinate	53.5	46.2	P/P	37 - 101
Norflurazon	99.4	89.2	P/P	63 - 127
Parathion Ethyl	104	98.4	P/P	78 - 109
Parathion Methyl	132	107	F/P	74 - 123
Pendimethalin	107	94.3	P/P	51 - 130
Phorate	89.9	82.9	P/P	53 - 116
Prometon	95.8	102	P/P	66 - 124
Prometryn	91.4	73.1	P/P	66 - 124
Simazine	111	97.4	P/P	62 - 134
Terbufos	110	109	P/P	59 - 115
Terbutylazine	111	99.8	P/P	76 - 113

Reference Method: EPA 8270D

Batch ID: P339743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	77.9	84.7	P/P	24 - 89.0
Alpha-BHC	83.4	97.5	P/P	58 - 117
Alpha-Chlordane	92.2	106	P/P	56 - 115
Beta-BHC	94.4	124	P/P	55 - 137
Carbophenothion	101	121	P/P	37 - 145
Chlorothalonil	80.8	48.7	P/P	26 - 163
Cypermethrin	91.0	108	P/P	42 - 156
DDD-p,p'	99.2	125	P/P	59 - 129
DDE-p,p'	96.5	108	P/P	52 - 117
DDT-p,p'	86.3	106	P/P	48 - 128
Delta-BHC	104	129	P/P	59 - 158
Dicofol	76.7	39.7	P/P	19 - 124
Dieldrin	96.8	125	P/P	57 - 126
Endosulfan I	85.4	110	P/P	59 - 133
Endosulfan II	110	140	P/P	58 - 148
Endosulfan Sulfate	98.9	113	P/P	56 - 135
Endrin	98.9	120	P/P	50 - 140
Endrin Aldehyde	75.8	84.9	P/P	47 - 141
Endrin Ketone	96.4	121	P/P	63 - 123
Gamma-BHC	86.7	116	P/P	59 - 132
Gamma-Chlordane	92.2	107	P/P	55 - 112
Heptachlor	80.1	93.0	P/P	45 - 102
Heptachlor Epoxide	90.8	104	P/P	61 - 116
Methoxychlor	90.8	112	P/P	60 - 133
Mirex	81.8	92.8	P/P	40 - 98.0
Permethrin	90.5	108	P/P	45 - 131
Trifluralin	82.2	96.8	P/P	38 - 179

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8276

Batch ID: P339743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	88.6	89.6	P/P	47 - 125
Toxaphene	92.6	88.5	P/P	46 - 147

Reference Method: EPA 8321B

Batch ID: P339135

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	68.1		P	40 - 150
3-Hydroxycarbofuran	99.2		P	40 - 150
Acetaminophen	96.9		P	30 - 150
Aldicarb	81.8		P	30 - 150
Aldicarb Sulfone	107		P	40 - 150
Aldicarb Sulfoxide	94.4		P	40 - 150
Bentazon	82.7		P	30 - 150
Carbamazepine	95.0		P	40 - 150
Carbaryl	77.4		P	40 - 150
Carbofuran	82.7		P	40 - 150
Diuron	79.2		P	40 - 150
Fenuron	102		P	40 - 150
Fluridone	84.6		P	40 - 150
Imidacloprid	98.6		P	40 - 160
Linuron	89.4		P	40 - 150
MCPP	68.2		P	40 - 150
Methiocarb	83.5		P	40 - 150
Methomyl	97.8		P	40 - 150
Oxamyl	100		P	40 - 150
Primidone	107		P	40 - 150
Propoxur	82.8		P	40 - 150
Pyraclostrobin	93.9		P	40 - 150
Triclopyr	67.6		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P339137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	118		P	40 - 150
Glyphosate	121		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P339296

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

Reference Method: SM 2320 B-97

Batch ID: P339515

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.0		P	95 - 108

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P340385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P339521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963444	Calcium	107		P	80 - 120
1963444	Iron	113		P	80 - 120
1963444	Potassium	107		P	80 - 120
1963444	Sodium	105		P	80 - 120
1963444	Zinc	109		P	80 - 120
1963995	Calcium	114	112	P/P	80 - 120
1963995	Iron	115	111	P/P	80 - 120
1963995	Potassium	116	112	P/P	80 - 120
1963995	Sodium	112	108	P/P	80 - 120
1963995	Zinc	109	109	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963389	Magnesium	95.6		P	80 - 120
1963561	Magnesium	96.3	96.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963444	Arsenic	104		P	80 - 120
1963444	Cadmium	105		P	80 - 120
1963444	Chromium	103		P	80 - 120
1963444	Copper	97.5		P	80 - 120
1963444	Lead	102		P	80 - 120
1963444	Nickel	102		P	80 - 120
1963444	Silver	88.8		P	80 - 120
1963995	Arsenic	102	102	P/P	80 - 120
1963995	Cadmium	104	103	P/P	80 - 120
1963995	Chromium	101	100	P/P	80 - 120
1963995	Copper	99.5	100	P/P	80 - 120
1963995	Lead	101	100	P/P	80 - 120
1963995	Nickel	100	100	P/P	80 - 120
1963995	Silver	89.3	88.3	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963717	Chloride	96.2		P	90 - 110
1963747	Chloride	95.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339702

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963717	Sulfate	94.8		P	90 - 110
1963747	Sulfate	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339370

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963460	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963756	Ammonia-N	99.2	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963626	Kjeldahl Nitrogen	91.6	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P339332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963626	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P339339

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963697	Total-P	95.3	98.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P339203

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963627	O-Phosphate-P	96.3	97.3	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P339294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1962857	Acetochlor	118	106	P/P	67 - 125
1962857	Alachlor	113	109	P/P	69 - 123

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P339294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1962857	Ametryn	181	166	F/F	52 - 151
1962857	Atrazine Desethyl	81.7	141	P/F	10 - 129
1962857	Azinphos Methyl	150	162	P/P	48 - 200
1962857	Bromacil	107	109	P/P	46 - 130
1962857	Butylate	46.6	52.8	P/P	10 - 85.0
1962857	Chlorpyrifos Ethyl	120	103	F/P	54 - 115
1962857	Chlorpyrifos Methyl	137	102	F/P	44 - 117
1962857	Cyanazine	145	145	P/P	10 - 262
1962857	Demeton	84.7	105	P/P	24 - 145
1962857	Diazinon	93.5	92.4	P/P	66 - 129
1962857	Disulfoton	88.6	73.8	P/P	45 - 139
1962857	EPTC	47.6	46.7	P/P	10 - 86.0
1962857	Ethion	117	102	P/P	59 - 133
1962857	Ethoprop	112	113	P/P	54 - 116
1962857	Fenamiphos	109	101	P/P	55 - 140
1962857	Fipronil	113	110	P/P	37 - 142
1962857	Fipronil Sulfide	107	89.8	P/P	37 - 130
1962857	Fipronil Sulfone	93.3	52.7	P/P	18 - 143
1962857	Fonofos	103	88.9	P/P	55 - 118
1962857	Hexazinone	123	134	P/P	62 - 140
1962857	Malathion	145	128	F/P	64 - 132
1962857	Metalaxyl	113	102	P/P	55 - 129
1962857	Metolachlor	113	118	P/P	56 - 137
1962857	Metribuzin	185	170	P/P	16 - 218
1962857	Mevinphos	88.7	84.4	P/P	34 - 129
1962857	Molinate	55.1	62.5	P/P	16 - 99.0
1962857	Norflurazon	101	109	P/P	43 - 135
1962857	Parathion Ethyl	107	114	P/F	71 - 112
1962857	Parathion Methyl	134	119	F/P	65 - 127
1962857	Pendimethalin	109	111	P/P	35 - 159
1962857	Phorate	96.2	83.1	P/P	41 - 129
1962857	Prometon	94.8	103	P/P	56 - 140
1962857	Prometryn	112	101	P/P	65 - 130
1962857	Simazine	116	117	P/P	54 - 148
1962857	Terbufos	102	86.7	P/P	53 - 126
1962857	Terbutylazine	99.8	108	P/P	73 - 114

Reference Method: EPA 8270D

Batch ID: P339743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963880	Aldrin	76.6	83.4	P/P	26 - 96.0
1963880	Alpha-BHC	102	99.4	P/P	51 - 123
1963880	Alpha-Chlordane	99.8	95.6	P/P	45 - 120
1963880	Beta-BHC	123	103	P/P	43 - 146
1963880	Carbophenothion	124	106	P/P	26 - 179
1963880	Chlorothalonil	230	131	F/P	10 - 215
1963880	Cypermethrin	112	97.1	P/P	35 - 169
1963880	DDD-p,p'	110	106	P/P	49 - 131
1963880	DDE-p,p'	100	100	P/P	39 - 127
1963880	DDT-p,p'	98.1	99.3	P/P	49 - 120
1963880	Delta-BHC	139	125	P/P	49 - 187

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
 Batch ID: P339743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963880	Dicofol	84.0	101	P/P	10 - 129
1963880	Dieldrin	100	98.3	P/P	46 - 132
1963880	Endosulfan I	124	117	P/P	57 - 130
1963880	Endosulfan II	158	155	F/F	52 - 148
1963880	Endosulfan Sulfate	110	103	P/P	55 - 129
1963880	Endrin	102	94.4	P/P	45 - 133
1963880	Endrin Aldehyde	104	130	P/P	26 - 140
1963880	Endrin Ketone	119	107	P/P	60 - 125
1963880	Gamma-BHC	99.6	95.9	P/P	50 - 145
1963880	Gamma-Chlordane	99.2	93.8	P/P	44 - 118
1963880	Heptachlor	88.2	81.8	P/P	35 - 106
1963880	Heptachlor Epoxide	101	95.7	P/P	52 - 123
1963880	Methoxychlor	113	106	P/P	54 - 132
1963880	Mirex	83.3	80.9	P/P	36 - 107
1963880	Permethrin	104	101	P/P	47 - 135
1963880	Trifluralin	93.9	89.8	P/P	32 - 228

Reference Method: EPA 8276
 Batch ID: P339743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963585	Chlordane	56.7	56.9	P/P	41 - 134
1963585	Toxaphene	72.6	69.6	P/P	39 - 158

Reference Method: EPA 8321B
 Batch ID: P339135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963382	2,4-D	50.4	52.5	P/P	40 - 150
1963382	3-Hydroxycarbofuran	101	105	P/P	40 - 150
1963382	Acetaminophen	109	107	P/P	30 - 150
1963382	Aldicarb	73.9	63.7	P/P	30 - 150
1963382	Aldicarb Sulfone	116	116	P/P	40 - 150
1963382	Aldicarb Sulfoxide	96.2	91.3	P/P	40 - 150
1963382	Bentazon	29.7	30.0	F/F	30 - 150
1963382	Carbamazepine	86.3	83.9	P/P	40 - 150
1963382	Carbaryl	57.5	58.8	P/P	40 - 150
1963382	Carbofuran	68.0	63.9	P/P	40 - 150
1963382	Diuron	65.6	68.2	P/P	40 - 150
1963382	Fenuron	80.7	81.7	P/P	40 - 150
1963382	Fluridone	68.0	66.6	P/P	40 - 150
1963382	Imidacloprid	161	148	F/P	40 - 160
1963382	Linuron	78.2	77.6	P/P	40 - 150
1963382	MCPP	39.1	38.2	F/F	40 - 150
1963382	Methiocarb	75.9	74.2	P/P	40 - 150
1963382	Methomyl	81.0	81.2	P/P	40 - 150
1963382	Oxamyl	86.0	85.6	P/P	40 - 150
1963382	Primidone	109	104	P/P	40 - 150
1963382	Propoxur	62.9	60.8	P/P	40 - 150
1963382	Pyraclostrobin	76.5	75.3	P/P	40 - 150
1963382	Triclopyr	45.9	45.0	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P339137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963146	AMPA	98.6	96.6	P/P	40 - 150
1963146	Glyphosate	131	129	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P339296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963387	Sucralose	116	112	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P340385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963695	Fluoride	95.8	95.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1963629	Organic Carbon	94.2	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963610	Turbidity	0.686	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P339173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963696	Turbidity	0.847	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P339319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963995	Calcium	1.76	Spike	P	0 - 20
1963995	Iron	3.39	Spike	P	0 - 20
1963995	Potassium	2.70	Spike	P	0 - 20
1963995	Sodium	2.59	Spike	P	0 - 20
1963995	Zinc	0.451	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P340039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963561	Magnesium	0.333	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P339319

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963995	Arsenic	0.0948	Spike	P	0 - 20
1963995	Cadmium	1.11	Spike	P	0 - 20
1963995	Chromium	0.500	Spike	P	0 - 20
1963995	Copper	0.665	Spike	P	0 - 20
1963995	Lead	0.627	Spike	P	0 - 20
1963995	Nickel	0.244	Spike	P	0 - 20
1963995	Silver	1.09	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963717	Chloride	0.995	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P339702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963717	Sulfate	1.57	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339370

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963460	Ammonia-N	0.406	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963756	Ammonia-N	2.97	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P339224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963626	Kjeldahl Nitrogen	10.6	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P339332

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963626	NO2NO3-N	1.16	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P339339

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963697	Total-P	3.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P339203

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963627	O-Phosphate-P	0.729	Spike	P	0 - 20

Reference Method: EPA 8270D

Batch ID: P339294

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962857	Acetochlor	10.4	Spike	P	0 - 30
1962857	Alachlor	3.36	Spike	P	0 - 30
1962857	Ametryn	8.86	Spike	P	0 - 30
1962857	Atrazine	2.57	Spike	P	0 - 30
1962857	Atrazine Desethyl	37.5	Spike	F	0 - 30
1962857	Azinphos Methyl	7.62	Spike	P	0 - 30
1962857	Bromacil	2.41	Spike	P	0 - 30
1962857	Butylate	12.5	Spike	P	0 - 30
1962857	Chlorpyrifos Ethyl	15.2	Spike	P	0 - 30
1962857	Chlorpyrifos Methyl	29.2	Spike	P	0 - 30
1962857	Cyanazine	0.181	Spike	P	0 - 30
1962857	Demeton	21.6	Spike	P	0 - 30
1962857	Diazinon	1.27	Spike	P	0 - 30
1962857	Disulfoton	18.2	Spike	P	0 - 30
1962857	EPTC	1.92	Spike	P	0 - 30
1962857	Ethion	13.2	Spike	P	0 - 30
1962857	Ethoprop	1.11	Spike	P	0 - 30
1962857	Fenamiphos	7.62	Spike	P	0 - 30
1962857	Fipronil	2.73	Spike	P	0 - 30
1962857	Fipronil Sulfide	8.27	Spike	P	0 - 30
1962857	Fipronil Sulfone	10.2	Spike	P	0 - 30
1962857	Fonofos	15.1	Spike	P	0 - 30
1962857	Hexazinone	8.40	Spike	P	0 - 30
1962857	Malathion	12.7	Spike	P	0 - 30
1962857	Metalaxyl	10.6	Spike	P	0 - 30
1962857	Metolachlor	3.81	Spike	P	0 - 30
1962857	Metribuzin	8.22	Spike	P	0 - 30
1962857	Mevinphos	4.95	Spike	P	0 - 30
1962857	Molinate	12.5	Spike	P	0 - 30
1962857	Norflurazon	7.66	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P339294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962857	Parathion Ethyl	6.24	Spike	P	0 - 30
1962857	Parathion Methyl	11.8	Spike	P	0 - 30
1962857	Pendimethalin	1.77	Spike	P	0 - 30
1962857	Phorate	14.7	Spike	P	0 - 30
1962857	Prometon	8.10	Spike	P	0 - 30
1962857	Prometryn	10.4	Spike	P	0 - 30
1962857	Simazine	0.324	Spike	P	0 - 30
1962857	Terbufos	16.2	Spike	P	0 - 30
1962857	Terbuthylazine	7.98	Spike	P	0 - 30
LFB	Acetochlor	22.3	LCS	P	0 - 30
LFB	Alachlor	19.7	LCS	P	0 - 30
LFB	Ametryn	29.7	LCS	P	0 - 30
LFB	Atrazine	6.89	LCS	P	0 - 30
LFB	Atrazine Desethyl	9.23	LCS	P	0 - 30
LFB	Azinphos Methyl	7.92	LCS	P	0 - 30
LFB	Bromacil	15.1	LCS	P	0 - 30
LFB	Butylate	4.69	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.11	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	13.2	LCS	P	0 - 30
LFB	Cyanazine	1.36	LCS	P	0 - 30
LFB	Demeton	1.66	LCS	P	0 - 30
LFB	Diazinon	29.8	LCS	P	0 - 30
LFB	Disulfoton	1.12	LCS	P	0 - 30
LFB	EPTC	60.5	LCS	F	0 - 30
LFB	Ethion	5.83	LCS	P	0 - 30
LFB	Ethoprop	11.4	LCS	P	0 - 30
LFB	Fenamiphos	0.157	LCS	P	0 - 30
LFB	Fipronil	10.7	LCS	P	0 - 30
LFB	Fipronil Sulfide	0.377	LCS	P	0 - 30
LFB	Fipronil Sulfone	0.182	LCS	P	0 - 30
LFB	Fonofos	0.102	LCS	P	0 - 30
LFB	Hexazinone	3.48	LCS	P	0 - 30
LFB	Malathion	6.45	LCS	P	0 - 30
LFB	Metalaxyl	22.8	LCS	P	0 - 30
LFB	Metolachlor	10.4	LCS	P	0 - 30
LFB	Metribuzin	24.2	LCS	P	0 - 30
LFB	Mevinphos	13.5	LCS	P	0 - 30
LFB	Molinate	14.6	LCS	P	0 - 30
LFB	Norflurazon	10.7	LCS	P	0 - 30
LFB	Parathion Ethyl	5.68	LCS	P	0 - 30
LFB	Parathion Methyl	21.3	LCS	P	0 - 30
LFB	Pendimethalin	12.7	LCS	P	0 - 30
LFB	Phorate	8.05	LCS	P	0 - 30
LFB	Prometon	6.59	LCS	P	0 - 30
LFB	Prometryn	22.2	LCS	P	0 - 30
LFB	Simazine	12.9	LCS	P	0 - 30
LFB	Terbufos	0.665	LCS	P	0 - 30
LFB	Terbuthylazine	10.5	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P339743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963880	Aldrin	8.48	Spike	P	0 - 30
1963880	Alpha-BHC	2.77	Spike	P	0 - 30
1963880	Alpha-Chlordane	4.31	Spike	P	0 - 30
1963880	Beta-BHC	17.7	Spike	P	0 - 30
1963880	Carbophenothion	15.2	Spike	P	0 - 30
1963880	Chlorothalonil	54.9	Spike	F	0 - 30
1963880	Cypermethrin	13.8	Spike	P	0 - 30
1963880	DDD-p,p'	3.09	Spike	P	0 - 30
1963880	DDE-p,p'	0.143	Spike	P	0 - 30
1963880	DDT-p,p'	1.20	Spike	P	0 - 30
1963880	Delta-BHC	10.4	Spike	P	0 - 30
1963880	Dicofol	18.8	Spike	P	0 - 30
1963880	Dieldrin	2.14	Spike	P	0 - 30
1963880	Endosulfan I	5.95	Spike	P	0 - 30
1963880	Endosulfan II	1.82	Spike	P	0 - 30
1963880	Endosulfan Sulfate	7.19	Spike	P	0 - 30
1963880	Endrin	7.62	Spike	P	0 - 30
1963880	Endrin Aldehyde	22.3	Spike	P	0 - 30
1963880	Endrin Ketone	10.2	Spike	P	0 - 30
1963880	Gamma-BHC	3.75	Spike	P	0 - 30
1963880	Gamma-Chlordane	5.61	Spike	P	0 - 30
1963880	Heptachlor	7.56	Spike	P	0 - 30
1963880	Heptachlor Epoxide	5.05	Spike	P	0 - 30
1963880	Methoxychlor	6.94	Spike	P	0 - 30
1963880	Mirex	2.83	Spike	P	0 - 30
1963880	Permethrin	3.57	Spike	P	0 - 30
1963880	Trifluralin	4.45	Spike	P	0 - 30
LFB	Aldrin	8.36	LCS	P	0 - 30
LFB	Alpha-BHC	15.6	LCS	P	0 - 30
LFB	Alpha-Chlordane	13.8	LCS	P	0 - 30
LFB	Beta-BHC	26.9	LCS	P	0 - 30
LFB	Carbophenothion	17.4	LCS	P	0 - 30
LFB	Chlorothalonil	49.7	LCS	F	0 - 30
LFB	Cypermethrin	17.4	LCS	P	0 - 30
LFB	DDD-p,p'	23.0	LCS	P	0 - 30
LFB	DDE-p,p'	11.6	LCS	P	0 - 30
LFB	DDT-p,p'	20.3	LCS	P	0 - 30
LFB	Delta-BHC	21.5	LCS	P	0 - 30
LFB	Dicofol	63.6	LCS	F	0 - 30
LFB	Dieldrin	25.5	LCS	P	0 - 30
LFB	Endosulfan I	25.5	LCS	P	0 - 30
LFB	Endosulfan II	23.4	LCS	P	0 - 30
LFB	Endosulfan Sulfate	13.2	LCS	P	0 - 30
LFB	Endrin	19.6	LCS	P	0 - 30
LFB	Endrin Aldehyde	11.4	LCS	P	0 - 30
LFB	Endrin Ketone	22.9	LCS	P	0 - 30
LFB	Gamma-BHC	29.0	LCS	P	0 - 30
LFB	Gamma-Chlordane	15.0	LCS	P	0 - 30
LFB	Heptachlor	14.9	LCS	P	0 - 30
LFB	Heptachlor Epoxide	14.0	LCS	P	0 - 30
LFB	Methoxychlor	21.3	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P339743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Mirex	12.6	LCS	P	0 - 30
LFB	Permethrin	17.3	LCS	P	0 - 30
LFB	Trifluralin	16.3	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P339743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963585	Chlordane	0.237	Spike	P	0 - 30
1963585	Toxaphene	4.22	Spike	P	0 - 30
LFB	Chlordane	1.10	LCS	P	0 - 30
LFB	Toxaphene	4.56	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963382	2,4-D	3.75	Spike	P	0 - 30
1963382	3-Hydroxycarbofuran	4.18	Spike	P	0 - 30
1963382	Acetaminophen	1.85	Spike	P	0 - 30
1963382	Aldicarb	14.7	Spike	P	0 - 30
1963382	Aldicarb Sulfone	0.0	Spike	P	0 - 30
1963382	Aldicarb Sulfoxide	5.30	Spike	P	0 - 30
1963382	Bentazon	0.771	Spike	P	0 - 30
1963382	Carbamazepine	2.69	Spike	P	0 - 30
1963382	Carbaryl	2.22	Spike	P	0 - 30
1963382	Carbofuran	6.10	Spike	P	0 - 30
1963382	Diuron	3.84	Spike	P	0 - 30
1963382	Fenuron	1.13	Spike	P	0 - 30
1963382	Fluridone	2.17	Spike	P	0 - 30
1963382	Imidacloprid	7.68	Spike	P	0 - 30
1963382	Linuron	0.693	Spike	P	0 - 30
1963382	MCPP	2.30	Spike	P	0 - 30
1963382	Methiocarb	2.30	Spike	P	0 - 30
1963382	Methomyl	0.284	Spike	P	0 - 30
1963382	Oxamyl	0.478	Spike	P	0 - 30
1963382	Primidone	4.59	Spike	P	0 - 30
1963382	Propoxur	3.40	Spike	P	0 - 30
1963382	Pyraclostrobin	1.62	Spike	P	0 - 30
1963382	Triclopyr	2.13	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P339137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963146	AMPA	1.24	Spike	P	0 - 30
1963146	Glyphosate	0.978	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P339296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963387	Sucralose	3.87	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P339194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963628	Color (true)	4.55	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P339515

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963824	Total Alkalinity	0.431	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
 Batch ID: P339636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963696	TDS	1.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P340385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963695	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
 Batch ID: P339521

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1963629	Organic Carbon	0.970	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 1963708
 Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	39.8	P	30 - 160
EPA 8321B	Acetaminophen-d4	170	F	30 - 160
EPA 8321B	Carbamazepine-d10	133	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1963708
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	129	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	113	P	40 - 160
EPA 8321B	Primidone-d5	143	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	40 - 160

Lab Sample ID: 1963709
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbaryl-d7	46.5	P	30 - 160

Lab Sample ID: 1963711
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	68.1	P	37 - 117
EPA 8270D	Tetrachloro-m-xylene	55.0	P	34 - 101
EPA 8276	Decachlorobiphenyl	59.0	P	31 - 108
EPA 8276	PCNB	102	P	62 - 142

Lab Sample ID: 1963712
Field Sample ID: G1CE0025

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	124	P	71 - 126
EPA 8270D	Terbufos-d10	118	P	50 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81797
Included Lab Sample IDs: 1963695, 1963696

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

Reference Method: EPA 8321B
Run ID: A81802
Included Lab Sample IDs: 1963708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	89.3	95.9	P/P	70 - 130
Glyphosate	87.3	102	P/P	70 - 160

Reference Method: SM 2120 B
Run ID: A81803
Included Lab Sample IDs: 1963695, 1963696

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

Reference Method: SM 2120 B

Run ID: A81803

Included Lab Sample IDs: 1963695, 1963696

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81805

Included Lab Sample IDs: 1963699, 1963700

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81855

Included Lab Sample IDs: 1963697, 1963698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81857

Included Lab Sample IDs: 1963697, 1963698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81866

Included Lab Sample IDs: 1963698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81869

Included Lab Sample IDs: 1963697

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81871

Included Lab Sample IDs: 1963697

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81909

Included Lab Sample IDs: 1963713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	95.4	95.3	P/P	90 - 110
Cadmium	96.9	96.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81909

Included Lab Sample IDs: 1963713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	93.4	93.4	P/P	90 - 110
Copper	95.6	95.1	P/P	90 - 110
Lead	96.7	95.3	P/P	90 - 110
Nickel	96.0	94.9	P/P	90 - 110
Silver	94.7	93.2	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A81913

Included Lab Sample IDs: 1963695, 1963696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	97.5	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A81915

Included Lab Sample IDs: 1963697, 1963698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.2	93.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81928

Included Lab Sample IDs: 1963708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	109	P/P	60 - 150

Reference Method: EPA 8321B

Run ID: A81930

Included Lab Sample IDs: 1963708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.4	93.4	P/P	50 - 150
3-Hydroxycarbofuran	116	121	P/P	60 - 150
Acetaminophen	116	126	P/P	60 - 150
Aldicarb	107	104	P/P	60 - 150
Aldicarb Sulfone	103	111	P/P	50 - 150
Aldicarb Sulfoxide	114	107	P/P	50 - 150
Bentazon	129	130	P/P	50 - 150
Carbamazepine	115	116	P/P	60 - 150
Carbaryl	120	118	P/P	60 - 150
Carbofuran	123	127	P/P	50 - 150
Diuron	116	121	P/P	60 - 150
Fenuron	108	111	P/P	60 - 150
Fluridone	114	115	P/P	60 - 160
Imidacloprid	106	113	P/P	60 - 150
Linuron	133	128	P/P	60 - 150
MCPP	97.8	100	P/P	50 - 150
Methiocarb	132	138	P/P	50 - 150
Methomyl	107	103	P/P	50 - 150
Oxamyl	102	114	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A81930

Included Lab Sample IDs: 1963708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	120	97.2	P/P	60 - 150
Propoxur	122	117	P/P	50 - 150
Pyraclostrobin	123	129	P/P	60 - 150
Triclopyr	100	97.4	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A81940

Included Lab Sample IDs: 1963713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	105	P/P	90 - 110
Iron	104	105	P/P	90 - 110
Potassium	101	103	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Zinc	104	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81964

Included Lab Sample IDs: 1963698

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	99.3	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A81969

Included Lab Sample IDs: 1963695, 1963696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	98.8	P/P	90 - 110
Sulfate	97.9	99.9	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A82006

Included Lab Sample IDs: 1963712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	98.3		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	102		P	80 - 120
Atrazine	109		P	80 - 120
Atrazine Desethyl	112		P	80 - 120
Azinphos Methyl	105		P	80 - 120
Bromacil	97.6		P	80 - 120
Butylate	107		P	80 - 120
Chlorpyrifos Ethyl	101		P	80 - 120
Chlorpyrifos Methyl	94.7		P	80 - 120
Cyanazine	108		P	80 - 120
Demeton	110		P	80 - 120
Diazinon	91.3		P	80 - 120
Disulfoton	83.6		P	80 - 120
EPTC	111		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A82006

Included Lab Sample IDs: 1963712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ethion	103		P	80 - 120
Ethoprop	111		P	80 - 120
Fenamiphos	109		P	80 - 120
Fipronil	116		P	80 - 120
Fipronil Sulfide	114		P	80 - 120
Fipronil Sulfone	120		P	80 - 120
Fonofos	88.8		P	80 - 120
Hexazinone	110		P	80 - 120
Malathion	105		P	80 - 120
Metalaxyl	105		P	80 - 120
Metolachlor	112		P	80 - 120
Metribuzin	99.2		P	80 - 120
Mevinphos	105		P	80 - 120
Molinate	108		P	80 - 120
Norflurazon	103		P	80 - 120
Parathion Ethyl	112		P	80 - 120
Parathion Methyl	101		P	80 - 120
Pendimethalin	112		P	80 - 120
Phorate	108		P	80 - 120
Prometon	105		P	80 - 120
Prometryn	104		P	80 - 120
Simazine	106		P	80 - 120
Terbufos	94.6		P	80 - 120
Terbuthylazine	101		P	80 - 120

Reference Method: EPA 8270D

Run ID: A82038

Included Lab Sample IDs: 1963711

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	100		P	80 - 120
Alpha-Chlordane	99.7		P	80 - 120
Beta-BHC	97.4		P	80 - 120
Carbophenothion	95.8		P	80 - 120
Chlorothalonil	117		P	80 - 120
Cypermethrin	86.7		P	80 - 120
DDD-p,p'	103		P	80 - 120
DDE-p,p'	101		P	80 - 120
DDT-p,p'	99.1		P	80 - 120
Delta-BHC	99.9		P	80 - 120
Dicofol	104		P	80 - 120
Dieldrin	97.8		P	80 - 120
Endosulfan I	97.5		P	80 - 120
Endosulfan II	111		P	80 - 120
Endosulfan Sulfate	104		P	80 - 120
Endrin	99.5		P	80 - 120
Endrin Aldehyde	108		P	80 - 120
Endrin Ketone	100		P	80 - 120
Gamma-BHC	102		P	80 - 120
Gamma-Chlordane	99.8		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A82038
Included Lab Sample IDs: 1963711

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Heptachlor	96.6		P	80 - 120
Heptachlor Epoxide	100		P	80 - 120
Methoxychlor	101		P	80 - 120
Mirex	100		P	80 - 120
Permethrin	95.5		P	80 - 120
Trifluralin	99.3		P	80 - 120

Reference Method: EPA 8276
Run ID: A82103
Included Lab Sample IDs: 1963711

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	105		P	80 - 120
Toxaphene	103		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A82127
Included Lab Sample IDs: 1963713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	96.8	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A82220
Included Lab Sample IDs: 1963695, 1963696

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	97.1	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					0.686	
	Turbidity					0.847	
EPA 200.7 Rev. 4.4	Calcium	114	107	114	112		1.76
	Iron	112	113	115	111		3.39
	Magnesium	99.0	95.6	96.3	96.7		0.333
	Potassium	110	107	116	112		2.70
	Sodium	112	105	112	108		2.59
	Zinc	109	109	109	109		0.451
EPA 200.8 Rev. 5.4	Arsenic	105	104	102	102		0.0948
	Cadmium	105	105	104	103		1.11
	Chromium	100	103	101	100		0.500
	Copper	101	97.5	99.5	100		0.665

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
EPA 200.8 Rev. 5.4	Lead	101		102	101	100			0.627
	Nickel	104		102	100	100			0.244
	Silver	88.2		88.8	89.3	88.3			1.09
EPA 300.0 Rev. 2.1	Chloride	95.7		96.2	95.8			0.995	
	Sulfate	94.1		94.8	94.8			1.57	
EPA 350.1 Rev. 2.0	Ammonia-N	101		101	100				0.406
	Ammonia-N	104		99.2	103				2.97
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		91.6	108				10.6
EPA 353.2 Rev. 2.0	NO2NO3-N	104		102	103				1.16
EPA 365.1 Rev. 2.0	Total-P	99.6		95.3	98.6				3.10
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		96.3	97.3				0.729
EPA 8270D	Acetochlor	113	90.2	118	106		22.3		10.4
	Alachlor	116	95.3	113	109		19.7		3.36
	Aldrin	77.9	84.7	76.6	83.4		8.36		8.48
	Alpha-BHC	83.4	97.5	102	99.4		15.6		2.77
	Alpha-Chlordane	92.2	106	99.8	95.6		13.8		4.31
	Ametryn	221	164	181	166		29.7		8.86
	Atrazine	119	111				6.89		2.57
	Atrazine Desethyl	102	93.3	81.7	141		9.23		37.5
	Azinphos Methyl	152	141	150	162		7.92		7.62
	Beta-BHC	94.4	124	123	103		26.9		17.7
	Bromacil	89.2	76.7	107	109		15.1		2.41
	Butylate	52.5	50.1	46.6	52.8		4.69		12.5
	Carbophenothion	101	121	124	106		17.4		15.2
	Chlorothalonil	80.8	48.7	230	131		49.7		54.9
	Chlorpyrifos Ethyl	111	110	120	103		1.11		15.2
	Chlorpyrifos Methyl	122	107	137	102		13.2		29.2
	Cyanazine	149	147	145	145		1.36		0.181
	Cypermethrin	91.0	108	112	97.1		17.4		13.8
	DDD-p,p'	99.2	125	110	106		23.0		3.09
	DDE-p,p'	96.5	108	100	100		11.6		0.143
	DDT-p,p'	86.3	106	98.1	99.3		20.3		1.20
	Delta-BHC	104	129	139	125		21.5		10.4
	Demeton	103	105	84.7	105		1.66		21.6
	Diazinon	108	79.7	93.5	92.4		29.8		1.27
	Dicofol	76.7	39.7	84.0	101		63.6		18.8
	Dieldrin	96.8	125	100	98.3		25.5		2.14
	Disulfoton	77.6	78.5	88.6	73.8		1.12		18.2
	Endosulfan I	85.4	110	124	117		25.5		5.95
	Endosulfan II	110	140	158	155		23.4		1.82
	Endosulfan Sulfate	98.9	113	110	103		13.2		7.19
	Endrin	98.9	120	102	94.4		19.6		7.62
	Endrin Aldehyde	75.8	84.9	104	130		11.4		22.3
	Endrin Ketone	96.4	121	119	107		22.9		10.2
	EPTC	33.3	17.8	47.6	46.7		60.5		1.92
	Ethion	120	113	117	102		5.83		13.2
	Ethoprop	106	94.4	112	113		11.4		1.11
	Fenamiphos	107	106	109	101		0.157		7.62
	Fipronil	103	92.9	113	110		10.7		2.73
	Fipronil Sulfide	94.0	94.3	107	89.8		0.377		8.27
	Fipronil Sulfone	109	108	93.3	52.7		0.182		10.2
	Fonofos	95.5	95.6	103	88.9		0.102		15.1
	Gamma-BHC	86.7	116	99.6	95.9		29.0		3.75
	Gamma-Chlordane	92.2	107	99.2	93.8		15.0		5.61

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Heptachlor	80.1	93.0	88.2	81.8	14.9	7.56
	Heptachlor Epoxide	90.8	104	101	95.7	14.0	5.05
	Hexazinone	117	113	123	134	3.48	8.40
	Malathion	112	120	145	128	6.45	12.7
	Metalaxyl	110	87.8	113	102	22.8	10.6
	Methoxychlor	90.8	112	113	106	21.3	6.94
	Metolachlor	110	99.2	113	118	10.4	3.81
	Metribuzin	167	131	185	170	24.2	8.22
	Mevinphos	86.9	99.4	88.7	84.4	13.5	4.95
	Mirex	81.8	92.8	83.3	80.9	12.6	2.83
	Molinate	53.5	46.2	55.1	62.5	14.6	12.5
	Norflurazon	99.4	89.2	101	109	10.7	7.66
	Parathion Ethyl	104	98.4	107	114	5.68	6.24
	Parathion Methyl	132	107	134	119	21.3	11.8
	Pendimethalin	107	94.3	109	111	12.7	1.77
	Permethrin	90.5	108	104	101	17.3	3.57
	Phorate	89.9	82.9	96.2	83.1	8.05	14.7
	Prometon	95.8	102	94.8	103	6.59	8.10
	Prometryn	91.4	73.1	112	101	22.2	10.4
	Simazine	111	97.4	116	117	12.9	0.324
	Terbufos	110	109	102	86.7	0.665	16.2
	Terbutylazine	111	99.8	99.8	108	10.5	7.98
	Trifluralin	82.2	96.8	93.9	89.8	16.3	4.45
EPA 8276	Chlordane	88.6	89.6	56.7	56.9	1.10	0.237
	Toxaphene	92.6	88.5	72.6	69.6	4.56	4.22
EPA 8321B	2,4-D	68.1		52.5	50.4		3.75
	3-Hydroxycarbofuran	99.2		101	105		4.18
	Acetaminophen	96.9		109	107		1.85
	Aldicarb	81.8		73.9	63.7		14.7
	Aldicarb Sulfone	107		116	116		0.0
	Aldicarb Sulfoxide	94.4		96.2	91.3		5.30
	AMPA	118		98.6	96.6		1.24
	Bentazon	82.7		30.0	29.7		0.771
	Carbamazepine	95.0		86.3	83.9		2.69
	Carbaryl	77.4		57.5	58.8		2.22
	Carbofuran	82.7		68.0	63.9		6.10
	Diuron	79.2		65.6	68.2		3.84
	Fenuron	102		80.7	81.7		1.13
	Fluridone	84.6		68.0	66.6		2.17
	Glyphosate	121		131	129		0.978
	Imidacloprid	98.6		161	148		7.68
	Linuron	89.4		78.2	77.6		0.693
	MCPP	68.2		38.2	39.1		2.30
	Methiocarb	83.5		75.9	74.2		2.30
	Methomyl	97.8		81.0	81.2		0.284
	Oxamyl	100		86.0	85.6		0.478
	Primidone	107		109	104		4.59
	Propoxur	82.8		62.9	60.8		3.40
	Pyraclostrobin	93.9		76.5	75.3		1.62
	Sucralose	105		116	112		3.87
	Triclopyr	67.6		45.0	45.9		2.13
SM 2120 B	Color (true)					4.55	
SM 2320 B-97	Total Alkalinity	96.0				0.431	
SM 2540 C-97	TDS					1.13	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
SM 4500 F-C-97	Fluoride	97.1	95.8	95.2		
SM 5310 B-00	Organic Carbon	94.0	94.2	95.6		
						MS
						0.473
						0.970

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1963695, 1963696
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1963713
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1963713
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1963695, 1963696
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1963695, 1963696
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1963697, 1963698
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1963697, 1963698
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1963697, 1963698
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1963697, 1963698
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1963699, 1963700
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1963711
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1963712
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1963711
EPA 8321B / E31780	Carbamates in water matrices by HPLC/MS/MS	1963709
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1963708
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	1963708
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	1963708
SM 2120 B / E31780	True Color measured at 450 nm	1963695, 1963696
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1963695, 1963696
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1963695, 1963696
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1963695, 1963696
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1963695, 1963696
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1963697, 1963698

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	02/01/2018			02/01/2018 16:00	DeAsia Armster	1963695, 1963696
EPA 200.7 Rev. 4.4	02/01/2018	02/05/2018	Elliott D. Healy	02/08/2018	Betina Topolski	1963713
	02/01/2018	02/15/2018	Elliott D. Healy	02/16/2018	Betina Topolski	1963713
EPA 200.8 Rev. 5.4	02/01/2018	02/05/2018	Elliott D. Healy	02/07/2018	Robert K Palmer	1963713
EPA 300.0 Rev. 2.1	02/01/2018			02/09/2018	Julia Storbeck	1963695, 1963696
EPA 350.1 Rev. 2.0	02/01/2018			02/05/2018	Ping Hua	1963697
	02/01/2018			02/09/2018	Julia Storbeck	1963698
EPA 351.2 Rev. 2.0	02/01/2018	02/02/2018	Adrian Shelby	02/05/2018	Joseph Suarez	1963697, 1963698
EPA 353.2 Rev. 2.0	02/01/2018			02/05/2018	Lauren Bottorf	1963697, 1963698
EPA 365.1 Rev. 2.0	02/01/2018	02/05/2018	Sima Feizi	02/06/2018	Beverly Y. Sanders	1963697, 1963698
EPA 365.1 Rev. 2.0 dissolved	02/01/2018			02/01/2018 15:46	Megan Treadwell	1963699
	02/01/2018			02/01/2018 15:47	Megan Treadwell	1963700
EPA 8270D	02/01/2018	02/05/2018	John Kaba	02/08/2018	Vandana T. Nagar	1963712
	02/01/2018	02/07/2018	Rasheda Ghaffari	02/09/2018	Marek Topolski	1963711
EPA 8276	02/01/2018	02/07/2018	Rasheda Ghaffari	02/15/2018	John P. Burgos	1963711
EPA 8321B	02/01/2018	02/01/2018	Hoor Shaik	02/04/2018	Julie Michelle Frank	1963709
	02/01/2018	02/01/2018	Hoor Shaik	02/05/2018	Julie Michelle Frank	1963708
	02/01/2018	02/01/2018	Juyoung Kim	02/01/2018	Juyoung Kim	1963708
	02/01/2018	02/06/2018	Juyoung Kim	02/07/2018	Juyoung Kim	1963708
SM 2120 B	02/01/2018			02/01/2018 16:07	Tanya Welborn	1963695
	02/01/2018			02/01/2018 16:08	Tanya Welborn	1963696
SM 2320 B-97	02/01/2018			02/08/2018	Lauren Bottorf	1963695, 1963696
SM 2540 C-97	02/01/2018			02/02/2018	DeAsia Armster	1963695, 1963696
SM 2540 D-97	02/01/2018			02/02/2018	DeAsia Armster	1963695, 1963696
SM 4500 F-C-97	02/01/2018			02/22/2018	Dale L. Simmons	1963695, 1963696
SM 5310 B-00	02/01/2018			02/07/2018	Megan Treadwell	1963697, 1963698