Chemical Analysis Report

NW-DIST-2018-07-03-01

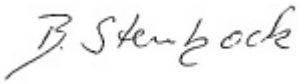
Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **PENS/CANT RUN**
Request ID: **RQ-2018-07-23-19**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator Date Certified: 27-JUL-2018 13:04



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: Thompson Bayou 50m West of Edward Ball Trail (UWF) **Collection Date/Time: 07/02/2018 12:45**

Field ID: G4NW0424 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004650	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P347945	
	EPA 300.0 Rev. 2.1	Chloride	5.9		mg Cl/L	P348518	
		Sulfate	2.5		mg SO4/L	P348524	
	SM 2120 B	Color (true)	42	A	PCU	P347937	
	SM 2320 B-97	Total Alkalinity	17		mg CaCO3/L	P348125	
	SM 2540 C-97	TDS	40		mg/L	P348461	
	SM 2540 D-97	TSS	3	I	mg/L	P348440	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P348126	
2004651	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P348356	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P348141	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.33		mg N/L	P348201	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P348079	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P348454	
2004652	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P347990	
2004655	EPA 8321B	Aldicarb	0.020	U	ug/L	P347840	
		Aldicarb Sulfone	0.0020	U	ug/L	P347840	
		Aldicarb Sulfoxide	0.0020	UJ	ug/L	P347840	MS
		Carbaryl	0.0020	U	ug/L	P347840	
		Carbofuran	0.0020	U	ug/L	P347840	
		3-Hydroxycarbofuran	0.0020	U	ug/L	P347840	
		Methiocarb	0.0020	U	ug/L	P347840	
		Methomyl	0.0020	U	ug/L	P347840	
		Oxamyl	0.0020	U	ug/L	P347840	
		Propoxur	0.0020	U	ug/L	P347840	
2004656		2,4-D	0.010		ug/L	P347840	
		Bentazon	0.0058		ug/L	P347840	
		MCPP	0.0028	I	ug/L	P347840	
		Triclopyr**	0.0040	U	ug/L	P347840	
		Imidacloprid	0.032	V	ug/L	P347840	
		Diuron	0.0020	U	ug/L	P347840	
		Pyraclostrobin**	0.0020	U	ug/L	P347840	
		Primidone**	0.0040	U	ug/L	P347840	
		Linuron	0.0040	U	ug/L	P347840	
		Acetaminophen**	0.0080	U	ug/L	P347840	
		Fenuron	0.016	U	ug/L	P347840	
		Imazapyr**	0.0040	U	ug/L	P347840	
		Carbamazepine**	5.6E-04	I	ug/L	P347840	
		Fluridone**	4.0E-04	U	ug/L	P347840	
		Hydrocodone**	8.0E-04	U	ug/L	P347840	
		Naproxen**	0.0080	U	ug/L	P347840	
		Ibuprofen**	0.020	U	ug/L	P347840	
		Sucralose**	0.010	U	ug/L	P347901	

Field ID: G4NW0424 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004656	EPA 8321B	Glyphosate**	0.10	U	ug/L	P347901	
		AMPA**	0.10	U	ug/L	P347901	
		Endothall**	0.10	U	ug/L	P347901	
		Glufosinate**	0.10	U	ug/L	P347901	
		Acesulfame K**	0.10	U	ug/L	P347901	
2004657	EPA 8270D	Aldrin	4.5	U	ng/L	P347978	
		Alpha-BHC	2.3	U	ng/L	P347978	
		Beta-BHC	4.5	U	ng/L	P347978	
		Delta-BHC	4.5	U	ng/L	P347978	
		Gamma-BHC	4.5	U	ng/L	P347978	
		Carbophenothion	4.5	U	ng/L	P347978	
		Chlorothalonil	2.3	U	ng/L	P347978	
		Cypermethrin	23	U	ng/L	P347978	
		DDD-p,p'	3.4	U	ng/L	P347978	
		DDE-p,p'	3.4	U	ng/L	P347978	
		DDT-p,p'	3.4	U	ng/L	P347978	
		Dieldrin	4.5	U	ng/L	P347978	
		Endosulfan I	4.5	U	ng/L	P347978	
		Endosulfan II	4.5	U	ng/L	P347978	
		Endosulfan Sulfate	2.3	U	ng/L	P347978	
		Endrin	2.3	U	ng/L	P347978	
		Endrin Aldehyde	2.3	U	ng/L	P347978	
		Heptachlor	1.7	U	ng/L	P347978	
		Heptachlor Epoxide	2.3	U	ng/L	P347978	
		Methoxychlor	4.5	U	ng/L	P347978	
		Mirex	2.3	U	ng/L	P347978	
		Permethrin	11	U	ng/L	P347978	
		Trifluralin	1.1	U	ng/L	P347978	
		Alpha-Chlordane	1.1	U	ng/L	P347978	
		Gamma-Chlordane	1.1	U	ng/L	P347978	
		Endrin Ketone	2.3	U	ng/L	P347978	
		Dicofol	34	U	ng/L	P347978	
	EPA 8276	Chlordane	2.8	U	ng/L	P347978	
		Toxaphene	34	U	ng/L	P347978	
2004658	EPA 8270D	Alachlor	0.26	U	ng/L	P347893	
		Ametryn	0.34	U	ng/L	P347893	
		Atrazine	19		ng/L	P347893	
		Atrazine Desethyl	5.1	I	ng/L	P347893	
		Azinphos Methyl	2.3	U	ng/L	P347893	
		Bromacil	4.5		ng/L	P347893	
		Butylate	0.41	U	ng/L	P347893	
		Chlorpyrifos Ethyl	0.26	U	ng/L	P347893	
		Chlorpyrifos Methyl	0.10	U	ng/L	P347893	
		Demeton	2.1	U	ng/L	P347893	
		Diazinon	0.13	U	ng/L	P347893	

Field ID: G4NW0424 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2004658	EPA 8270D	Disulfoton	0.52	U	ng/L	P347893	
		EPTC	1.3	U	ng/L	P347893	
		Ethion	0.16	U	ng/L	P347893	
		Ethoprop	0.10	U	ng/L	P347893	
		Fenamiphos	0.26	U	ng/L	P347893	RPD
		Fipronil	1.8		ng/L	P347893	
		Fipronil Sulfide	0.74		ng/L	P347893	
		Fipronil Sulfone	2.4		ng/L	P347893	
		Hexazinone	0.52	U	ng/L	P347893	
		Malathion	0.36	U	ng/L	P347893	
		Metribuzin	0.21	U	ng/L	P347893	
		Mevinphos	0.52	U	ng/L	P347893	
		Molinate	0.31	U	ng/L	P347893	
		Norflurazon	0.52	U	ng/L	P347893	
		Pendimethalin	1.0	U	ng/L	P347893	
		Phorate	0.26	U	ng/L	P347893	
		Prometon	3.3	I	ng/L	P347893	
		Prometryn	0.21	U	ng/L	P347893	
		Simazine	3.1		ng/L	P347893	
		Terbufos	0.10	U	ng/L	P347893	
		Terbuthylazine	0.44	U	ng/L	P347893	
		Fonofos	0.21	U	ng/L	P347893	
		Metalaxyl	0.26	U	ng/L	P347893	
		Metolachlor	1.3		ng/L	P347893	
		Acetochlor	0.26	U	ng/L	P347893	
		Cyanazine	0.52	U	ng/L	P347893	
		Parathion Ethyl	0.26	U	ng/L	P347893	
		Parathion Methyl	0.26	U	ng/L	P347893	
2004659	EPA 200.7 Rev. 4.4	Calcium	7.67		mg/L	P347983	
		Iron	810		ug/L	P347983	
		Magnesium	1.23		mg/L	P347983	
		Potassium	0.70	I	mg/L	P347983	
		Sodium	3.8		mg/L	P347983	
		Zinc	5.0	U	ug/L	P347983	
	EPA 200.8 Rev. 5.4	Arsenic	0.63		ug/L	P347983	
		Cadmium	0.020	U	ug/L	P347983	
		Chromium	0.40	U	ug/L	P347983	
		Copper	0.77	I	ug/L	P347983	
		Lead	0.29		ug/L	P347983	
		Nickel	0.29	I	ug/L	P347983	
		Silver	0.010	U	ug/L	P347983	

Ref. Method and Comment:
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: Refer to the narrative for an explanation of QC Codes.
EPA 8321B: V - Due to detect in the extraction blank.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347945

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347983

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: P347983

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: P348518

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348141

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

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

Reference Method: EPA 8270D
Batch ID: P347893

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270D
Batch ID: P347893

Component	Result	Code	Units
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8270D
Batch ID: P347978

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

Reference Method: EPA 8276
Batch ID: P347978

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

Reference Method: EPA 8321B
Batch ID: P347840

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P347840

Component	Result	Code	Units
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	0.016	U	ug/L
Fluridone	4.0E-04	U	ug/L
Hydrocodone	8.0E-04	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0042	I	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Methiocarb	0.0020	U	ug/L
Methomyl	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Oxamyl	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Propoxur	0.0020	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P347901

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.10	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P347937

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P348125

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

Reference Method: SM 2540 C-97
Batch ID: P348461

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-97
Batch ID: P348461

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P348440

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P348454

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: P347983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	107		P	85 - 115
Iron	104		P	85 - 115
Magnesium	106		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	97.7		P	85 - 115
Zinc	95.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347983

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	95.4		P	85 - 115
Cadmium	96.9		P	85 - 115
Chromium	93.9		P	85 - 115
Copper	93.7		P	85 - 115
Lead	93.0		P	85 - 115
Nickel	96.1		P	85 - 115
Silver	111		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	94.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	93.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348141

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

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

Reference Method: EPA 8270D
Batch ID: P347893

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	91.7	92.8	P/P	74 - 119
Alachlor	92.1	92.6	P/P	75 - 118
Ametryn	96.3	102	P/P	59 - 137
Atrazine	90.6	93.5	P/P	73 - 120
Atrazine Desethyl	88.2	87.1	P/P	19 - 129
Azinphos Methyl	106	103	P/P	65 - 181
Bromacil	85.5	83.4	P/P	43 - 123
Butylate	43.6	55.1	P/P	28 - 85.0
Chlorpyrifos Ethyl	79.1	90.6	P/P	55 - 112
Chlorpyrifos Methyl	83.4	91.7	P/P	35 - 124
Cyanazine	125	124	P/P	26 - 262
Demeton	69.0	76.7	P/P	43 - 122
Diazinon	99.4	101	P/P	72 - 120
Disulfoton	84.8	86.4	P/P	45 - 137
EPTC	42.5	47.4	P/P	28 - 95.0
Ethion	78.6	74.1	P/P	63 - 127
Ethoprop	76.2	78.9	P/P	63 - 109
Fenamiphos	91.3	91.4	P/P	66 - 136
Fipronil	88.7	84.9	P/P	63 - 126
Fipronil Sulfide	74.3	77.7	P/P	59 - 123
Fipronil Sulfone	73.4	70.7	P/P	56 - 122
Fonofos	82.6	89.6	P/P	64 - 114
Hexazinone	85.6	94.2	P/P	49 - 144
Malathion	78.2	86.5	P/P	68 - 131
Metalaxyl	89.9	90.9	P/P	57 - 126
Metolachlor	90.0	90.8	P/P	75 - 118
Metribuzin	112	138	P/P	46 - 169
Mevinphos	65.9	77.1	P/P	34 - 126
Molinate	53.7	60.3	P/P	37 - 101
Norflurazon	87.7	81.7	P/P	63 - 127
Parathion Ethyl	81.6	87.0	P/P	78 - 109
Parathion Methyl	88.5	94.8	P/P	74 - 123
Pendimethalin	101	105	P/P	51 - 130
Phorate	81.3	74.3	P/P	53 - 116
Prometon	83.2	84.7	P/P	66 - 124
Prometryn	89.1	89.9	P/P	66 - 124
Simazine	90.9	97.6	P/P	62 - 134
Terbufos	81.1	89.0	P/P	59 - 115
Terbuthylazine	85.1	88.8	P/P	76 - 113

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P347978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	44.0	56.3	P/P	24 - 89.0
Alpha-BHC	90.5	95.6	P/P	58 - 117
Alpha-Chlordane	73.1	83.7	P/P	56 - 115
Beta-BHC	134	112	P/P	55 - 137
Carbophenothion	71.4	67.7	P/P	37 - 145
Chlorothalonil	69.7	84.2	P/P	26 - 163
Cypermethrin	75.5	77.3	P/P	42 - 156
DDD-p,p'	94.8	98.6	P/P	59 - 129
DDE-p,p'	74.3	88.8	P/P	52 - 117
DDT-p,p'	86.6	98.0	P/P	48 - 128
Delta-BHC	140	121	P/P	59 - 158
Dicofol	87.9	97.6	P/P	19 - 124
Dieldrin	85.0	90.7	P/P	57 - 126
Endosulfan I	83.5	85.4	P/P	59 - 133
Endosulfan II	101	97.5	P/P	58 - 148
Endosulfan Sulfate	103	101	P/P	56 - 135
Endrin	85.8	99.8	P/P	50 - 140
Endrin Aldehyde	103	107	P/P	47 - 141
Endrin Ketone	101	101	P/P	63 - 123
Gamma-BHC	117	101	P/P	59 - 132
Gamma-Chlordane	67.2	79.6	P/P	55 - 112
Heptachlor	56.5	73.4	P/P	45 - 102
Heptachlor Epoxide	82.0	89.4	P/P	61 - 116
Methoxychlor	90.2	99.7	P/P	60 - 133
Mirex	56.3	70.0	P/P	40 - 98.0
Permethrin	73.2	84.1	P/P	45 - 131
Trifluralin	74.6	86.0	P/P	38 - 179

Reference Method: EPA 8276
Batch ID: P347978

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.0	92.1	P/P	47 - 125
Toxaphene	73.2	89.1	P/P	46 - 147

Reference Method: EPA 8321B
Batch ID: P347840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	59.9		P	40 - 150
3-Hydroxycarbofuran	72.5		P	40 - 150
Acetaminophen	66.2		P	30 - 150
Aldicarb	88.1		P	30 - 150
Aldicarb Sulfone	74.5		P	40 - 150
Aldicarb Sulfoxide	79.0		P	40 - 150
Bentazon	78.6		P	30 - 150
Carbamazepine	78.3		P	40 - 150
Carbaryl	63.4		P	40 - 150
Carbofuran	70.0		P	40 - 150
Diuron	74.9		P	40 - 150
Fenuron	91.0		P	40 - 150
Fluridone	90.2		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P347840

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Hydrocodone	79.6		P	40 - 150
Ibuprofen	91.1		P	40 - 150
Imazapyr	65.1		P	40 - 150
Imidacloprid	74.8		P	40 - 160
Linuron	53.2		P	40 - 150
MCPP	110		P	40 - 150
Methiocarb	56.3		P	40 - 150
Methomyl	81.0		P	40 - 150
Naproxen	63.3		P	40 - 150
Oxamyl	84.6		P	40 - 150
Primidone	68.0		P	40 - 150
Propoxur	74.7		P	40 - 150
Pyraclostrobin	81.7		P	40 - 150
Triclopyr	95.4		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	60.6		P	40 - 140
AMPA	77.3		P	40 - 140
Endothall	107		P	40 - 140
Glufosinate	99.9		P	40 - 140
Glyphosate	94.7		P	40 - 140
Sucralose	96.2		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P347937

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-97
Batch ID: P348125

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348454

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004659	Calcium	109		P	80 - 120
2004659	Iron	104	106	P/P	80 - 120
2004659	Magnesium	107	109	P/P	80 - 120
2004659	Potassium	99.2	102	P/P	80 - 120
2004659	Sodium	95.8	98.1	P/P	80 - 120
2004659	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347983

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004659	Arsenic	95.4	94.5	P/P	80 - 120
2004659	Cadmium	99.2	98.0	P/P	80 - 120
2004659	Chromium	94.9	95.4	P/P	80 - 120
2004659	Copper	92.9	93.1	P/P	80 - 120
2004659	Lead	94.1	92.6	P/P	80 - 120
2004659	Nickel	94.5	95.0	P/P	80 - 120
2004659	Silver	110	110	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004634	Chloride	90.7	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004634	Sulfate	91.0	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004651	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004593	Kjeldahl Nitrogen	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004593	NO2NO3-N	101	102	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004593	Total-P	100	95.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004638	O-Phosphate-P	91.6	93.1	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P347893

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2003743	Acetochlor	91.7	91.4	P/P	67 - 125
2003743	Alachlor	98.8	93.4	P/P	69 - 123
2003743	Ametryn	101	90.2	P/P	52 - 151
2003743	Atrazine	102	97.7	P/P	71 - 125
2003743	Atrazine Desethyl	73.9	63.1	P/P	10 - 129
2003743	Azinphos Methyl	111	110	P/P	48 - 200
2003743	Bromacil	80.3	68.8	P/P	46 - 130
2003743	Butylate	52.2	56.0	P/P	10 - 85.0
2003743	Chlorpyrifos Ethyl	89.0	89.3	P/P	54 - 115
2003743	Chlorpyrifos Methyl	83.6	83.7	P/P	44 - 117
2003743	Cyanazine	114	89.3	P/P	10 - 262
2003743	Demeton	75.8	77.4	P/P	24 - 145
2003743	Diazinon	107	101	P/P	66 - 129
2003743	Disulfoton	93.3	88.5	P/P	45 - 139
2003743	EPTC	47.3	52.0	P/P	10 - 86.0
2003743	Ethion	69.9	67.8	P/P	59 - 133
2003743	Ethoprop	90.2	82.8	P/P	54 - 116
2003743	Fenamiphos	86.8	123	P/P	55 - 140
2003743	Fipronil	84.3	76.7	P/P	37 - 142
2003743	Fipronil Sulfide	70.0	63.8	P/P	37 - 130
2003743	Fipronil Sulfone	62.2	52.3	P/P	18 - 143
2003743	Fonofos	97.0	95.3	P/P	55 - 118
2003743	Hexazinone	94.9	82.9	P/P	62 - 140
2003743	Malathion	75.7	73.4	P/P	64 - 132
2003743	Metalaxyl	89.5	85.7	P/P	55 - 129
2003743	Metolachlor	90.2	87.7	P/P	56 - 137
2003743	Metribuzin	144	139	P/P	16 - 218
2003743	Mevinphos	83.4	83.5	P/P	34 - 129
2003743	Molinate	66.5	67.2	P/P	16 - 99.0
2003743	Norflurazon	66.7	53.1	P/P	43 - 135
2003743	Parathion Ethyl	85.5	79.6	P/P	71 - 112
2003743	Parathion Methyl	91.9	89.3	P/P	65 - 127
2003743	Pendimethalin	112	106	P/P	35 - 159
2003743	Phorate	86.4	91.8	P/P	41 - 129
2003743	Prometon	97.8	95.5	P/P	56 - 140
2003743	Prometryn	95.7	91.8	P/P	65 - 130
2003743	Simazine	101	93.0	P/P	54 - 148
2003743	Terbufos	98.2	94.1	P/P	53 - 126
2003743	Terbuthylazine	93.4	89.1	P/P	73 - 114

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P347978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002261	Aldrin	64.0	57.9	P/P	26 - 96.0
2002261	Alpha-BHC	89.9	90.3	P/P	51 - 123
2002261	Alpha-Chlordane	83.7	77.8	P/P	45 - 120
2002261	Beta-BHC	123	135	P/P	43 - 146
2002261	Carbophenothion	98.1	101	P/P	26 - 179
2002261	Chlorothalonil	127	124	P/P	10 - 215
2002261	Cypermethrin	88.7	93.6	P/P	35 - 169
2002261	DDD-p,p'	93.3	91.7	P/P	49 - 131
2002261	DDE-p,p'	87.6	82.4	P/P	39 - 127
2002261	DDT-p,p'	94.4	94.1	P/P	49 - 120
2002261	Delta-BHC	156	168	P/P	49 - 187
2002261	Dicofol	101	96.6	P/P	10 - 129
2002261	Dieldrin	98.5	89.3	P/P	46 - 132
2002261	Endosulfan I	110	99.5	P/P	57 - 130
2002261	Endosulfan II	119	110	P/P	52 - 148
2002261	Endosulfan Sulfate	99.6	101	P/P	55 - 129
2002261	Endrin	101	96.4	P/P	45 - 133
2002261	Endrin Aldehyde	71.9	74.6	P/P	26 - 140
2002261	Endrin Ketone	101	103	P/P	60 - 125
2002261	Gamma-BHC	111	116	P/P	50 - 145
2002261	Gamma-Chlordane	80.4	74.7	P/P	44 - 118
2002261	Heptachlor	68.4	65.8	P/P	35 - 106
2002261	Heptachlor Epoxide	91.4	85.2	P/P	52 - 123
2002261	Methoxychlor	86.5	89.9	P/P	54 - 132
2002261	Mirex	73.0	72.7	P/P	36 - 107
2002261	Permethrin	92.5	92.8	P/P	47 - 135
2002261	Trifluralin	81.8	81.5	P/P	32 - 228

Reference Method: EPA 8276
Batch ID: P347978

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004657	Chlordane	74.2	71.1	P/P	41 - 134
2004657	Toxaphene	58.8	57.3	P/P	39 - 158

Reference Method: EPA 8321B
Batch ID: P347840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004655	3-Hydroxycarbofuran	73.2	72.6	P/P	40 - 150
2004655	Aldicarb	76.9	77.4	P/P	30 - 150
2004655	Aldicarb Sulfone	69.7	70.8	P/P	40 - 150
2004655	Aldicarb Sulfoxide	24.0	24.1	F/F	40 - 150
2004655	Carbaryl	53.8	52.7	P/P	40 - 150
2004655	Carbofuran	57.6	57.4	P/P	40 - 150
2004655	Methiocarb	47.1	44.9	P/P	40 - 150
2004655	Methomyl	74.7	77.2	P/P	40 - 150
2004655	Oxamyl	78.3	75.3	P/P	40 - 150
2004655	Propoxur	62.0	61.5	P/P	40 - 150
2004656	2,4-D	95.6	78.7	P/P	40 - 150
2004656	Acetaminophen	75.6	78.1	P/P	30 - 150
2004656	Bentazon	65.4	59.8	P/P	30 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P347840

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004656	Carbamazepine	76.3	74.5	P/P	40 - 150
2004656	Diuron	71.8	64.3	P/P	40 - 150
2004656	Fenuron	83.1	82.3	P/P	40 - 150
2004656	Fluridone	89.7	78.2	P/P	40 - 150
2004656	Hydrocodone	88.7	89.2	P/P	40 - 150
2004656	Ibuprofen	81.8	81.2	P/P	40 - 150
2004656	Imazapyr	95.8	96.7	P/P	40 - 150
2004656	Imidacloprid	129	137	P/P	40 - 160
2004656	Linuron	54.1	41.2	P/P	40 - 150
2004656	MCPP	150	130	P/P	40 - 150
2004656	Naproxen	84.3	88.9	P/P	40 - 150
2004656	Primidone	76.5	79.5	P/P	40 - 150
2004656	Pyraclostrobin	83.4	79.1	P/P	40 - 150
2004656	Triclopyr	143	129	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P347901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004656	Acesulfame K	68.3	76.2	P/P	40 - 140
2004656	AMPA	97.8	93.0	P/P	40 - 140
2004656	Endothall	129	126	P/P	40 - 140
2004656	Glufosinate	96.6	96.1	P/P	40 - 140
2004656	Glyphosate	94.0	97.9	P/P	40 - 140
2004656	Sucralose	71.0	76.1	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004538	Fluoride	98.0	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P348454

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2004540	Organic Carbon	97.0	97.7	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Turbidity	3.32	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P347983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004659	Calcium	1.31	Spike	P	0 - 20
2004659	Iron	1.62	Spike	P	0 - 20
2004659	Magnesium	1.42	Spike	P	0 - 20
2004659	Potassium	2.39	Spike	P	0 - 20
2004659	Sodium	1.19	Spike	P	0 - 20
2004659	Zinc	0.258	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P347983

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004659	Arsenic	0.905	Spike	P	0 - 20
2004659	Cadmium	1.21	Spike	P	0 - 20
2004659	Chromium	0.554	Spike	P	0 - 20
2004659	Copper	0.219	Spike	P	0 - 20
2004659	Lead	1.63	Spike	P	0 - 20
2004659	Nickel	0.523	Spike	P	0 - 20
2004659	Silver	0.220	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Chloride	5.78	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P348524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004634	Sulfate	7.14	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P348356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004651	Ammonia-N	1.05	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004593	Kjeldahl Nitrogen	0.735	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P348201

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004593	NO2NO3-N	0.240	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P348079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004593	Total-P	4.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004638	O-Phosphate-P	1.45	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P347893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003743	Acetochlor	0.345	Spike	P	0 - 30
2003743	Alachlor	5.57	Spike	P	0 - 30
2003743	Ametryn	11.4	Spike	P	0 - 30
2003743	Atrazine	3.86	Spike	P	0 - 30
2003743	Atrazine Desethyl	15.8	Spike	P	0 - 30
2003743	Azinphos Methyl	1.57	Spike	P	0 - 30
2003743	Bromacil	15.5	Spike	P	0 - 30
2003743	Butylate	7.02	Spike	P	0 - 30
2003743	Chlorpyrifos Ethyl	0.384	Spike	P	0 - 30
2003743	Chlorpyrifos Methyl	0.147	Spike	P	0 - 30
2003743	Cyanazine	23.9	Spike	P	0 - 30
2003743	Demeton	2.00	Spike	P	0 - 30
2003743	Diazinon	6.24	Spike	P	0 - 30
2003743	Disulfoton	5.30	Spike	P	0 - 30
2003743	EPTC	9.37	Spike	P	0 - 30
2003743	Ethion	3.11	Spike	P	0 - 30
2003743	Ethoprop	8.63	Spike	P	0 - 30
2003743	Fenamiphos	34.8	Spike	F	0 - 30
2003743	Fipronil	9.46	Spike	P	0 - 30
2003743	Fipronil Sulfide	9.26	Spike	P	0 - 30
2003743	Fipronil Sulfone	17.3	Spike	P	0 - 30
2003743	Fonofos	1.83	Spike	P	0 - 30
2003743	Hexazinone	13.5	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P347893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2003743	Malathion	2.96	Spike	P	0 - 30
2003743	Metalaxyl	4.31	Spike	P	0 - 30
2003743	Metolachlor	2.70	Spike	P	0 - 30
2003743	Metribuzin	3.72	Spike	P	0 - 30
2003743	Mevinphos	0.0651	Spike	P	0 - 30
2003743	Molinate	1.09	Spike	P	0 - 30
2003743	Norflurazon	22.6	Spike	P	0 - 30
2003743	Parathion Ethyl	7.10	Spike	P	0 - 30
2003743	Parathion Methyl	2.84	Spike	P	0 - 30
2003743	Pendimethalin	5.54	Spike	P	0 - 30
2003743	Phorate	6.07	Spike	P	0 - 30
2003743	Prometon	2.39	Spike	P	0 - 30
2003743	Prometryn	4.18	Spike	P	0 - 30
2003743	Simazine	8.21	Spike	P	0 - 30
2003743	Terbufos	4.19	Spike	P	0 - 30
2003743	Terbuthylazine	4.62	Spike	P	0 - 30
LFB	Acetochlor	1.13	LCS	P	0 - 30
LFB	Alachlor	0.570	LCS	P	0 - 30
LFB	Ametryn	5.36	LCS	P	0 - 30
LFB	Atrazine	3.16	LCS	P	0 - 30
LFB	Atrazine Desethyl	1.17	LCS	P	0 - 30
LFB	Azinphos Methyl	2.35	LCS	P	0 - 30
LFB	Bromacil	2.47	LCS	P	0 - 30
LFB	Butylate	23.3	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	13.4	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	9.40	LCS	P	0 - 30
LFB	Cyanazine	1.20	LCS	P	0 - 30
LFB	Demeton	10.7	LCS	P	0 - 30
LFB	Diazinon	1.56	LCS	P	0 - 30
LFB	Disulfoton	1.95	LCS	P	0 - 30
LFB	EPTC	10.8	LCS	P	0 - 30
LFB	Ethion	5.97	LCS	P	0 - 30
LFB	Ethoprop	3.44	LCS	P	0 - 30
LFB	Fenamiphos	0.0315	LCS	P	0 - 30
LFB	Fipronil	4.42	LCS	P	0 - 30
LFB	Fipronil Sulfide	4.53	LCS	P	0 - 30
LFB	Fipronil Sulfone	3.63	LCS	P	0 - 30
LFB	Fonofos	8.16	LCS	P	0 - 30
LFB	Hexazinone	9.51	LCS	P	0 - 30
LFB	Malathion	10.1	LCS	P	0 - 30
LFB	Metalaxyl	1.08	LCS	P	0 - 30
LFB	Metolachlor	0.804	LCS	P	0 - 30
LFB	Metribuzin	20.7	LCS	P	0 - 30
LFB	Mevinphos	15.6	LCS	P	0 - 30
LFB	Molinate	11.5	LCS	P	0 - 30
LFB	Norflurazon	7.15	LCS	P	0 - 30
LFB	Parathion Ethyl	6.42	LCS	P	0 - 30
LFB	Parathion Methyl	6.93	LCS	P	0 - 30
LFB	Pendimethalin	4.38	LCS	P	0 - 30
LFB	Phorate	8.94	LCS	P	0 - 30
LFB	Prometon	1.87	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P347893

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Prometryn	0.938	LCS	P	0 - 30
LFB	Simazine	7.08	LCS	P	0 - 30
LFB	Terbufos	9.35	LCS	P	0 - 30
LFB	Terbuthylazine	4.25	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P347978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002261	Aldrin	9.98	Spike	P	0 - 30
2002261	Alpha-BHC	0.456	Spike	P	0 - 30
2002261	Alpha-Chlordane	7.31	Spike	P	0 - 30
2002261	Beta-BHC	9.66	Spike	P	0 - 30
2002261	Carbophenothion	3.28	Spike	P	0 - 30
2002261	Chlorothalonil	2.86	Spike	P	0 - 30
2002261	Cypermethrin	5.38	Spike	P	0 - 30
2002261	DDD-p,p'	1.73	Spike	P	0 - 30
2002261	DDE-p,p'	6.17	Spike	P	0 - 30
2002261	DDT-p,p'	0.382	Spike	P	0 - 30
2002261	Delta-BHC	7.39	Spike	P	0 - 30
2002261	Dicofol	4.00	Spike	P	0 - 30
2002261	Dieldrin	9.79	Spike	P	0 - 30
2002261	Endosulfan I	9.67	Spike	P	0 - 30
2002261	Endosulfan II	7.75	Spike	P	0 - 30
2002261	Endosulfan Sulfate	1.40	Spike	P	0 - 30
2002261	Endrin	4.63	Spike	P	0 - 30
2002261	Endrin Aldehyde	3.77	Spike	P	0 - 30
2002261	Endrin Ketone	1.70	Spike	P	0 - 30
2002261	Gamma-BHC	4.61	Spike	P	0 - 30
2002261	Gamma-Chlordane	7.25	Spike	P	0 - 30
2002261	Heptachlor	3.86	Spike	P	0 - 30
2002261	Heptachlor Epoxide	7.01	Spike	P	0 - 30
2002261	Methoxychlor	3.78	Spike	P	0 - 30
2002261	Mirex	0.289	Spike	P	0 - 30
2002261	Permethrin	0.258	Spike	P	0 - 30
2002261	Trifluralin	0.305	Spike	P	0 - 30
LFB	Aldrin	24.6	LCS	P	0 - 30
LFB	Alpha-BHC	5.51	LCS	P	0 - 30
LFB	Alpha-Chlordane	13.5	LCS	P	0 - 30
LFB	Beta-BHC	17.7	LCS	P	0 - 30
LFB	Carbophenothion	5.35	LCS	P	0 - 30
LFB	Chlorothalonil	18.8	LCS	P	0 - 30
LFB	Cypermethrin	2.32	LCS	P	0 - 30
LFB	DDD-p,p'	3.92	LCS	P	0 - 30
LFB	DDE-p,p'	17.8	LCS	P	0 - 30
LFB	DDT-p,p'	12.4	LCS	P	0 - 30
LFB	Delta-BHC	14.6	LCS	P	0 - 30
LFB	Dicofol	10.5	LCS	P	0 - 30
LFB	Dieldrin	6.54	LCS	P	0 - 30
LFB	Endosulfan I	2.26	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P347978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Endosulfan II	3.61	LCS	P	0 - 30
LFB	Endosulfan Sulfate	1.43	LCS	P	0 - 30
LFB	Endrin	15.1	LCS	P	0 - 30
LFB	Endrin Aldehyde	4.48	LCS	P	0 - 30
LFB	Endrin Ketone	0.195	LCS	P	0 - 30
LFB	Gamma-BHC	14.6	LCS	P	0 - 30
LFB	Gamma-Chlordane	16.9	LCS	P	0 - 30
LFB	Heptachlor	26.1	LCS	P	0 - 30
LFB	Heptachlor Epoxide	8.61	LCS	P	0 - 30
LFB	Methoxychlor	10.1	LCS	P	0 - 30
LFB	Mirex	21.6	LCS	P	0 - 30
LFB	Permethrin	13.8	LCS	P	0 - 30
LFB	Trifluralin	14.2	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P347978

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004657	Chlordane	4.30	Spike	P	0 - 30
2004657	Toxaphene	2.55	Spike	P	0 - 30
LFB	Chlordane	10.4	LCS	P	0 - 30
LFB	Toxaphene	19.5	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004655	3-Hydroxycarbofuran	0.783	Spike	P	0 - 30
2004655	Aldicarb	0.745	Spike	P	0 - 30
2004655	Aldicarb Sulfone	1.47	Spike	P	0 - 30
2004655	Aldicarb Sulfoxide	0.386	Spike	P	0 - 30
2004655	Carbaryl	2.15	Spike	P	0 - 30
2004655	Carbofuran	0.334	Spike	P	0 - 30
2004655	Methiocarb	4.76	Spike	P	0 - 30
2004655	Methomyl	3.25	Spike	P	0 - 30
2004655	Oxamyl	3.96	Spike	P	0 - 30
2004655	Propoxur	0.816	Spike	P	0 - 30
2004656	2,4-D	16.9	Spike	P	0 - 30
2004656	Acetaminophen	3.18	Spike	P	0 - 30
2004656	Bentazon	8.09	Spike	P	0 - 30
2004656	Carbamazepine	2.27	Spike	P	0 - 30
2004656	Diuron	11.0	Spike	P	0 - 30
2004656	Fenuron	0.956	Spike	P	0 - 30
2004656	Fluridone	13.6	Spike	P	0 - 30
2004656	Hydrocodone	0.644	Spike	P	0 - 30
2004656	Ibuprofen	0.727	Spike	P	0 - 30
2004656	Imazapyr	0.858	Spike	P	0 - 30
2004656	Imidacloprid	4.51	Spike	P	0 - 30
2004656	Linuron	27.3	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P347840

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004656	MCPP	13.7	Spike	P	0 - 30
2004656	Naproxen	5.37	Spike	P	0 - 30
2004656	Primidone	3.96	Spike	P	0 - 30
2004656	Pyraclostrobin	5.25	Spike	P	0 - 30
2004656	Triclopyr	10.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P347901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004656	Acesulfame K	10.9	Spike	P	0 - 30
2004656	AMPA	5.05	Spike	P	0 - 30
2004656	Endothall	2.13	Spike	P	0 - 30
2004656	Glufosinate	0.491	Spike	P	0 - 30
2004656	Glyphosate	4.04	Spike	P	0 - 30
2004656	Sucralose	6.92	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P347937

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004650	Color (true)	1.87	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P348125

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Total Alkalinity	0.252	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P348461

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004591	TDS	7.58	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P348126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004538	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P348454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P348454

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2004540	Organic Carbon	0.735	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: 2004655
Field Sample ID: G4NW0424

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbaryl-d7	55.9	P	30 - 160

Lab Sample ID: 2004656
Field Sample ID: G4NW0424

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	99.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	63.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.8	P	30 - 160
EPA 8321B	Diuron-d6	56.8	P	30 - 160
EPA 8321B	Endothall-d6	96.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	93.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	73.8	P	40 - 160
EPA 8321B	Primidone-d5	61.5	P	30 - 160
EPA 8321B	Sucralose-d6	87.7	P	40 - 160

Lab Sample ID: 2004657
Field Sample ID: G4NW0424

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	68.3	P	37 - 117
EPA 8270D	Tetrachloro-m-xylene	58.0	P	34 - 101
EPA 8276	Decachlorobiphenyl	63.9	P	31 - 108
EPA 8276	PCNB	85.2	P	62 - 142

Lab Sample ID: 2004658
Field Sample ID: G4NW0424

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	91.5	P	71 - 126
EPA 8270D	Terbufos-d10	91.4	P	59 - 149

Quality Assurance Report
Calibration Verification

Reference Method: SM 2120 B
Run ID: A85012
Included Lab Sample IDs: 2004650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A85014
Included Lab Sample IDs: 2004650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	98.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A85036
Included Lab Sample IDs: 2004652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	94.3	94.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A85064
Included Lab Sample IDs: 2004656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	126	110	P/P	60 - 150
AMPA	99.8	95.5	P/P	60 - 150
Endothall	106	97.5	P/P	60 - 150
Glufosinate	122	125	P/P	60 - 150
Glyphosate	123	114	P/P	60 - 150
Sucralose	80.7	81.2	P/P	60 - 150

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A85067
Included Lab Sample IDs: 2004659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.3	96.4	P/P	90 - 110
Cadmium	95.5	96.8	P/P	90 - 110
Chromium	96.2	96.9	P/P	90 - 110
Copper	96.6	96.2	P/P	90 - 110
Lead	95.8	95.6	P/P	90 - 110
Nickel	96.9	96.6	P/P	90 - 110
Silver	96.7	98.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A85082
Included Lab Sample IDs: 2004659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	106	109	P/P	90 - 110
Iron	105	108	P/P	90 - 110
Magnesium	105	108	P/P	90 - 110
Potassium	100	105	P/P	90 - 110
Sodium	98.5	103	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A85082
Included Lab Sample IDs: 2004659

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

Reference Method: EPA 8321B
Run ID: A85102
Included Lab Sample IDs: 2004656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	79.2	92.1	P/P	50 - 150
3-Hydroxycarbofuran	80.2	82.5	P/P	50 - 150
Acetaminophen	74.6	73.2	P/P	60 - 160
Aldicarb	103	107	P/P	60 - 150
Aldicarb Sulfone	77.3	80.2	P/P	50 - 150
Aldicarb Sulfoxide	88.8	86.6	P/P	50 - 150
Bentazon	115	119	P/P	50 - 150
Carbamazepine	89.4	85.5	P/P	60 - 160
Carbaryl	83.4	83.6	P/P	60 - 150
Carbofuran	86.3	84.2	P/P	50 - 150
Diuron	90.7	91.7	P/P	60 - 150
Fenuron	85.8	88.1	P/P	60 - 150
Fluridone	99.5	105	P/P	60 - 160
Hydrocodone	83.0	81.3	P/P	60 - 150
Ibuprofen	90.2	126	P/P	50 - 150
Imazapyr	71.5	63.5	P/P	50 - 150
Imidacloprid	74.4	70.6	P/P	60 - 150
Linuron	82.7	80.2	P/P	60 - 150
MCPP	78.5	87.6	P/P	50 - 150
Methiocarb	79.0	84.9	P/P	50 - 150
Methomyl	87.8	86.0	P/P	50 - 150
Naproxen	72.4	88.4	P/P	60 - 150
Oxamyl	87.5	83.5	P/P	50 - 150
Primidone	72.6	62.9	P/P	60 - 150
Propoxur	87.4	84.4	P/P	50 - 150
Pyraclostrobin	97.9	96.9	P/P	60 - 150
Triclopyr	81.4	86.5	P/P	50 - 160

Reference Method: SM 2320 B-97
Run ID: A85107
Included Lab Sample IDs: 2004650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A85107
Included Lab Sample IDs: 2004650

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A85110
Included Lab Sample IDs: 2004651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A85130
Included Lab Sample IDs: 2004651

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

Reference Method: EPA 8276
Run ID: A85158
Included Lab Sample IDs: 2004657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	86.3		P	80 - 120
Toxaphene	92.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A85187
Included Lab Sample IDs: 2004650

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.0	97.5	P/P	90 - 110
Sulfate	95.3	95.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A85188
Included Lab Sample IDs: 2004651

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85189
Included Lab Sample IDs: 2004651

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

Reference Method: EPA 8270D
Run ID: A85196
Included Lab Sample IDs: 2004657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	95.5		P	80 - 120
Alpha-BHC	101		P	80 - 120
Alpha-Chlordane	93.4		P	80 - 120
Beta-BHC	91.5		P	80 - 120
Carbophenothion	89.9		P	80 - 120
Chlorothalonil	92.4		P	80 - 120
Cypermethrin	88.0		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A85196
Included Lab Sample IDs: 2004657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDD-p,p'	91.9		P	80 - 120
DDE-p,p'	98.3		P	80 - 120
DDT-p,p'	115		P	80 - 120
Delta-BHC	98.9		P	80 - 120
Dicofol	115		P	80 - 120
Dieldrin	100		P	80 - 120
Endosulfan I	95.6		P	80 - 120
Endosulfan II	92.9		P	80 - 120
Endosulfan Sulfate	91.7		P	80 - 120
Endrin	100		P	80 - 120
Endrin Aldehyde	92.1		P	80 - 120
Endrin Ketone	95.5		P	80 - 120
Gamma-BHC	99.2		P	80 - 120
Gamma-Chlordane	93.2		P	80 - 120
Heptachlor	96.9		P	80 - 120
Heptachlor Epoxide	96.1		P	80 - 120
Methoxychlor	101		P	80 - 120
Mirex	98.1		P	80 - 120
Permethrin	100		P	80 - 120
Trifluralin	97.7		P	80 - 120

Reference Method: EPA 8270D
Run ID: A85234
Included Lab Sample IDs: 2004658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	98.5		P	80 - 120
Alachlor	100		P	80 - 120
Ametryn	99.7		P	80 - 120
Atrazine	96.7		P	80 - 120
Atrazine Desethyl	93.9		P	80 - 120
Azinphos Methyl	100		P	80 - 120
Bromacil	102		P	80 - 120
Butylate	97.2		P	80 - 120
Chlorpyrifos Ethyl	95.0		P	80 - 120
Chlorpyrifos Methyl	95.6		P	80 - 120
Cyanazine	93.7		P	80 - 120
Demeton	103		P	80 - 120
Diazinon	97.5		P	80 - 120
Disulfoton	97.7		P	80 - 120
EPTC	99.0		P	80 - 120
Ethion	95.5		P	80 - 120
Ethoprop	95.4		P	80 - 120
Fenamiphos	93.8		P	80 - 120
Fipronil	95.4		P	80 - 120
Fipronil Sulfide	94.7		P	80 - 120
Fipronil Sulfone	93.9		P	80 - 120
Fonofos	95.7		P	80 - 120
Hexazinone	96.4		P	80 - 120
Malathion	97.7		P	80 - 120
Metalaxyl	100		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A85234
Included Lab Sample IDs: 2004658

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Metolachlor	103		P	80 - 120
Metribuzin	88.8		P	80 - 120
Mevinphos	96.7		P	80 - 120
Molinate	99.6		P	80 - 120
Norflurazon	95.3		P	80 - 120
Parathion Ethyl	94.0		P	80 - 120
Parathion Methyl	95.0		P	80 - 120
Pendimethalin	94.0		P	80 - 120
Phorate	96.4		P	80 - 120
Prometon	97.4		P	80 - 120
Prometryn	100		P	80 - 120
Simazine	95.3		P	80 - 120
Terbufos	94.0		P	80 - 120
Terbuthylazine	95.8		P	80 - 120

Reference Method: SM 5310 B-00
Run ID: A85235
Included Lab Sample IDs: 2004651

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.4	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		
						LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.32	
EPA 200.7 Rev. 4.4	Calcium	107		109				1.31
	Iron	104		104	106			1.62
	Magnesium	106		107	109			1.42
	Potassium	99.1		99.2	102			2.39
	Sodium	97.7		95.8	98.1			1.19
	Zinc	95.8		101	101			0.258
EPA 200.8 Rev. 5.4	Arsenic	95.4		95.4	94.5			0.905
	Cadmium	96.9		99.2	98.0			1.21
	Chromium	93.9		94.9	95.4			0.554
	Copper	93.7		92.9	93.1			0.219
	Lead	93.0		94.1	92.6			1.63
	Nickel	96.1		94.5	95.0			0.523
	Silver	111		110	110			0.220
EPA 300.0 Rev. 2.1	Chloride	94.2		90.7	97.5			5.78
	Sulfate	93.6		91.0	97.8			7.14
EPA 350.1 Rev. 2.0	Ammonia-N	101		102	100			1.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103		102	103			0.735
EPA 353.2 Rev. 2.0	NO2NO3-N	100		101	102			0.240
EPA 365.1 Rev. 2.0	Total-P	98.8		100	95.4			4.11
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100		91.6	93.1			1.45
EPA 8270D	Acetochlor	91.7	92.8	91.7	91.4	1.13		0.345
	Alachlor	92.1	92.6	98.8	93.4	0.570		5.57
	Aldrin	44.0	56.3	64.0	57.9	24.6		9.98
	Alpha-BHC	90.5	95.6	89.9	90.3	5.51		0.456
	Alpha-Chlordane	73.1	83.7	83.7	77.8	13.5		7.31
	Ametryn	96.3	102	101	90.2	5.36		11.4
	Atrazine	90.6	93.5	102	97.7	3.16		3.86
	Atrazine Desethyl	88.2	87.1	73.9	63.1	1.17		15.8
	Azinphos Methyl	106	103	111	110	2.35		1.57
	Beta-BHC	134	112	123	135	17.7		9.66
	Bromacil	85.5	83.4	80.3	68.8	2.47		15.5
	Butylate	43.6	55.1	52.2	56.0	23.3		7.02
	Carbophenothion	71.4	67.7	98.1	101	5.35		3.28
	Chlorothalonil	69.7	84.2	127	124	18.8		2.86
	Chlorpyrifos Ethyl	79.1	90.6	89.0	89.3	13.4		0.384
	Chlorpyrifos Methyl	83.4	91.7	83.6	83.7	9.40		0.147
	Cyanazine	125	124	114	89.3	1.20		23.9
	Cypermethrin	75.5	77.3	88.7	93.6	2.32		5.38
	DDD-p,p'	94.8	98.6	93.3	91.7	3.92		1.73
	DDE-p,p'	74.3	88.8	87.6	82.4	17.8		6.17
	DDT-p,p'	86.6	98.0	94.4	94.1	12.4		0.382
	Delta-BHC	140	121	156	168	14.6		7.39
	Demeton	69.0	76.7	75.8	77.4	10.7		2.00
	Diazinon	99.4	101	107	101	1.56		6.24
	Dicofol	87.9	97.6	101	96.6	10.5		4.00
	Dieldrin	85.0	90.7	98.5	89.3	6.54		9.79
	Disulfoton	84.8	86.4	93.3	88.5	1.95		5.30
	Endosulfan I	83.5	85.4	110	99.5	2.26		9.67
	Endosulfan II	101	97.5	119	110	3.61		7.75
	Endosulfan Sulfate	103	101	99.6	101	1.43		1.40
	Endrin	85.8	99.8	101	96.4	15.1		4.63
	Endrin Aldehyde	103	107	71.9	74.6	4.48		3.77
	Endrin Ketone	101	101	101	103	0.195		1.70

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	EPTC	42.5	47.4	47.3	52.0	10.8		9.37
	Ethion	78.6	74.1	69.9	67.8	5.97		3.11
	Ethoprop	76.2	78.9	90.2	82.8	3.44		8.63
	Fenamiphos	91.3	91.4	86.8	123	0.0315		34.8
	Fipronil	88.7	84.9	84.3	76.7	4.42		9.46
	Fipronil Sulfide	74.3	77.7	70.0	63.8	4.53		9.26
	Fipronil Sulfone	73.4	70.7	62.2	52.3	3.63		17.3
	Fonofos	82.6	89.6	97.0	95.3	8.16		1.83
	Gamma-BHC	117	101	111	116	14.6		4.61
	Gamma-Chlordane	67.2	79.6	80.4	74.7	16.9		7.25
	Heptachlor	56.5	73.4	68.4	65.8	26.1		3.86
	Heptachlor Epoxide	82.0	89.4	91.4	85.2	8.61		7.01
	Hexazinone	85.6	94.2	94.9	82.9	9.51		13.5
	Malathion	78.2	86.5	75.7	73.4	10.1		2.96
	Metalaxyl	89.9	90.9	89.5	85.7	1.08		4.31
	Methoxychlor	90.2	99.7	86.5	89.9	10.1		3.78
	Metolachlor	90.0	90.8	90.2	87.7	0.804		2.70
	Metribuzin	112	138	144	139	20.7		3.72
	Mevinphos	65.9	77.1	83.4	83.5	15.6		0.0651
	Mirex	56.3	70.0	73.0	72.7	21.6		0.289
	Molinate	53.7	60.3	66.5	67.2	11.5		1.09
	Norflurazon	87.7	81.7	66.7	53.1	7.15		22.6
	Parathion Ethyl	81.6	87.0	85.5	79.6	6.42		7.10
	Parathion Methyl	88.5	94.8	91.9	89.3	6.93		2.84
	Pendimethalin	101	105	112	106	4.38		5.54
	Permethrin	73.2	84.1	92.5	92.8	13.8		0.258
	Phorate	81.3	74.3	86.4	91.8	8.94		6.07
	Prometon	83.2	84.7	97.8	95.5	1.87		2.39
	Prometryn	89.1	89.9	95.7	91.8	0.938		4.18
	Simazine	90.9	97.6	101	93.0	7.08		8.21
	Terbufos	81.1	89.0	98.2	94.1	9.35		4.19
	Terbuthylazine	85.1	88.8	93.4	89.1	4.25		4.62
	Trifluralin	74.6	86.0	81.8	81.5	14.2		0.305
EPA 8276	Chlordane	83.0	92.1	74.2	71.1	10.4		4.30
	Toxaphene	73.2	89.1	58.8	57.3	19.5		2.55
EPA 8321B	2,4-D	59.9		95.6	78.7			16.9
	3-Hydroxycarbofuran	72.5		73.2	72.6			0.783
	Acesulfame K	60.6		68.3	76.2			10.9
	Acetaminophen	66.2		75.6	78.1			3.18
	Aldicarb	88.1		76.9	77.4			0.745
	Aldicarb Sulfone	74.5		69.7	70.8			1.47
	Aldicarb Sulfoxide	79.0		24.0	24.1			0.386
	AMPA	77.3		97.8	93.0			5.05
	Bentazon	78.6		65.4	59.8			8.09
	Carbamazepine	78.3		76.3	74.5			2.27
	Carbaryl	63.4		53.8	52.7			2.15
	Carbofuran	70.0		57.6	57.4			0.334
	Diuron	74.9		71.8	64.3			11.0
	Endothall	107		129	126			2.13
	Fenuron	91.0		83.1	82.3			0.956
	Fluridone	90.2		89.7	78.2			13.6
	Glufosinate	99.9		96.6	96.1			0.491
	Glyphosate	94.7		94.0	97.9			4.04
	Hydrocodone	79.6		88.7	89.2			0.644

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Ibuprofen	91.1	81.8	81.2			0.727
	Imazapyr	65.1	95.8	96.7			0.858
	Imidacloprid	74.8	129	137			4.51
	Linuron	53.2	54.1	41.2			27.3
	MCPP	110	150	130			13.7
	Methiocarb	56.3	47.1	44.9			4.76
	Methomyl	81.0	74.7	77.2			3.25
	Naproxen	63.3	84.3	88.9			5.37
	Oxamyl	84.6	78.3	75.3			3.96
	Primidone	68.0	76.5	79.5			3.96
	Propoxur	74.7	62.0	61.5			0.816
	Pyraclostrobin	81.7	83.4	79.1			5.25
	Sucralose	96.2	71.0	76.1			6.92
	Triclopyr	95.4	143	129			10.7
SM 2120 B	Color (true)	99.2				1.87	
SM 2320 B-97	Total Alkalinity	104				0.252	
SM 2540 C-97	TDS					7.58	
SM 4500 F-C-97	Fluoride	99.3	98.0	98.0			0.0
SM 5310 B-00	Organic Carbon	97.4	97.0	97.7			0.735

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2004650
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2004659
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2004659
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2004650
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2004650
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2004651
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2004651
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2004651
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2004651
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2004652
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	2004657
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	2004658
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2004657
EPA 8321B / E31780	Carbamates in water matrices by HPLC/MS/MS	2004655
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2004656
SM 2120 B / E31780	True Color measured at 450 nm	2004650
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2004650
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2004650
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2004650
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2004650

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2004651

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	07/03/2018			07/03/2018 14:00	William L. Brown IV	2004650
EPA 200.7 Rev. 4.4	07/03/2018	07/05/2018 14:50	Elliott D. Healy	07/09/2018 12:55	Betina Topolski	2004659
EPA 200.8 Rev. 5.4	07/03/2018	07/05/2018 14:50	Elliott D. Healy	07/06/2018 19:24	Robert K Palmer	2004659
EPA 300.0 Rev. 2.1	07/03/2018			07/11/2018 18:00	Lipi Saha	2004650
EPA 350.1 Rev. 2.0	07/03/2018			07/12/2018 12:35	Ping Hua	2004651
EPA 351.2 Rev. 2.0	07/03/2018	07/10/2018 15:30	Adrian Shelby	07/12/2018 14:57	Joseph Suarez	2004651
EPA 353.2 Rev. 2.0	07/03/2018			07/09/2018 13:34	Lauren Bottorf	2004651
EPA 365.1 Rev. 2.0	07/03/2018	07/09/2018 12:30	Lipi Saha	07/10/2018 12:07	Beverly Y. Sanders	2004651
EPA 365.1 Rev. 2.0 dissolved	07/03/2018			07/03/2018 17:29	Megan Treadwell	2004652
EPA 8270D	07/03/2018	07/03/2018 11:00	Dinesh Mishra	07/11/2018 15:37	Vandana T. Nagar	2004658
	07/03/2018	07/09/2018 08:00	Fe-Val Siddell	07/12/2018 23:07	Dinesh Mishra	2004657
EPA 8276	07/03/2018	07/09/2018 08:00	Fe-Val Siddell	07/11/2018 17:50	Dinesh Mishra	2004657
EPA 8321B	07/03/2018	07/07/2018 17:15	Mohammad Ghaffari	07/07/2018 21:28	Mohammad Ghaffari	2004656
	07/03/2018	07/07/2018 17:15	Mohammad Ghaffari	07/08/2018 12:51	Mohammad Ghaffari	2004656
	07/03/2018	07/09/2018 10:00	Hoor Shaik	07/09/2018 18:07	Juyoung Kim	2004656
	07/03/2018	07/09/2018 10:00	Hoor Shaik	07/10/2018 03:20	Juyoung Kim	2004655
	07/03/2018	07/09/2018 10:00	Hoor Shaik	07/10/2018 05:04	Juyoung Kim	2004656
SM 2120 B	07/03/2018			07/03/2018 16:21	Tanya Welborn	2004650
SM 2320 B-97	07/03/2018			07/10/2018 01:44	Dale L. Simmons	2004650
SM 2540 C-97	07/03/2018			07/05/2018 16:21	Yijie Li	2004650
SM 2540 D-97	07/03/2018			07/05/2018 16:21	Yijie Li	2004650
SM 4500 F-C-97	07/03/2018			07/10/2018 01:44	Dale L. Simmons	2004650
SM 5310 B-00	07/03/2018			07/12/2018 22:42	Megan Treadwell	2004651