Chemical Analysis Report

WAS-SECT-2021-07-20-01

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

Event Description: **Wakulla BMAP**
Request ID: **RQ-2021-07-19-02**
Customer: **WAS-SECT**
Project ID: **BMAP**

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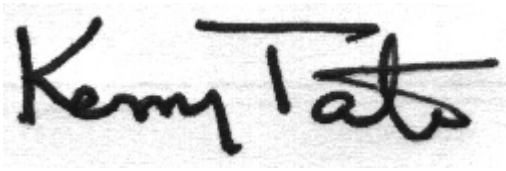
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 16-AUG-2021 13:16



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: Wakulla River at Boat Tram **Collection Date/Time: 07/20/2021 12:11**

Field ID: 44059 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263577	EPA 180.1 Rev. 2.0	Turbidity	0.45		NTU	P401342	
	EPA 300.0 Rev. 2.1	Chloride	8.8		mg Cl/L	P401681	
		Sulfate	11		mg SO4/L	P401684	
	SM 2120 B-2011	Color (true)	6.8		PCU	P401339	
	SM 2320 B-2011	Total Alkalinity	144		mg CaCO3/L	P401464	
	SM 2540 C-2011	TDS	174	A	mg/L	P401796	
	SM 2540 D-2011	TSS	2	UA	mg/L	P401801	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P401468	
2263578	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P401707	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.091	I	mg N/L	P401926	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P401380	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P401546	
	SM 5310 B-2011	Organic Carbon	1.0		mg C/L	P402093	
2263579	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P401242	
2263582	EPA 8321B	2,4-D	0.0020	U	ug/L	P401291	
		Acesulfame K	0.10	U	ug/L	P401256	
		2,4,5-T	0.0040	U	ug/L	P401291	
		AMPA	0.10	U	ug/L	P401256	
		Acetaminophen	0.0080	U	ug/L	P401291	
		Acetamiprid	0.0020	U	ug/L	P401291	
		Endothall	0.25	U	ug/L	P401256	
		Glufosinate	0.10	U	ug/L	P401256	
		Glyphosate	0.10	U	ug/L	P401256	
		Afidopyropen	0.0020	U	ug/L	P401291	
		Bentazon	8.0E-04	U	ug/L	P401291	
		Sucralose	0.053		ug/L	P401256	
		Benzovindiflupyr	0.0020	U	ug/L	P401291	
		Carbamazepine	8.0E-04	U	ug/L	P401291	
		Clothianidin	0.0020	U	ug/L	P401291	
		Dinotefuran	0.0020	U	ug/L	P401291	
		Diuron	0.0020	U	ug/L	P401291	
		Fenuron	0.016	U	ug/L	P401291	
		Fluridone	8.0E-04	U	ug/L	P401291	
		Imazapyr	0.0040	U	ug/L	P401291	
		Hydrocodone	0.0020	U	ug/L	P401291	
		Ibuprofen	0.020	U	ug/L	P401291	
		Imidacloprid	0.0020	U	ug/L	P401291	
		Linuron	0.0040	U	ug/L	P401291	
		Mandestrobin	0.0020	U	ug/L	P401291	
		MCPP	0.0020	U	ug/L	P401291	
		Naproxen	0.0080	U	ug/L	P401291	
		Primidone	0.0040	U	ug/L	P401291	
		Pyraclostrobin	0.0020	U	ug/L	P401291	

Field ID: 44059 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263582	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P401291	
		Tolfenpyrad	0.0020	U	ug/L	P401291	
		Triclopyr	0.0040	U	ug/L	P401291	
2263583	EPA 200.7 Rev. 4.4	Calcium	49.5		mg/L	P401538	
		Iron	30	U	ug/L	P401538	
		Magnesium	11.0		mg/L	P401538	
		Potassium	0.69	I	mg/L	P401538	
		Sodium	6.2		mg/L	P401538	
		Strontium	119		ug/L	P401538	
		Tin	3.0	U	ug/L	P401538	
		Titanium	0.99	I	ug/L	P401538	
		Vanadium	2.7	I	ug/L	P401538	
		Zinc	5.2	I	ug/L	P401538	
	EPA 200.8 Rev. 5.4	Aluminum	14	I	ug/L	P401538	
		Antimony	0.050	U	ug/L	P401538	
		Arsenic	0.68		ug/L	P401538	
		Barium	12.5		ug/L	P401538	
		Beryllium	0.010	U	ug/L	P401538	
		Boron**	18.2		ug/L	P401538	
		Cadmium	0.022	I	ug/L	P401538	
		Chromium	0.95	I	ug/L	P401538	
		Cobalt	0.027	I	ug/L	P401538	
		Copper	0.40	U	ug/L	P401538	
		Lead	0.20	U	ug/L	P401538	
		Manganese	1.96		ug/L	P401538	
		Molybdenum	1.63		ug/L	P401538	
		Nickel	0.50	U	ug/L	P401538	
		Selenium	0.52	I	ug/L	P401538	
		Silver	0.010	U	ug/L	P401538	
		Thallium	0.10	U	ug/L	P401538	
	SM 2340B	Hardness	169		mg/L	P401538	
2263584	EPA 8270E	Acetochlor	0.24	U	ng/L	P401556	
		Alachlor	0.24	U	ng/L	P401556	
		Ametryn	0.58	U	ng/L	P401556	
		Atrazine	0.61	I	ng/L	P401556	
		Atrazine Desethyl	3.0	I	ng/L	P401556	
		Azinphos Methyl	1.9	U	ng/L	P401556	
		Azoxystrobin**	0.49	U	ng/L	P401556	
		Bromacil	0.49	U	ng/L	P401556	
		Butylate	0.39	U	ng/L	P401556	
		Caffeine**	7.3	U	ng/L	P401556	
		Carbophenothion	0.49	U	ng/L	P401556	
		Carfentrazone Ethyl**	0.097	U	ng/L	P401556	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P401556	
		Chlorpyrifos Methyl	0.049	U	ng/L	P401556	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263584	EPA 8270E	Cyanazine	3.2	U	ng/L	P401556	
		Demeton	1.5	U	ng/L	P401556	
		Diazinon	0.12	U	ng/L	P401556	
		Difenoconazole**	0.58	U	ng/L	P401556	
		Dimethenamid**	0.097	U	ng/L	P401556	
		Disulfoton	0.49	U	ng/L	P401556	
		Dithiopyr**	0.17	U	ng/L	P401556	
		EPTC	1.2	U	ng/L	P401556	
		Ethion	0.15	U	ng/L	P401556	
		Ethoprop	0.097	U	ng/L	P401556	
		Fenamiphos	0.49	U	ng/L	P401556	
		Fenbuconazole**	0.12	U	ng/L	P401556	
		Fipronil	0.24	U	ng/L	P401556	
		Fipronil Desulfinyl**	0.12	U	ng/L	P401556	
		Fipronil Sulfide	0.15	U	ng/L	P401556	
		Fipronil Sulfone	0.15	U	ng/L	P401556	
		Fluazifop-P-butyl**	0.097	U	ng/L	P401556	
		Fludioxonil**	0.12	U	ng/L	P401556	
		Flumioxazin**	1.7	U	ng/L	P401556	
		Flutolanil**	0.097	U	ng/L	P401556	
		Fluxapyroxad**	0.097	U	ng/L	P401556	
		Fonofos	0.19	UJ	ng/L	P401556	RPD
		Hexazinone	1.0	I	ng/L	P401556	
		Imazalil**	0.73	UJ	ng/L	P401556	RPD
		Iprodione**	0.58	U	ng/L	P401556	
		Malathion	0.34	U	ng/L	P401556	
		Metalaxyl	0.73	U	ng/L	P401556	
		Metolachlor	0.34	U	ng/L	P401556	
		Metribuzin	3.2	U	ng/L	P401556	
		Mevinphos	1.0	U	ng/L	P401556	
		Molinate	0.29	U	ng/L	P401556	
		Myclobutanil**	0.24	U	ng/L	P401556	
		Naled**	1.5	UJ	ng/L	P401556	LCS
		Norflurazon	0.49	U	ng/L	P401556	
		Oxadiazon	0.29	U	ng/L	P401556	
		Oxyfluorfen**	0.15	U	ng/L	P401556	
		Parathion Ethyl	0.24	U	ng/L	P401556	
		Parathion Methyl	0.54	U	ng/L	P401556	
		Pendimethalin	0.97	U	ng/L	P401556	
		Phorate	0.51	U	ng/L	P401556	
		Prodiamine**	0.17	U	ng/L	P401556	
		Prometon	0.88	U	ng/L	P401556	
		Prometryn	0.19	U	ng/L	P401556	
		Pronamide**	0.15	U	ng/L	P401556	
		Propiconazole**	0.49	U	ng/L	P401556	

Field ID: 44059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2263584	EPA 8270E	Pyriproxyfen**	0.12	U	ng/L	P401556	
		Simazine	2.3		ng/L	P401556	
		Sulfentrazone**	0.49	U	ng/L	P401556	
		Tebuconazole**	0.49	U	ng/L	P401556	
		Terbufos	0.097	U	ng/L	P401556	
		Terbuthylazine	0.41	U	ng/L	P401556	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401342

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401681

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401684

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401707

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401380

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401242

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

Reference Method: EPA 8270E
Batch ID: P401556

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.0	U	ng/L
Azinphos Methyl	2.0	U	ng/L
Azoxystrobin	0.50	U	ng/L
Azoxystrobin	0.50	U	ng/L
Bromacil	0.50	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Butylate	0.40	U	ng/L
Caffeine	7.5	U	ng/L
Caffeine	7.5	U	ng/L
Carbophenothion	0.50	U	ng/L
Carbophenothion	0.50	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P401556

Component	Result	Code	Units
Carfentrazone Ethyl	0.10	U	ng/L
Carfentrazone Ethyl	0.10	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.050	U	ng/L
Chlorpyrifos Methyl	0.050	U	ng/L
Cyanazine	3.2	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	1.5	U	ng/L
Demeton	1.5	U	ng/L
Diazinon	0.12	U	ng/L
Diazinon	0.12	U	ng/L
Difenoconazole	0.60	U	ng/L
Difenoconazole	0.60	U	ng/L
Dimethenamid	0.10	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.18	U	ng/L
Dithiopyr	0.18	U	ng/L
EPTC	1.2	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fenamiphos	0.50	U	ng/L
Fenbuconazole	0.12	U	ng/L
Fenbuconazole	0.12	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fluazifop-P-butyl	0.10	U	ng/L
Fluazifop-P-butyl	0.10	U	ng/L
Fludioxonil	0.12	U	ng/L
Fludioxonil	0.12	U	ng/L
Flumioxazin	1.8	U	ng/L
Flumioxazin	1.8	U	ng/L
Flutolanil	0.10	U	ng/L
Flutolanil	0.10	U	ng/L
Fluxapyroxad	0.10	U	ng/L
Fluxapyroxad	0.10	U	ng/L
Fonofos	0.20	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Hexazinone	0.50	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P401556

Component	Result	Code	Units
Imazalil	0.75	U	ng/L
Imazalil	0.75	U	ng/L
Iprodione	0.60	U	ng/L
Iprodione	0.60	U	ng/L
Malathion	0.35	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.75	U	ng/L
Metalaxyl	0.75	U	ng/L
Metolachlor	0.35	U	ng/L
Metolachlor	0.35	U	ng/L
Metribuzin	3.2	U	ng/L
Metribuzin	3.2	U	ng/L
Mevinphos	1.0	U	ng/L
Mevinphos	1.0	U	ng/L
Molinate	0.30	U	ng/L
Molinate	0.30	U	ng/L
Myclobutanil	0.25	U	ng/L
Myclobutanil	0.25	U	ng/L
Naled	1.5	U	ng/L
Naled	1.5	U	ng/L
Norflurazon	0.50	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.30	U	ng/L
Oxadiazon	0.30	U	ng/L
Oxyfluorfen	0.15	U	ng/L
Oxyfluorfen	0.15	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.52	U	ng/L
Phorate	0.52	U	ng/L
Prodiamine	0.18	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Prometryn	0.20	U	ng/L
Pronamide	0.15	U	ng/L
Pronamide	0.15	U	ng/L
Propiconazole	0.50	U	ng/L
Propiconazole	0.50	U	ng/L
Pyriproxyfen	0.12	U	ng/L
Pyriproxyfen	0.12	U	ng/L
Simazine	0.50	U	ng/L
Simazine	0.50	U	ng/L
Sulfentrazone	0.50	U	ng/L
Sulfentrazone	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P401556

Component	Result	Code	Units
Terbufos	0.10	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P401256

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P401291

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P401339

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P401464

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

Reference Method: SM 2540 C-2011
Batch ID: P401796

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P401801

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P401468

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P402093

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: P401538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	108		P	85 - 115
Magnesium	111		P	85 - 115
Potassium	103		P	85 - 115
Sodium	107		P	85 - 115
Strontium	102		P	85 - 115
Tin	101		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	96.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	115		P	80 - 120
Antimony	117		P	80 - 120
Arsenic	115		P	80 - 120
Barium	118		P	80 - 120
Beryllium	111		P	80 - 120
Boron	111		P	80 - 120
Cadmium	113		P	80 - 120
Chromium	111		P	80 - 120
Cobalt	105		P	85 - 115
Copper	114		P	80 - 120
Lead	114		P	80 - 120
Manganese	114		P	80 - 120
Molybdenum	116		P	80 - 120
Nickel	114		P	80 - 120
Selenium	114		P	80 - 120
Silver	114		P	80 - 120
Thallium	107		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401681

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401684

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401707

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 351.2 Rev. 2.0
Batch ID: P401926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401380

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401242

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

Reference Method: EPA 8270E
Batch ID: P401556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	87.5	103	P/P	70 - 121
Alachlor	76.0	77.3	P/P	70 - 119
Ametryn	82.8	85.8	P/P	61 - 135
Atrazine	89.8	102	P/P	76 - 123
Atrazine Desethyl	96.8	99.2	P/P	35 - 140
Azinphos Methyl	101	96.7	P/P	57 - 163
Azoxystrobin	89.0	99.0	P/P	43 - 231
Bromacil	85.3	85.5	P/P	42 - 123
Butylate	38.2	43.4	P/P	34 - 92.0
Caffeine	85.6	84.0	P/P	70 - 130
Carbophenothion	80.4	86.4	P/P	61 - 121
Carfentrazone Ethyl	85.6	81.1	P/P	62 - 139
Chlorpyrifos Ethyl	78.2	84.7	P/P	67 - 121
Chlorpyrifos Methyl	84.7	104	P/P	67 - 120
Cyanazine	119	112	P/P	20 - 226
Demeton	62.8	73.4	P/P	35 - 125
Diazinon	87.5	95.8	P/P	70 - 122
Difenoconazole	161	177	P/P	56 - 186
Dimethenamid	68.6	74.5	P/P	67 - 119
Disulfoton	62.1	63.3	P/P	47 - 120
Dithiopyr	73.5	67.1	P/P	67 - 118
EPTC	43.0	46.0	P/P	33 - 90.0
Ethion	64.3	65.3	P/P	40 - 133
Ethoprop	91.6	99.0	P/P	61 - 121
Fenamiphos	58.3	65.9	P/P	31 - 139
Fenbuconazole	89.1	92.9	P/P	66 - 141
Fipronil	89.3	89.7	P/P	62 - 129
Fipronil Desulfinyl	82.4	81.8	P/P	59 - 126

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P401556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fipronil Sulfide	77.0	83.8	P/P	63 - 117
Fipronil Sulfone	77.3	91.4	P/P	57 - 117
Fluazifop-P-butyl	81.6	89.3	P/P	63 - 124
Fludioxonil	97.5	104	P/P	63 - 123
Flumioxazin	154	191	P/P	34 - 245
Flutolanil	88.0	94.1	P/P	56 - 131
Fluxapyroxad	73.3	67.1	P/P	57 - 117
Fonofos	69.2	93.9	P/P	61 - 116
Hexazinone	86.0	94.7	P/P	55 - 138
Imazalil	44.5	42.5	P/P	33 - 143
Iprodione	80.3	78.6	P/P	59 - 118
Malathion	96.4	101	P/P	62 - 138
Metalaxyl	57.4	53.2	P/P	24 - 147
Metolachlor	80.5	79.3	P/P	68 - 118
Metribuzin	97.4	95.8	P/P	20 - 239
Mevinphos	93.6	108	P/P	46 - 124
Molinate	50.8	58.4	P/P	46 - 100
Myclobutanil	76.3	83.8	P/P	32 - 149
Naled	30.3	36.0	F/P	32 - 95.0
Norflurazon	81.0	84.0	P/P	57 - 127
Oxadiazon	73.6	74.3	P/P	63 - 118
Oxyfluorfen	74.4	85.7	P/P	69 - 137
Parathion Ethyl	81.3	90.3	P/P	70 - 113
Parathion Methyl	92.9	111	P/P	71 - 130
Pendimethalin	73.1	84.1	P/P	55 - 118
Phorate	53.4	70.7	P/P	46 - 125
Prodiamine	67.8	59.9	P/P	20 - 141
Prometon	56.0	65.2	P/P	54 - 122
Prometryn	85.8	86.7	P/P	66 - 124
Pronamide	88.8	97.5	P/P	79 - 122
Propiconazole	74.8	75.2	P/P	61 - 126
Pyriproxyfen	76.3	74.4	P/P	52 - 131
Simazine	91.6	100	P/P	75 - 128
Sulfentrazone	78.3	71.9	P/P	20 - 132
Tebuconazole	43.9	39.8	P/P	20 - 116
Terbufos	83.3	101	P/P	61 - 117
Terbuthylazine	82.5	91.2	P/P	74 - 116

Reference Method: EPA 8321B
Batch ID: P401256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.8		P	40 - 150
AMPA	95.8		P	40 - 150
Endothall	93.4		P	40 - 150
Glufosinate	99.6		P	40 - 150
Glyphosate	96.1		P	40 - 150
Sucralose	83.3		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P401291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	105		P	30 - 160
2,4,5-T	104		P	30 - 160
Acetaminophen	111		P	30 - 160
Acetamiprid	82.8		P	30 - 160
Afidopyropen	59.4		P	30 - 160
Bentazon	90.5		P	30 - 160
Benzovindiflupyr	88.1		P	30 - 160
Carbamazepine	89.9		P	30 - 160
Clothianidin	94.6		P	30 - 160
Dinotefuran	90.8		P	30 - 160
Diuron	94.9		P	30 - 160
Fenuron	93.8		P	30 - 160
Fluridone	87.2		P	30 - 160
Hydrocodone	91.7		P	30 - 160
Ibuprofen	92.7		P	30 - 160
Imazapyr	108		P	30 - 160
Imidacloprid	89.4		P	30 - 160
Linuron	85.4		P	30 - 160
Mandestrobin	90.6		P	30 - 160
MCPP	103		P	30 - 160
Naproxen	72.9		P	30 - 160
Primidone	96.7		P	30 - 160
Pyraclostrobin	82.5		P	30 - 160
Thiamethoxam	89.5		P	30 - 160
Tolfenpyrad	52.6		P	30 - 160
Triclopyr	104		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P401339

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P401464

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P401468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P402093

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263583	Calcium	111		P	80 - 120
2263583	Iron	111		P	80 - 120
2263583	Magnesium	108		P	80 - 120
2263583	Potassium	104		P	80 - 120
2263583	Sodium	109		P	80 - 120
2263583	Strontium	103		P	80 - 120
2263583	Tin	101		P	80 - 120
2263583	Titanium	101		P	80 - 120
2263583	Vanadium	101		P	80 - 120
2263583	Zinc	95.1		P	80 - 120
2263836	Calcium	110	109	P/P	80 - 120
2263836	Iron	108	109	P/P	80 - 120
2263836	Magnesium	111	111	P/P	80 - 120
2263836	Potassium	107	106	P/P	80 - 120
2263836	Sodium	108	108	P/P	80 - 120
2263836	Strontium	102	102	P/P	80 - 120
2263836	Tin	101	98.4	P/P	80 - 120
2263836	Titanium	101	99.8	P/P	80 - 120
2263836	Vanadium	101	98.9	P/P	80 - 120
2263836	Zinc	96.7	95.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263583	Aluminum	107		P	80 - 120
2263583	Antimony	114		P	80 - 120
2263583	Arsenic	107		P	80 - 120
2263583	Barium	111		P	80 - 120
2263583	Beryllium	111		P	80 - 120
2263583	Boron	105		P	80 - 120
2263583	Cadmium	109		P	80 - 120
2263583	Chromium	108		P	80 - 120
2263583	Cobalt	103		P	80 - 120
2263583	Copper	103		P	80 - 120
2263583	Lead	109		P	80 - 120
2263583	Manganese	106		P	80 - 120
2263583	Molybdenum	109		P	80 - 120
2263583	Nickel	103		P	80 - 120
2263583	Selenium	103		P	80 - 120
2263583	Silver	111		P	80 - 120
2263583	Thallium	107		P	80 - 120
2263836	Aluminum	104	105	P/P	80 - 120
2263836	Antimony	110	109	P/P	80 - 120
2263836	Arsenic	103	105	P/P	80 - 120
2263836	Barium	108	108	P/P	80 - 120
2263836	Beryllium	107	108	P/P	80 - 120
2263836	Boron	104	102	P/P	80 - 120
2263836	Cadmium	106	103	P/P	80 - 120
2263836	Chromium	103	102	P/P	80 - 120
2263836	Cobalt	100	103	P/P	80 - 120
2263836	Copper	104	105	P/P	80 - 120

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263836	Lead	107	108	P/P	80 - 120
2263836	Manganese	104	104	P/P	80 - 120
2263836	Molybdenum	104	106	P/P	80 - 120
2263836	Nickel	102	103	P/P	80 - 120
2263836	Selenium	102	101	P/P	80 - 120
2263836	Silver	106	105	P/P	80 - 120
2263836	Thallium	106	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401681

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263312	Chloride	101		P	90 - 110
2263599	Chloride	98.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263312	Sulfate	95.3		P	90 - 110
2263599	Sulfate	96.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263578	Ammonia-N	97.4	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263634	Kjeldahl Nitrogen	98.8	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401380

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263486	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263485	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263579	O-Phosphate-P	97.6	99.5	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P401556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263584	Acetochlor	81.2	103	P/P	66 - 122
2263584	Alachlor	74.5	88.8	P/P	65 - 122
2263584	Ametryn	96.6	114	P/P	45 - 173
2263584	Atrazine	93.7	113	P/P	70 - 134
2263584	Atrazine Desethyl	76.6	98.2	P/P	25 - 150
2263584	Azinphos Methyl	105	124	P/P	44 - 174
2263584	Azoxystrobin	129	146	P/P	10 - 268
2263584	Bromacil	80.2	103	P/P	31 - 145
2263584	Butylate	40.0	40.2	P/P	15 - 97.0
2263584	Caffeine	91.2	90.3	P/P	70 - 130
2263584	Carbophenothion	77.8	95.4	P/P	42 - 129
2263584	Carfentrazone Ethyl	79.0	97.7	P/P	62 - 145
2263584	Chlorpyrifos Ethyl	81.4	95.3	P/P	60 - 124
2263584	Chlorpyrifos Methyl	89.5	99.2	P/P	66 - 119
2263584	Cyanazine	119	151	P/P	17 - 225
2263584	Demeton	93.5	99.7	P/P	36 - 142
2263584	Diazinon	95.3	108	P/P	70 - 128
2263584	Difenoconazole	137	173	P/P	33 - 222
2263584	Dimethenamid	60.2	75.5	P/P	54 - 125
2263584	Disulfoton	80.6	78.5	P/P	49 - 133
2263584	Dithiopyr	74.1	88.3	P/P	55 - 123
2263584	EPTC	39.9	46.8	P/P	19 - 91.0
2263584	Ethion	31.1	34.5	P/P	13 - 143
2263584	Ethoprop	97.3	106	P/P	49 - 144
2263584	Fenamiphos	73.0	80.4	P/P	32 - 136
2263584	Fenbuconazole	93.4	113	P/P	73 - 148
2263584	Fipronil	87.2	101	P/P	57 - 129
2263584	Fipronil Desulfinyl	79.2	99.1	P/P	49 - 127
2263584	Fipronil Sulfide	70.4	70.7	P/P	44 - 127
2263584	Fipronil Sulfone	65.2	80.2	P/P	35 - 126
2263584	Fluazifop-P-butyl	82.8	101	P/P	67 - 129
2263584	Fludioxonil	72.1	90.5	P/P	61 - 126
2263584	Flumioxazin	156	155	P/P	38 - 279
2263584	Flutolanil	74.5	96.0	P/P	55 - 136
2263584	Fluxapyroxad	46.6	51.7	P/P	33 - 140
2263584	Fonofos	88.3	95.3	P/P	58 - 125
2263584	Hexazinone	83.0	97.3	P/P	57 - 148
2263584	Imazalil	72.1	105	P/P	10 - 221
2263584	Iprodione	70.1	82.9	P/P	32 - 140
2263584	Malathion	92.8	109	P/P	52 - 138
2263584	Metalaxyl	82.7	100	P/P	46 - 134
2263584	Metolachlor	76.2	93.9	P/P	58 - 122
2263584	Metribuzin	102	123	P/P	16 - 272
2263584	Mevinphos	105	122	P/P	45 - 140
2263584	Molinate	57.9	56.4	P/P	41 - 103
2263584	Myclobutanil	73.9	91.3	P/P	60 - 134
2263584	Naled	24.5	29.0	P/P	20 - 113
2263584	Norflurazon	74.7	98.1	P/P	51 - 123
2263584	Oxadiazon	70.8	92.5	P/P	44 - 125
2263584	Oxyfluorfen	71.6	89.4	P/P	66 - 176
2263584	Parathion Ethyl	76.4	98.9	P/P	57 - 132
2263584	Parathion Methyl	93.1	111	P/P	59 - 156

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P401556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263584	Pendimethalin	71.9	75.9	P/P	59 - 129
2263584	Phorate	82.4	84.3	P/P	47 - 136
2263584	Prodiamine	43.9	48.7	P/P	10 - 159
2263584	Prometon	94.5	111	P/P	59 - 127
2263584	Prometryn	86.5	104	P/P	59 - 129
2263584	Pronamide	91.3	110	P/P	65 - 145
2263584	Propiconazole	65.8	86.5	P/P	28 - 165
2263584	Pyriproxyfen	71.4	86.0	P/P	21 - 180
2263584	Simazine	91.1	112	P/P	63 - 147
2263584	Sulfentrazone	71.5	87.6	P/P	32 - 136
2263584	Tebuconazole	22.4	28.3	P/P	-8.3 - 117
2263584	Terbufos	96.9	108	P/P	61 - 131
2263584	Terbuthylazine	78.0	90.7	P/P	62 - 126

Reference Method: EPA 8321B
Batch ID: P401256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263287	Acesulfame K	121	130	P/P	40 - 150
2263287	AMPA	79.5	84.1	P/P	40 - 150
2263287	Endothall	110	105	P/P	40 - 150
2263287	Glufosinate	108	109	P/P	40 - 150
2263287	Glyphosate	85.9	85.8	P/P	40 - 150
2263287	Sucralose	90.2	93.3	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P401291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263582	2,4-D	119	110	P/P	30 - 160
2263582	2,4,5-T	119	118	P/P	30 - 160
2263582	Acetaminophen	71.1	68.8	P/P	30 - 160
2263582	Acetamiprid	85.1	91.8	P/P	30 - 160
2263582	Afidopyropen	59.2	67.8	P/P	30 - 160
2263582	Bentazon	88.2	93.0	P/P	30 - 160
2263582	Benzovindiflupyr	91.1	95.5	P/P	30 - 160
2263582	Carbamazepine	93.6	97.7	P/P	30 - 160
2263582	Clothianidin	100	101	P/P	30 - 160
2263582	Dinotefuran	92.5	96.9	P/P	30 - 160
2263582	Diuron	93.6	101	P/P	30 - 160
2263582	Fenuron	95.9	99.1	P/P	30 - 160
2263582	Fluridone	91.3	95.3	P/P	30 - 160
2263582	Hydrocodone	94.6	99.6	P/P	30 - 160
2263582	Ibuprofen	91.4	97.5	P/P	30 - 160
2263582	Imazapyr	108	112	P/P	30 - 160
2263582	Imidacloprid	99.6	102	P/P	30 - 160
2263582	Linuron	86.0	91.9	P/P	30 - 160
2263582	Mandestrobin	90.9	96.5	P/P	30 - 160
2263582	MCPP	116	117	P/P	30 - 160
2263582	Naproxen	73.8	78.5	P/P	30 - 160
2263582	Primidone	102	107	P/P	30 - 160
2263582	Pyraclostrobin	88.4	91.5	P/P	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P401291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263582	Thiamethoxam	99.3	104	P/P	30 - 160
2263582	Tolfenpyrad	52.2	58.2	P/P	30 - 160
2263582	Triclopyr	119	119	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P401468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263593	Fluoride	100	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P402093

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2263325	Organic Carbon	96.0	96.8	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263587	Turbidity	0.540	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263836	Calcium	0.420	Spike	P	0 - 20
2263836	Iron	0.638	Spike	P	0 - 20
2263836	Magnesium	0.00299	Spike	P	0 - 20
2263836	Potassium	0.761	Spike	P	0 - 20
2263836	Sodium	0.195	Spike	P	0 - 20
2263836	Strontium	0.213	Spike	P	0 - 20
2263836	Tin	3.03	Spike	P	0 - 20
2263836	Titanium	1.39	Spike	P	0 - 20
2263836	Vanadium	1.62	Spike	P	0 - 20
2263836	Zinc	1.17	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263836	Aluminum	0.906	Spike	P	0 - 20
2263836	Antimony	0.681	Spike	P	0 - 20
2263836	Arsenic	1.24	Spike	P	0 - 20
2263836	Barium	0.173	Spike	P	0 - 20
2263836	Beryllium	0.661	Spike	P	0 - 20
2263836	Boron	1.86	Spike	P	0 - 20
2263836	Cadmium	2.27	Spike	P	0 - 20
2263836	Chromium	0.275	Spike	P	0 - 20
2263836	Cobalt	2.41	Spike	P	0 - 20
2263836	Copper	0.739	Spike	P	0 - 20
2263836	Lead	0.505	Spike	P	0 - 20
2263836	Manganese	0.665	Spike	P	0 - 20
2263836	Molybdenum	1.74	Spike	P	0 - 20
2263836	Nickel	0.389	Spike	P	0 - 20
2263836	Selenium	0.856	Spike	P	0 - 20
2263836	Silver	0.193	Spike	P	0 - 20
2263836	Thallium	1.45	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263599	Chloride	0.490	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263599	Sulfate	1.08	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263578	Ammonia-N	0.571	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P401926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263634	Kjeldahl Nitrogen	5.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401380

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263486	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263485	Total-P	1.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263579	O-Phosphate-P	1.48	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P401556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263584	Acetochlor	23.5	Spike	P	0 - 30
2263584	Alachlor	17.6	Spike	P	0 - 30
2263584	Ametryn	16.3	Spike	P	0 - 30
2263584	Atrazine	16.4	Spike	P	0 - 30
2263584	Atrazine Desethyl	20.2	Spike	P	0 - 30
2263584	Azinphos Methyl	16.6	Spike	P	0 - 30
2263584	Azoxystrobin	12.2	Spike	P	0 - 30
2263584	Bromacil	24.7	Spike	P	0 - 30
2263584	Butylate	0.487	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P401556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263584	Caffeine	0.971	Spike	P	0 - 30
2263584	Carbophenothion	20.3	Spike	P	0 - 30
2263584	Carfentrazone Ethyl	21.2	Spike	P	0 - 30
2263584	Chlorpyrifos Ethyl	15.7	Spike	P	0 - 30
2263584	Chlorpyrifos Methyl	10.3	Spike	P	0 - 30
2263584	Cyanazine	23.9	Spike	P	0 - 30
2263584	Demeton	6.40	Spike	P	0 - 30
2263584	Diazinon	12.4	Spike	P	0 - 30
2263584	Difenoconazole	23.1	Spike	P	0 - 30
2263584	Dimethenamid	22.5	Spike	P	0 - 30
2263584	Disulfoton	2.65	Spike	P	0 - 30
2263584	Dithiopyr	17.5	Spike	P	0 - 30
2263584	EPTC	15.8	Spike	P	0 - 30
2263584	Ethion	10.5	Spike	P	0 - 30
2263584	Ethoprop	8.24	Spike	P	0 - 30
2263584	Fenamiphos	9.74	Spike	P	0 - 30
2263584	Fenbuconazole	19.1	Spike	P	0 - 30
2263584	Fipronil	15.0	Spike	P	0 - 30
2263584	Fipronil Desulfinyl	22.4	Spike	P	0 - 30
2263584	Fipronil Sulfide	0.393	Spike	P	0 - 30
2263584	Fipronil Sulfone	20.6	Spike	P	0 - 30
2263584	Fluazifop-P-butyl	19.8	Spike	P	0 - 30
2263584	Fludioxonil	22.6	Spike	P	0 - 30
2263584	Flumioxazin	0.525	Spike	P	0 - 30
2263584	Flutolanil	25.2	Spike	P	0 - 30
2263584	Fluxapyroxad	10.4	Spike	P	0 - 30
2263584	Fonofos	7.68	Spike	P	0 - 30
2263584	Hexazinone	14.4	Spike	P	0 - 30
2263584	Imazalil	36.7	Spike	F	0 - 30
2263584	Iprodione	16.8	Spike	P	0 - 30
2263584	Malathion	16.0	Spike	P	0 - 30
2263584	Metalaxyl	18.9	Spike	P	0 - 30
2263584	Metolachlor	20.8	Spike	P	0 - 30
2263584	Metribuzin	18.5	Spike	P	0 - 30
2263584	Mevinphos	14.8	Spike	P	0 - 30
2263584	Molinate	2.69	Spike	P	0 - 30
2263584	Myclobutanil	21.1	Spike	P	0 - 30
2263584	Naled	16.8	Spike	P	0 - 30
2263584	Norflurazon	27.1	Spike	P	0 - 30
2263584	Oxadiazon	26.6	Spike	P	0 - 30
2263584	Oxyfluorfen	22.1	Spike	P	0 - 30
2263584	Parathion Ethyl	25.7	Spike	P	0 - 30
2263584	Parathion Methyl	17.7	Spike	P	0 - 30
2263584	Pendimethalin	5.43	Spike	P	0 - 30
2263584	Phorate	2.22	Spike	P	0 - 30
2263584	Prodiamine	10.3	Spike	P	0 - 30
2263584	Prometon	16.3	Spike	P	0 - 30
2263584	Prometryn	18.3	Spike	P	0 - 30
2263584	Pronamide	18.8	Spike	P	0 - 30
2263584	Propiconazole	27.2	Spike	P	0 - 30
2263584	Pyriproxyfen	18.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P401556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263584	Simazine	13.4	Spike	P	0 - 30
2263584	Sulfentrazone	20.2	Spike	P	0 - 30
2263584	Tebuconazole	23.0	Spike	P	0 - 30
2263584	Terbufos	10.7	Spike	P	0 - 30
2263584	Terbuthylazine	15.2	Spike	P	0 - 30
LFB	Acetochlor	16.2	LCS	P	0 - 30
LFB	Alachlor	1.60	LCS	P	0 - 30
LFB	Ametryn	3.60	LCS	P	0 - 30
LFB	Atrazine	12.8	LCS	P	0 - 30
LFB	Atrazine Desethyl	2.48	LCS	P	0 - 30
LFB	Azinphos Methyl	3.96	LCS	P	0 - 30
LFB	Azoxystrobin	10.6	LCS	P	0 - 30
LFB	Bromacil	0.278	LCS	P	0 - 30
LFB	Butylate	12.7	LCS	P	0 - 30
LFB	Caffeine	1.86	LCS	P	0 - 30
LFB	Carbophenothion	7.23	LCS	P	0 - 30
LFB	Carfentrazone Ethyl	5.39	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	7.98	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	20.7	LCS	P	0 - 30
LFB	Cyanazine	5.38	LCS	P	0 - 30
LFB	Demeton	15.5	LCS	P	0 - 30
LFB	Diazinon	9.03	LCS	P	0 - 30
LFB	Difenoconazole	9.50	LCS	P	0 - 30
LFB	Dimethenamid	8.34	LCS	P	0 - 30
LFB	Disulfoton	1.98	LCS	P	0 - 30
LFB	Dithiopyr	9.12	LCS	P	0 - 30
LFB	EPTC	6.78	LCS	P	0 - 30
LFB	Ethion	1.48	LCS	P	0 - 30
LFB	Ethoprop	7.76	LCS	P	0 - 30
LFB	Fenamiphos	12.2	LCS	P	0 - 30
LFB	Fenbuconazole	4.16	LCS	P	0 - 30
LFB	Fipronil	0.432	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	0.711	LCS	P	0 - 30
LFB	Fipronil Sulfide	8.42	LCS	P	0 - 30
LFB	Fipronil Sulfone	16.8	LCS	P	0 - 30
LFB	Fluazifop-P-butyl	9.09	LCS	P	0 - 30
LFB	Fludioxonil	6.21	LCS	P	0 - 30
LFB	Flumioxazin	21.8	LCS	P	0 - 30
LFB	Flutolanil	6.70	LCS	P	0 - 30
LFB	Fluxapyroxad	8.87	LCS	P	0 - 30
LFB	Fonofos	30.4	LCS	F	0 - 30
LFB	Hexazinone	9.62	LCS	P	0 - 30
LFB	Imazalil	4.56	LCS	P	0 - 30
LFB	Iprodione	2.18	LCS	P	0 - 30
LFB	Malathion	4.61	LCS	P	0 - 30
LFB	Metalaxyl	7.60	LCS	P	0 - 30
LFB	Metolachlor	1.56	LCS	P	0 - 30
LFB	Metribuzin	1.71	LCS	P	0 - 30
LFB	Mevinphos	14.1	LCS	P	0 - 30
LFB	Molinate	13.8	LCS	P	0 - 30
LFB	Myclobutanil	9.41	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P401556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Naled	17.3	LCS	P	0 - 30
LFB	Norflurazon	3.64	LCS	P	0 - 30
LFB	Oxadiazon	0.890	LCS	P	0 - 30
LFB	Oxyfluorfen	14.1	LCS	P	0 - 30
LFB	Parathion Ethyl	10.6	LCS	P	0 - 30
LFB	Parathion Methyl	17.7	LCS	P	0 - 30
LFB	Pendimethalin	14.0	LCS	P	0 - 30
LFB	Phorate	27.9	LCS	P	0 - 30
LFB	Prodiamine	12.5	LCS	P	0 - 30
LFB	Prometon	15.2	LCS	P	0 - 30
LFB	Prometryn	1.08	LCS	P	0 - 30
LFB	Pronamide	9.36	LCS	P	0 - 30
LFB	Propiconazole	0.510	LCS	P	0 - 30
LFB	Pyriproxyfen	2.47	LCS	P	0 - 30
LFB	Simazine	8.87	LCS	P	0 - 30
LFB	Sulfentrazone	8.46	LCS	P	0 - 30
LFB	Tebuconazole	9.84	LCS	P	0 - 30
LFB	Terbufos	19.1	LCS	P	0 - 30
LFB	Terbuthylazine	10.1	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P401256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263287	Acesulfame K	7.30	Spike	P	0 - 30
2263287	AMPA	5.07	Spike	P	0 - 30
2263287	Endothall	4.58	Spike	P	0 - 30
2263287	Glufosinate	0.494	Spike	P	0 - 30
2263287	Glyphosate	0.0999	Spike	P	0 - 30
2263287	Sucralose	3.47	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P401291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263582	2,4-D	7.58	Spike	P	0 - 30
2263582	2,4,5-T	0.664	Spike	P	0 - 30
2263582	Acetaminophen	3.18	Spike	P	0 - 30
2263582	Acetamiprid	7.67	Spike	P	0 - 30
2263582	Afidopyropen	13.7	Spike	P	0 - 30
2263582	Bentazon	5.26	Spike	P	0 - 30
2263582	Benzovindiflupyr	4.71	Spike	P	0 - 30
2263582	Carbamazepine	4.28	Spike	P	0 - 30
2263582	Clothianidin	0.324	Spike	P	0 - 30
2263582	Dinotefuran	4.64	Spike	P	0 - 30
2263582	Diuron	7.50	Spike	P	0 - 30
2263582	Fenuron	3.31	Spike	P	0 - 30
2263582	Fluridone	4.27	Spike	P	0 - 30
2263582	Hydrocodone	5.23	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P401291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263582	Ibuprofen	6.50	Spike	P	0 - 30
2263582	Imazapyr	3.44	Spike	P	0 - 30
2263582	Imidacloprid	2.51	Spike	P	0 - 30
2263582	Linuron	6.70	Spike	P	0 - 30
2263582	Mandestrobin	6.03	Spike	P	0 - 30
2263582	MCPP	1.08	Spike	P	0 - 30
2263582	Naproxen	6.20	Spike	P	0 - 30
2263582	Primidone	4.15	Spike	P	0 - 30
2263582	Pyraclostrobin	3.39	Spike	P	0 - 30
2263582	Thiamethoxam	4.57	Spike	P	0 - 30
2263582	Tolfenpyrad	10.9	Spike	P	0 - 30
2263582	Triclopyr	0.631	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P401339

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263619	Color (true)	2.15	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P401464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263593	Total Alkalinity	1.05	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
Batch ID: P401796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263577	TDS	5.75	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P401468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263593	Fluoride	0.464	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P402093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2263325	Organic Carbon	0.461	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report
Surrogates

Lab Sample ID: 2263582
Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	123	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	112	P	30 - 160
EPA 8321B	Diuron-d6	99.7	P	30 - 160
EPA 8321B	Endothall-d6	90.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	77.8	P	30 - 160
EPA 8321B	Ibuprofen-d3	108	P	30 - 160
EPA 8321B	Primidone-d5	121	P	30 - 160
EPA 8321B	Sucralose-d6	78.8	P	30 - 160

Lab Sample ID: 2263584
Field Sample ID: 44059

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Caffeine-d9	73.7	P	20 - 200
EPA 8270E	Simazine-d10	114	P	73 - 135
EPA 8270E	Terbufos-d10	102	P	58 - 130

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A106713
Included Lab Sample IDs: 2263579

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	99.2	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A106751
Included Lab Sample IDs: 2263577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.6	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A106752
Included Lab Sample IDs: 2263577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A106754
Included Lab Sample IDs: 2263582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.9	102	P/P	60 - 160
Glufosinate	103	102	P/P	60 - 160
Glyphosate	97.6	97.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A106766
Included Lab Sample IDs: 2263578

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

Reference Method: EPA 8321B
Run ID: A106768
Included Lab Sample IDs: 2263582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.7	92.2	P/P	50 - 150
2,4,5-T	102	101	P/P	50 - 150
Acetaminophen	110	111	P/P	60 - 160
Acetamiprid	104	104	P/P	50 - 150
Afidopyropen	93.0	101	P/P	50 - 150
Bentazon	101	102	P/P	50 - 160
Benzovindiflupyr	108	110	P/P	50 - 160
Carbamazepine	108	107	P/P	60 - 150
Clothianidin	107	106	P/P	60 - 150
Dinotefuran	107	106	P/P	50 - 150
Diuron	118	119	P/P	60 - 160
Fenuron	105	107	P/P	60 - 150
Fluridone	103	101	P/P	60 - 160
Hydrocodone	108	111	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A106768
Included Lab Sample IDs: 2263582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	105	102	P/P	50 - 160
Imazapyr	110	112	P/P	50 - 160
Imidacloprid	101	102	P/P	60 - 150
Linuron	111	117	P/P	60 - 150
Mandestrobin	107	106	P/P	50 - 150
MCPP	97.7	93.1	P/P	50 - 150
Naproxen	87.8	93.3	P/P	50 - 160
Primidone	110	111	P/P	60 - 150
Pyraclostrobin	105	104	P/P	60 - 150
Thiamethoxam	104	105	P/P	50 - 150
Tolfenpyrad	103	103	P/P	60 - 150
Triclopyr	106	98.0	P/P	50 - 150

Reference Method: SM 2320 B-2011
Run ID: A106794
Included Lab Sample IDs: 2263577

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A106794
Included Lab Sample IDs: 2263577

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

Reference Method: EPA 8321B
Run ID: A106812
Included Lab Sample IDs: 2263582

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	95.6	78.3	P/P	60 - 160
Endothall	87.0	79.4	P/P	60 - 160
Sucralose	80.8	81.3	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A106842
Included Lab Sample IDs: 2263578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	98.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A106905
Included Lab Sample IDs: 2263577

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A106917
Included Lab Sample IDs: 2263578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106929
Included Lab Sample IDs: 2263583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	106	P/P	90 - 110
Antimony	107	108	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Barium	103	103	P/P	90 - 110
Beryllium	101	101	P/P	90 - 110
Boron	104	105	P/P	90 - 110
Cadmium	104	104	P/P	90 - 110
Chromium	102	103	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	104	103	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Molybdenum	104	101	P/P	90 - 110
Nickel	100	101	P/P	90 - 110
Selenium	102	103	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A106938
Included Lab Sample IDs: 2263584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	103		P	80 - 120
Alachlor	99.2		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine	108		P	80 - 120
Atrazine Desethyl	117		P	80 - 120
Azinphos Methyl	99.2		P	80 - 120
Azoxystrobin	105		P	80 - 120
Bromacil	101		P	80 - 120
Butylate	95.3		P	80 - 120
Caffeine	99.7		P	70 - 120
Carbophenothion	80.1		P	80 - 120
Carfentrazone Ethyl	85.5		P	80 - 120
Chlorpyrifos Ethyl	96.2		P	80 - 120
Chlorpyrifos Methyl	94.1		P	80 - 120
Cyanazine	97.7		P	80 - 120
Demeton	104		P	80 - 120
Diazinon	92.8		P	80 - 120
Difenoconazole	98.6		P	80 - 120
Dimethenamid	99.4		P	80 - 120
Disulfoton	97.6		P	80 - 120
Dithiopyr	92.0		P	80 - 120
EPTC	102		P	80 - 120
Ethion	94.1		P	80 - 120
Ethoprop	100		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A106938
Included Lab Sample IDs: 2263584

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenamiphos	93.9		P	80 - 120
Fenbuconazole	89.1		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	87.4		P	80 - 120
Fipronil Sulfide	81.4		P	80 - 120
Fipronil Sulfone	87.2		P	80 - 120
Fluazifop-P-butyl	92.4		P	80 - 120
Fludioxonil	92.2		P	80 - 120
Flumioxazin	82.4		P	80 - 120
Flutolanil	106		P	80 - 120
Fluxapyroxad	85.1		P	80 - 120
Fonofos	91.1		P	80 - 120
Hexazinone	102		P	80 - 120
Imazalil	96.9		P	80 - 120
Iprodione	81.2		P	80 - 120
Malathion	91.7		P	80 - 120
Metalaxyl	99.8		P	80 - 120
Metolachlor	103		P	80 - 120
Metribuzin	110		P	80 - 120
Mevinphos	96.2		P	80 - 120
Molinate	90.7		P	80 - 120
Myclobutanil	99.1		P	80 - 120
Naled	108		P	80 - 120
Norflurazon	93.3		P	80 - 120
Oxadiazon	103		P	80 - 120
Oxyfluorfen	88.8		P	80 - 120
Parathion Ethyl	99.7		P	80 - 120
Parathion Methyl	94.0		P	80 - 120
Pendimethalin	105		P	80 - 120
Phorate	98.5		P	80 - 120
Prodiamine	103		P	80 - 120
Prometon	105		P	80 - 120
Prometryn	95.6		P	80 - 120
Pronamide	92.9		P	80 - 120
Propiconazole	92.2		P	80 - 120
Pyriproxyfen	102		P	80 - 120
Simazine	112		P	80 - 120
Sulfentrazone	83.4		P	80 - 120
Tebuconazole	98.2		P	80 - 120
Terbufos	90.4		P	80 - 120
Terbuthylazine	89.5		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A106958
Included Lab Sample IDs: 2263583

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A106958
Included Lab Sample IDs: 2263583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sodium	104	104	P/P	90 - 110
Strontium	104	103	P/P	90 - 110
Tin	101	99.9	P/P	90 - 110
Titanium	100	98.9	P/P	90 - 110
Vanadium	102	100	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A106989
Included Lab Sample IDs: 2263583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	105	107	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A107016
Included Lab Sample IDs: 2263583

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	101	101	P/P	90 - 110
Thallium	108	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A107051
Included Lab Sample IDs: 2263578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.2	100	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A107085
Included Lab Sample IDs: 2263578

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.6	99.0	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							0.540	
EPA 200.7 Rev. 4.4	Calcium	109		111	110	109			0.420
	Iron	108		111	108	109			0.638
	Magnesium	111		108	111	111			0.0029
	Potassium	103		104	107	106			0.761
	Sodium	107		109	108	108			0.195
	Strontium	102		103	102	102			0.213
	Tin	101		101	101	98.4			3.03
	Titanium	101		101	101	99.8			1.39
	Vanadium	100		101	101	98.9			1.62
	Zinc	96.3		95.1	96.7	95.6			1.17
EPA 200.8 Rev. 5.4	Aluminum	115		104	105	107			0.906
	Antimony	117		110	109	114			0.681
	Arsenic	115		103	105	107			1.24
	Barium	118		108	108	111			0.173
	Beryllium	111		107	108	111			0.661
	Boron	111		104	102	105			1.86
	Cadmium	113		106	103	109			2.27
	Chromium	111		103	102	108			0.275
	Cobalt	105		100	103	103			2.41
	Copper	114		104	105	103			0.739
	Lead	114		107	108	109			0.505
	Manganese	114		104	104	106			0.665
	Molybdenum	116		104	106	109			1.74
	Nickel	114		102	103	103			0.389
	Selenium	114		102	101	103			0.856
	Silver	114		106	105	111			0.193
	Thallium	107		106	107	107			1.45
EPA 300.0 Rev. 2.1	Chloride	101		98.9	101			0.490	
	Sulfate	98.1		96.2	95.3			1.08	
EPA 350.1 Rev. 2.0	Ammonia-N	101		97.4	98.0				0.571
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		98.8	108				5.09
EPA 353.2 Rev. 2.0	NO2NO3-N	102		100	100				0.0
EPA 365.1 Rev. 2.0	Total-P	104		104	102				1.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		97.6	99.5				1.48
EPA 8270E	Acetochlor	87.5	103	81.2	103		16.2		23.5
	Alachlor	76.0	77.3	74.5	88.8		1.60		17.6
	Ametryn	82.8	85.8	96.6	114		3.60		16.3
	Atrazine	89.8	102	93.7	113		12.8		16.4
	Atrazine Desethyl	96.8	99.2	76.6	98.2		2.48		20.2
	Azinphos Methyl	101	96.7	105	124		3.96		16.6
	Azoxystrobin	89.0	99.0	129	146		10.6		12.2
	Bromacil	85.3	85.5	80.2	103		0.278		24.7
	Butylate	38.2	43.4	40.0	40.2		12.7		0.487
	Caffeine	85.6	84.0	91.2	90.3		1.86		0.971
	Carbophenothion	80.4	86.4	77.8	95.4		7.23		20.3
	Carfentrazone Ethyl	85.6	81.1	79.0	97.7		5.39		21.2
	Chlorpyrifos Ethyl	78.2	84.7	81.4	95.3		7.98		15.7
	Chlorpyrifos Methyl	84.7	104	89.5	99.2		20.7		10.3
	Cyanazine	119	112	119	151		5.38		23.9
	Demeton	62.8	73.4	93.5	99.7		15.5		6.40
	Diazinon	87.5	95.8	95.3	108		9.03		12.4
	Difenoconazole	161	177	137	173		9.50		23.1
	Dimethenamid	68.6	74.5	60.2	75.5		8.34		22.5

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270E	Disulfoton	62.1	63.3	80.6	78.5	1.98		2.65
	Dithiopyr	73.5	67.1	74.1	88.3	9.12		17.5
	EPTC	43.0	46.0	39.9	46.8	6.78		15.8
	Ethion	64.3	65.3	31.1	34.5	1.48		10.5
	Ethoprop	91.6	99.0	97.3	106	7.76		8.24
	Fenamiphos	58.3	65.9	73.0	80.4	12.2		9.74
	Fenbuconazole	89.1	92.9	93.4	113	4.16		19.1
	Fipronil	89.3	89.7	87.2	101	0.432		15.0
	Fipronil Desulfinyl	82.4	81.8	79.2	99.1	0.711		22.4
	Fipronil Sulfide	77.0	83.8	70.4	70.7	8.42		0.393
	Fipronil Sulfone	77.3	91.4	65.2	80.2	16.8		20.6
	Fluazifop-P-butyl	81.6	89.3	82.8	101	9.09		19.8
	Fludioxonil	97.5	104	72.1	90.5	6.21		22.6
	Flumioxazin	154	191	156	155	21.8		0.525
	Flutolanil	88.0	94.1	74.5	96.0	6.70		25.2
	Fluxapyroxad	73.3	67.1	46.6	51.7	8.87		10.4
	Fonofos	69.2	93.9	88.3	95.3	30.4		7.68
	Hexazinone	86.0	94.7	83.0	97.3	9.62		14.4
	Imazalil	44.5	42.5	72.1	105	4.56		36.7
	Iprodione	80.3	78.6	70.1	82.9	2.18		16.8
	Malathion	96.4	101	92.8	109	4.61		16.0
	Metalaxyl	57.4	53.2	82.7	100	7.60		18.9
	Metolachlor	80.5	79.3	76.2	93.9	1.56		20.8
	Metribuzin	97.4	95.8	102	123	1.71		18.5
	Mevinphos	93.6	108	105	122	14.1		14.8
	Molinate	50.8	58.4	57.9	56.4	13.8		2.69
	Myclobutanil	76.3	83.8	73.9	91.3	9.41		21.1
	Naled	30.3	36.0	24.5	29.0	17.3		16.8
	Norflurazon	81.0	84.0	74.7	98.1	3.64		27.1
	Oxadiazon	73.6	74.3	70.8	92.5	0.890		26.6
	Oxyfluorfen	74.4	85.7	71.6	89.4	14.1		22.1
	Parathion Ethyl	81.3	90.3	76.4	98.9	10.6		25.7
	Parathion Methyl	92.9	111	93.1	111	17.7		17.7
	Pendimethalin	73.1	84.1	71.9	75.9	14.0		5.43
	Phorate	53.4	70.7	82.4	84.3	27.9		2.22
	Prodiamine	67.8	59.9	43.9	48.7	12.5		10.3
	Prometon	56.0	65.2	94.5	111	15.2		16.3
	Prometryn	85.8	86.7	86.5	104	1.08		18.3
	Pronamide	88.8	97.5	91.3	110	9.36		18.8
	Propiconazole	74.8	75.2	65.8	86.5	0.510		27.2
	Pyriproxyfen	76.3	74.4	71.4	86.0	2.47		18.6
	Simazine	91.6	100	91.1	112	8.87		13.4
	Sulfentrazone	78.3	71.9	71.5	87.6	8.46		20.2
	Tebuconazole	43.9	39.8	22.4	28.3	9.84		23.0
	Terbufos	83.3	101	96.9	108	19.1		10.7
	Terbuthylazine	82.5	91.2	78.0	90.7	10.1		15.2
EPA 8321B	2,4-D	105		119	110			7.58
	2,4,5-T	104		119	118			0.664
	Acesulfame K	85.8		121	130			7.30
	Acetaminophen	111		71.1	68.8			3.18
	Acetamiprid	82.8		85.1	91.8			7.67
	Afidopyropen	59.4		59.2	67.8			13.7
	AMPA	95.8		79.5	84.1			5.07
	Bentazon	90.5		88.2	93.0			5.26

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Benzovindiflupyr	88.1	91.1	95.5			4.71
	Carbamazepine	89.9	93.6	97.7			4.28
	Clothianidin	94.6	100	101			0.324
	Dinotefuran	90.8	92.5	96.9			4.64
	Diuron	94.9	93.6	101			7.50
	Endothall	93.4	110	105			4.58
	Fenuron	93.8	95.9	99.1			3.31
	Fluridone	87.2	91.3	95.3			4.27
	Glufosinate	99.6	108	109			0.494
	Glyphosate	96.1	85.9	85.8			0.0999
	Hydrocodone	91.7	94.6	99.6			5.23
	Ibuprofen	92.7	91.4	97.5			6.50
	Imazapyr	108	108	112			3.44
	Imidacloprid	89.4	99.6	102			2.51
	Linuron	85.4	86.0	91.9			6.70
	Mandestrobin	90.6	90.9	96.5			6.03
	MCPP	103	116	117			1.08
	Naproxen	72.9	73.8	78.5			6.20
	Primidone	96.7	102	107			4.15
	Pyraclostrobin	82.5	88.4	91.5			3.39
	Sucralose	83.3	90.2	93.3			3.47
	Thiamethoxam	89.5	99.3	104			4.57
	Tolfenpyrad	52.6	52.2	58.2			10.9
	Triclopyr	104	119	119			0.631
SM 2120 B-2011	Color (true)	99.8				2.15	
SM 2320 B-2011	Total Alkalinity	102				1.05	
SM 2540 C-2011	TDS					5.75	
SM 4500 F-C-2011	Fluoride	99.9	100	101			0.464
SM 5310 B-2011	Organic Carbon	97.0	96.0	96.8			0.461

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2263577
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2263583
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2263583
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2263577
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2263577
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2263578
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2263578
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2263578
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2263578
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2263579
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2263584
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2263582
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2263577
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2263577
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2263583
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2263577
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2263577

Reference Method Descriptions

Method	Description	Associated Samples
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2263577
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2263578

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	07/20/2021			07/21/2021 16:04	Sarah A Nixon	2263577
EPA 200.7 Rev. 4.4	07/20/2021	07/26/2021 14:45	Elliott D. Healy	07/30/2021 14:02	Betina Topolski	2263583
EPA 200.8 Rev. 5.4	07/20/2021	07/26/2021 14:45	Elliott D. Healy	07/29/2021 19:20	McKinley C Carter	2263583
	07/20/2021	07/26/2021 14:45	Elliott D. Healy	08/02/2021 20:03	McKinley C Carter	2263583
	07/20/2021	07/26/2021 14:45	Elliott D. Healy	08/04/2021 04:19	Alexander Thompson	2263583
EPA 300.0 Rev. 2.1	07/20/2021			07/29/2021 04:22	Lipi Saha	2263577
EPA 350.1 Rev. 2.0	07/20/2021			07/29/2021 13:06	Ping Hua	2263578
EPA 351.2 Rev. 2.0	07/20/2021	08/03/2021 18:20	Benjamin T. Nordmann	08/04/2021 14:45	Virginia P. Brown	2263578
EPA 353.2 Rev. 2.0	07/20/2021			07/22/2021 10:11	Beverly Y. Sanders	2263578
EPA 365.1 Rev. 2.0	07/20/2021	07/26/2021 16:37	Simonne.V. Calhoun	07/27/2021 10:15	Shengyu Ding	2263578
EPA 365.1 Rev. 2.0 dissolved	07/20/2021			07/20/2021 16:05	Ping Hua	2263579
EPA 8270E	07/20/2021	07/21/2021 08:00	Rasheda Ghaffari	07/27/2021 19:21	Michael Poppell	2263584
EPA 8321B	07/20/2021	07/21/2021 09:00	Juyoung Kim	07/21/2021 16:33	Juyoung Kim	2263582
	07/20/2021	07/21/2021 09:00	Juyoung Kim	07/23/2021 15:55	Pramila Ghimire	2263582
	07/20/2021	07/22/2021 09:00	Hoor Shaik	07/22/2021 21:36	Juyoung Kim	2263582
SM 2120 B-2011	07/20/2021			07/21/2021 16:47	Sarah A Nixon	2263577
SM 2320 B-2011	07/20/2021			07/23/2021 01:26	Dale L. Simmons	2263577
SM 2340B	07/20/2021			07/30/2021 14:02	Betina Topolski	2263583
SM 2540 C-2011	07/20/2021			07/23/2021 15:22	Yijie Li	2263577
SM 2540 D-2011	07/20/2021			07/23/2021 15:22	Yijie Li	2263577
SM 4500 F-C-2011	07/20/2021			07/23/2021 01:26	Dale L. Simmons	2263577
SM 5310 B-2011	07/20/2021			08/05/2021 15:04	Madeline Gruver	2263578