

Chemical Analysis Report

WAS-SECT-2021-04-05-01

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

Event Description: **SCI Kit #1**
Request ID: **RQ-2021-01-04-29**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Curtis Musson

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

Date Certified: 26-APR-2021 10:32

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

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: Lewis Creek Upstream of 157

Collection Date/Time: 04/05/2021 10:15

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2236199	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P396019	
	EPA 300.0 Rev. 2.1	Chloride	6.5		mg Cl/L	P396341	
		Sulfate	0.80		mg SO4/L	P396343	
	SM 2120 B-2011	Color (true)	79		PCU	P396011	
	SM 2320 B-2011	Total Alkalinity	14		mg CaCO3/L	P396148	
	SM 2540 C-2011	TDS	51		mg/L	P396618	
	SM 2540 D-2011	TSS	2	IA	mg/L	P396182	
	SM 4500 F-C-2011	Fluoride	0.080	I	mg F/L	P396150	
2236200	EPA 350.1 Rev. 2.0	Ammonia-N	0.057		mg N/L	P396651	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.49		mg N/L	P396378	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.023		mg N/L	P396274	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P396097	
	SM 5310 B-2011	Organic Carbon	7.8		mg C/L	P396367	
2236201	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P396001	
2236205	EPA 8321B	2,4-D	0.0020	U	ug/L	P396107	
		Acesulfame K	0.10	U	ug/L	P396006	
		2,4,5-T	0.0040	U	ug/L	P396107	
		AMPA	0.10	U	ug/L	P396006	
		Sucralose	0.28		ug/L	P396006	
		Acetaminophen	0.0080	U	ug/L	P396107	
		Acetamiprid	0.0020	U	ug/L	P396107	
		Endothall	0.25	U	ug/L	P396006	
		Glufosinate	0.10	U	ug/L	P396006	
		Glyphosate	0.10	U	ug/L	P396006	
		Afidopyropen	0.0020	U	ug/L	P396107	
		Bentazon	8.0E-04	U	ug/L	P396107	
		Benzovindiflupyr	0.0020	U	ug/L	P396107	
		Carbamazepine	8.0E-04	U	ug/L	P396107	
		Clothianidin	0.0020	U	ug/L	P396107	
		Dinotefuran	0.0020	U	ug/L	P396107	
		Diuron	0.0020	U	ug/L	P396107	
		Fenuron	0.016	U	ug/L	P396107	
		Fluridone	8.0E-04	U	ug/L	P396107	
		Imazapyr	0.011	I J	ug/L	P396107	RPD
		Hydrocodone	0.0020	U	ug/L	P396107	
		Ibuprofen	0.020	U	ug/L	P396107	
		Imidacloprid	0.0020	U	ug/L	P396107	
		Linuron	0.0040	U	ug/L	P396107	
		Mandestrobin	0.0020	U	ug/L	P396107	
		MCP	0.0020	U	ug/L	P396107	
		Naproxen	0.0080	U	ug/L	P396107	
		Primidone	0.0040	U	ug/L	P396107	
		Pyraclostrobin	0.0020	U	ug/L	P396107	

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2236205	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P396107	
		Tolfenpyrad	0.0020	U	ug/L	P396107	
		Triclopyr	0.0040	U	ug/L	P396107	
2236206	EPA 200.7 Rev. 4.4	Calcium	4.68		mg/L	P396204	
		Iron	1.34E+03		ug/L	P396204	
		Magnesium	2.04		mg/L	P396204	
		Potassium	0.48	I	mg/L	P396204	
		Sodium	3.6		mg/L	P396204	
		Strontium	13.9		ug/L	P396204	
		Tin	3.0	U	ug/L	P396204	
		Titanium	0.77	I	ug/L	P396204	
		Vanadium	2.0	U	ug/L	P396204	
		Zinc	5.0	U	ug/L	P396204	
	EPA 200.8 Rev. 5.4	Aluminum	52		ug/L	P396204	
		Antimony	0.050	U	ug/L	P396204	
		Arsenic	0.64		ug/L	P396204	
		Barium	11.4		ug/L	P396204	
		Beryllium	0.012	I	ug/L	P396204	
		Boron**	11.8		ug/L	P396204	
		Cadmium	0.020	U	ug/L	P396204	
		Chromium	0.40	U	ug/L	P396204	
		Cobalt	0.058	I	ug/L	P396204	
		Copper	0.40	U	ug/L	P396204	
		Lead	0.20	U	ug/L	P396204	
		Manganese	55.1		ug/L	P396204	
		Molybdenum	0.15	U	ug/L	P396204	
		Nickel	0.50	U	ug/L	P396204	
		Selenium	0.20	U	ug/L	P396204	
		Silver	0.010	U	ug/L	P396204	
		Thallium	0.10	U	ug/L	P396204	
	SM 2340B	Hardness	20.1		mg/L	P396204	
2236207	EPA 8270E	Acetochlor	0.24	U	ng/L	P395927	
		Alachlor	0.24	U	ng/L	P395927	
		Ametryn	0.58	U	ng/L	P395927	
		Atrazine	2.1		ng/L	P395927	
		Atrazine Desethyl	1.4	U	ng/L	P395927	
		Azinphos Methyl	1.9	U	ng/L	P395927	
		Azoxystrobin**	0.48	U	ng/L	P395927	
		Bromacil	0.48	U	ng/L	P395927	
		Butylate	0.38	U	ng/L	P395927	
		Caffeine**	7.2	U	ng/L	P395927	
		Carbophenothion	0.48	U	ng/L	P395927	
		Carfentrazone Ethyl**	0.096	U	ng/L	P395927	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P395927	
		Chlorpyrifos Methyl	0.048	U	ng/L	P395927	

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2236207	EPA 8270E	Cyanazine	3.1	U	ng/L	P395927	
		Demeton	1.4	U	ng/L	P395927	
		Diazinon	0.12	U	ng/L	P395927	
		Difenoconazole**	0.58	U	ng/L	P395927	
		Dimethenamid**	0.096	U	ng/L	P395927	
		Disulfoton	0.48	U	ng/L	P395927	
		Dithiopyr**	0.17	U	ng/L	P395927	
		EPTC	1.2	U	ng/L	P395927	RPD
		Ethion	0.14	U	ng/L	P395927	
		Ethoprop	0.096	U	ng/L	P395927	
		Fenamiphos	0.48	U	ng/L	P395927	
		Fenbuconazole**	0.12	U	ng/L	P395927	
		Fipronil	0.24	U	ng/L	P395927	
		Fipronil Desulfinyl**	0.12	U	ng/L	P395927	
		Fipronil Sulfide	0.14	U	ng/L	P395927	
		Fipronil Sulfone	0.14	U	ng/L	P395927	
		Fluazifop-P-butyl**	0.096	U	ng/L	P395927	
		Fludioxonil**	0.12	U	ng/L	P395927	
		Flumioxazin**	1.7	U	ng/L	P395927	
		Flutolanil**	0.096	U	ng/L	P395927	
		Fluxapyroxad**	0.096	U	ng/L	P395927	
		Fonofos	0.19	U	ng/L	P395927	
		Hexazinone	0.48	U	ng/L	P395927	
		Imazalil**	0.72	U	ng/L	P395927	
		Iprodione**	0.58	U	ng/L	P395927	
		Malathion	0.34	U	ng/L	P395927	
		Metalaxyl	0.72	U	ng/L	P395927	
		Metolachlor	0.34	U	ng/L	P395927	
		Metribuzin	3.1	U	ng/L	P395927	
		Mevinphos	1.0	U	ng/L	P395927	
		Molinate	0.29	U	ng/L	P395927	
		Myclobutanil**	0.24	U	ng/L	P395927	
		Naled**	1.4	U	ng/L	P395927	
		Norflurazon	0.48	U	ng/L	P395927	
		Oxadiazon	0.88	I	ng/L	P395927	
		Oxyfluorfen**	0.14	U	ng/L	P395927	
		Parathion Ethyl	0.24	U	ng/L	P395927	
		Parathion Methyl	0.53	U	ng/L	P395927	
		Pendimethalin	0.96	U	ng/L	P395927	
		Phorate	0.51	U	ng/L	P395927	
		Prodiamine**	0.17	U	ng/L	P395927	RPD
		Prometon	0.87	U	ng/L	P395927	
		Prometryn	0.19	U	ng/L	P395927	
		Pronamide**	0.14	U	ng/L	P395927	
		Propiconazole**	0.48	U	ng/L	P395927	

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2236207	EPA 8270E	Pyriproxyfen**	0.12	U	ng/L	P395927	
		Simazine	0.48	U	ng/L	P395927	
		Sulfentrazone**	0.48	U	ng/L	P395927	
		Tebuconazole**	0.48	U	ng/L	P395927	
		Terbufos	0.096	U	ng/L	P395927	
		Terbuthylazine	0.41	U	ng/L	P395927	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8270E: MS accuracy for some parameters not assessed due to high content of these parameters in the sample spiked.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0**Batch ID: P396019**

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4**Batch ID: P396204**

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	3.1	I	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4**Batch ID: P396204**

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: P396341**

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1**Batch ID: P396343**

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: P396651

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396378

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396274

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396097

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396001

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

Reference Method: EPA 8270E
Batch ID: P395927

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.0	U	ng/L
Azoxystrobin	0.50	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Caffeine	7.5	U	ng/L
Carbophenothion	0.50	U	ng/L
Carfentrazone Ethyl	0.10	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.050	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	1.5	U	ng/L
Diazinon	0.12	U	ng/L
Difenoconazole	0.60	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.18	U	ng/L
EPTC	1.2	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P395927

Component	Result	Code	Units
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fenbuconazole	0.12	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fluazifop-P-butyl	0.10	U	ng/L
Fludioxonil	0.12	U	ng/L
Flumioxazin	1.8	U	ng/L
Flutolanil	0.10	U	ng/L
Fluxapyroxad	0.10	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Imazalil	0.75	U	ng/L
Iprodione	0.60	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.75	U	ng/L
Metolachlor	0.35	U	ng/L
Metribuzin	3.2	U	ng/L
Mevinphos	1.0	U	ng/L
Molinate	0.30	U	ng/L
Myclobutanil	0.25	U	ng/L
Naled	1.5	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.30	U	ng/L
Oxyfluorfen	0.15	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.52	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Pronamide	0.15	U	ng/L
Propiconazole	0.50	U	ng/L
Pyriproxyfen	0.12	U	ng/L
Simazine	0.50	U	ng/L
Sulfentrazone	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B

Batch ID: P396006

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P396006

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P396107

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: P396011

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P396148

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

Reference Method: SM 2540 C-2011
Batch ID: P396618

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P396182

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396150

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P396367

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: P396204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	110		P	85 - 115
Iron	104		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	96.3		P	85 - 115
Sodium	101		P	85 - 115
Strontium	89.3		P	85 - 115
Tin	102		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	98.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P396204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.0		P	85 - 115
Antimony	96.9		P	85 - 115
Arsenic	94.3		P	85 - 115
Barium	93.9		P	85 - 115
Beryllium	101		P	85 - 115
Boron	92.1		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	92.7		P	85 - 115
Cobalt	94.4		P	85 - 115
Copper	91.4		P	85 - 115
Lead	101		P	85 - 115
Manganese	95.2		P	85 - 115
Molybdenum	93.6		P	85 - 115
Nickel	91.7		P	85 - 115
Selenium	93.4		P	85 - 115
Silver	102		P	85 - 115
Thallium	98.5		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396341

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396343

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396651

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396378

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: P396274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	99.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396097

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.5		P	90 - 110

Reference Method: EPA 8270E
Batch ID: P395927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	93.4	93.6	P/P	70 - 121
Alachlor	92.2	94.7	P/P	70 - 119
Ametryn	63.0	78.4	P/P	61 - 135
Atrazine	92.7	98.9	P/P	76 - 123
Atrazine Desethyl	108	98.8	P/P	35 - 140
Azinphos Methyl	131	127	P/P	57 - 163
Azoxystrobin	181	159	P/P	43 - 231
Bromacil	89.5	80.9	P/P	42 - 123
Butylate	60.8	47.7	P/P	34 - 92.0
Caffeine	75.6	70.6	P/P	70 - 130
Carbophenothion	86.8	94.6	P/P	61 - 121
Carfentrazone Ethyl	102	107	P/P	62 - 139
Chlorpyrifos Ethyl	77.4	90.8	P/P	67 - 121
Chlorpyrifos Methyl	91.1	94.4	P/P	67 - 120
Cyanazine	126	122	P/P	20 - 226
Demeton	75.5	78.0	P/P	35 - 125
Diazinon	99.5	99.8	P/P	70 - 122
Difenoconazole	149	145	P/P	56 - 186
Dimethenamid	87.3	92.4	P/P	67 - 119
Disulfoton	80.1	89.2	P/P	47 - 120
Dithiopyr	84.4	89.0	P/P	67 - 118
EPTC	62.7	48.6	P/P	33 - 90.0
Ethion	79.0	92.6	P/P	40 - 133
Ethoprop	91.0	87.0	P/P	61 - 121
Fenamiphos	89.4	97.7	P/P	31 - 139
Fenbuconazole	114	107	P/P	66 - 141
Fipronil	97.8	95.8	P/P	62 - 129
Fipronil Desulfinyl	95.8	98.3	P/P	59 - 126

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P395927

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fipronil Sulfide	82.5	86.5	P/P	63 - 117
Fipronil Sulfone	79.0	90.7	P/P	57 - 117
Fluazifop-P-butyl	96.4	98.1	P/P	63 - 124
Fludioxonil	101	104	P/P	63 - 123
Flumioxazin	165	175	P/P	34 - 245
Flutolanil	92.0	94.3	P/P	56 - 131
Fluxapyroxad	86.2	89.9	P/P	57 - 117
Fonofos	85.0	84.5	P/P	61 - 116
Hexazinone	92.1	99.7	P/P	55 - 138
Imazalil	87.5	112	P/P	33 - 143
Iprodione	95.9	99.9	P/P	59 - 118
Malathion	98.0	100	P/P	62 - 138
Metalaxyl	96.4	97.2	P/P	24 - 147
Metolachlor	86.0	90.2	P/P	68 - 118
Metribuzin	108	105	P/P	20 - 239
Mevinphos	74.9	71.7	P/P	46 - 124
Molinate	67.4	56.5	P/P	46 - 100
Myclobutanil	91.7	93.9	P/P	32 - 149
Naled	47.6	46.9	P/P	32 - 95.0
Norflurazon	94.6	98.5	P/P	57 - 127
Oxadiazon	88.7	94.0	P/P	63 - 118
Oxyfluorfen	106	116	P/P	69 - 137
Parathion Ethyl	90.0	91.9	P/P	70 - 113
Parathion Methyl	104	109	P/P	71 - 130
Pendimethalin	84.7	88.7	P/P	55 - 118
Phorate	83.5	73.7	P/P	46 - 125
Prodiamine	45.2	49.5	P/P	20 - 141
Prometon	88.4	91.2	P/P	54 - 122
Prometryn	94.4	97.5	P/P	66 - 124
Pronamide	95.3	96.9	P/P	79 - 122
Propiconazole	91.9	96.1	P/P	61 - 126
Pyriproxyfen	92.5	94.1	P/P	52 - 131
Simazine	98.7	97.9	P/P	75 - 128
Sulfentrazone	78.4	92.3	P/P	20 - 132
Tebuconazole	70.6	84.8	P/P	20 - 116
Terbufos	82.0	84.0	P/P	61 - 117
Terbuthylazine	89.5	93.1	P/P	74 - 116

Reference Method: EPA 8321B

Batch ID: P396006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	90.6		P	40 - 150
AMPA	117		P	40 - 150
Endothall	110		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	136		P	40 - 140
Sucralose	109		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P396107

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	126		P	30 - 160
2,4,5-T	106		P	30 - 160
Acetaminophen	94.0		P	30 - 160
Acetamiprid	72.0		P	30 - 160
Afidopyropen	76.5		P	30 - 160
Bentazon	126		P	30 - 160
Benzovindiflupyr	91.5		P	30 - 160
Carbamazepine	99.0		P	30 - 160
Clothianidin	112		P	30 - 160
Dinotefuran	90.4		P	30 - 160
Diuron	71.7		P	30 - 160
Fenuron	76.4		P	30 - 160
Fluridone	105		P	30 - 160
Hydrocodone	103		P	30 - 160
Ibuprofen	90.1		P	30 - 160
Imazapyr	108		P	30 - 160
Imidacloprid	107		P	30 - 160
Linuron	80.4		P	30 - 160
Mandestrobin	94.7		P	30 - 160
MCPP	141		P	30 - 160
Naproxen	75.7		P	30 - 160
Primidone	89.6		P	30 - 160
Pyraclostrobin	78.6		P	30 - 160
Thiamethoxam	103		P	30 - 160
Tolfenpyrad	54.2		P	30 - 160
Triclopyr	114		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P396011

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	108		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P396148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P396150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P396367

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

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P396204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235857	Calcium	108		P	80 - 120
2235857	Iron	114		P	80 - 120
2235857	Magnesium	115		P	80 - 120
2235857	Potassium	94.8		P	80 - 120
2235857	Sodium	98.0		P	80 - 120
2235857	Strontium	97.0		P	80 - 120
2235857	Tin	99.9		P	80 - 120
2235857	Titanium	109		P	80 - 120
2235857	Vanadium	102		P	80 - 120
2235857	Zinc	98.7		P	80 - 120
2237352	Calcium	87.2		P	80 - 120
2237352	Iron	104	101	P/P	80 - 120
2237352	Magnesium	84.0		P	80 - 120
2237352	Potassium	91.3	87.9	P/P	80 - 120
2237352	Sodium	97.9	93.0	P/P	80 - 120
2237352	Strontium	95.7	97.8	P/P	80 - 120
2237352	Tin	99.5	96.4	P/P	80 - 120
2237352	Titanium	99.2	105	P/P	80 - 120
2237352	Vanadium	105	100	P/P	80 - 120
2237352	Zinc	96.8	93.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P396204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235857	Aluminum	94.8		P	80 - 120
2235857	Antimony	94.2		P	80 - 120
2235857	Arsenic	94.3		P	80 - 120
2235857	Barium	94.4		P	80 - 120
2235857	Beryllium	96.4		P	80 - 120
2235857	Boron	94.5		P	80 - 120
2235857	Cadmium	99.1		P	80 - 120
2235857	Chromium	92.4		P	80 - 120
2235857	Cobalt	94.0		P	80 - 120
2235857	Copper	93.3		P	80 - 120
2235857	Lead	100		P	80 - 120
2235857	Manganese	97.5		P	80 - 120
2235857	Molybdenum	95.8		P	80 - 120
2235857	Nickel	90.9		P	80 - 120
2235857	Selenium	91.9		P	80 - 120
2235857	Silver	99.7		P	80 - 120
2235857	Thallium	101		P	80 - 120
2237352	Aluminum	83.3	93.3	P/P	80 - 120
2237352	Antimony	92.3	97.7	P/P	80 - 120
2237352	Arsenic	90.5	95.0	P/P	80 - 120
2237352	Barium	90.9	97.8	P/P	80 - 120
2237352	Beryllium	97.0	98.7	P/P	80 - 120
2237352	Boron	90.6	95.3	P/P	80 - 120
2237352	Cadmium	102	104	P/P	80 - 120
2237352	Chromium	90.0	95.3	P/P	80 - 120
2237352	Cobalt	91.0	96.3	P/P	80 - 120
2237352	Copper	88.1	93.3	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P396204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2237352	Lead	98.5	102	P/P	80 - 120
2237352	Manganese	90.8	104	P/P	80 - 120
2237352	Molybdenum	90.5	97.3	P/P	80 - 120
2237352	Nickel	87.9	93.2	P/P	80 - 120
2237352	Selenium	87.9	92.8	P/P	80 - 120
2237352	Silver	104	102	P/P	80 - 120
2237352	Thallium	97.5	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235761	Chloride	99.1		P	90 - 110
2236144	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P396343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235761	Sulfate	99.1		P	90 - 110
2236144	Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P396651

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236193	Ammonia-N	96.2	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236145	Kjeldahl Nitrogen	92.2	96.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P396274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236145	NO2NO3-N	97.4	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P396097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236186	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P396001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236235	O-Phosphate-P	98.7	97.0	P/P	90 - 110

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P395927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235662	Acetochlor	92.0	93.1	P/P	66 - 122
2235662	Alachlor	88.9	87.4	P/P	65 - 122
2235662	Ametryn	84.4	67.9	P/P	45 - 173
2235662	Atrazine Desethyl	105	105	P/P	25 - 150
2235662	Azinphos Methyl	136	126	P/P	44 - 174
2235662	Azoxystrobin	177	185	P/P	10 - 268
2235662	Bromacil	90.4	78.6	P/P	31 - 145
2235662	Butylate	36.8	47.4	P/P	15 - 97.0
2235662	Caffeine	81.8	95.9	P/P	70 - 130
2235662	Carbophenothion	94.2	89.4	P/P	42 - 129
2235662	Carfentrazone Ethyl	105	98.1	P/P	62 - 145
2235662	Chlorpyrifos Ethyl	87.6	81.2	P/P	60 - 124
2235662	Chlorpyrifos Methyl	97.7	94.2	P/P	66 - 119
2235662	Cyanazine	108	113	P/P	17 - 225
2235662	Demeton	80.6	82.2	P/P	36 - 142
2235662	Diazinon	99.8	101	P/P	70 - 128
2235662	Difenoconazole	153	156	P/P	33 - 222
2235662	Dimethenamid	90.4	90.6	P/P	54 - 125
2235662	Disulfoton	97.3	90.3	P/P	49 - 133
2235662	Dithiopyr	86.4	86.1	P/P	55 - 123
2235662	EPTC	34.8	48.1	P/P	19 - 91.0
2235662	Ethion	83.0	92.3	P/P	13 - 143
2235662	Ethoprop	94.5	98.9	P/P	49 - 144
2235662	Fenamiphos	79.5	85.6	P/P	32 - 136
2235662	Fenbuconazole	115	117	P/P	73 - 148
2235662	Fipronil	106	102	P/P	57 - 129
2235662	Fipronil Desulfinyl	104	97.7	P/P	49 - 127
2235662	Fipronil Sulfide	92.4	90.8	P/P	44 - 127
2235662	Fipronil Sulfone	84.1	85.2	P/P	35 - 126
2235662	Fluazifop-P-butyl	99.9	101	P/P	67 - 129
2235662	Fludioxonil	103	100	P/P	61 - 126
2235662	Flumioxazin	200	193	P/P	38 - 279
2235662	Flutolanil	90.1	92.7	P/P	55 - 136
2235662	Fluxapyroxad	91.1	92.2	P/P	33 - 140
2235662	Fonofos	86.8	88.0	P/P	58 - 125
2235662	Hexazinone	96.6	98.2	P/P	57 - 148
2235662	Imazalil	92.4	99.6	P/P	10 - 221
2235662	Iprodione	101	99.4	P/P	32 - 140
2235662	Malathion	104	103	P/P	52 - 138
2235662	Metalaxyl	102	98.4	P/P	46 - 134
2235662	Metolachlor	83.9	85.3	P/P	58 - 122
2235662	Metribuzin	119	114	P/P	16 - 272
2235662	Mevinphos	86.8	87.1	P/P	45 - 140
2235662	Molinate	54.6	63.6	P/P	41 - 103
2235662	Myclobutanil	97.2	97.1	P/P	60 - 134
2235662	Naled	40.9	48.7	P/P	20 - 113
2235662	Norflurazon	96.7	91.7	P/P	51 - 123
2235662	Oxyfluorfen	122	122	P/P	66 - 176
2235662	Parathion Ethyl	89.8	96.1	P/P	57 - 132
2235662	Parathion Methyl	115	109	P/P	59 - 156
2235662	Pendimethalin	100	95.5	P/P	59 - 129
2235662	Phorate	93.4	90.1	P/P	47 - 136

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P395927

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235662	Prodiamine	83.5	53.9	P/P	10 - 159
2235662	Prometon	100	95.3	P/P	59 - 127
2235662	Prometryn	98.1	96.8	P/P	59 - 129
2235662	Pronamide	93.7	83.8	P/P	65 - 145
2235662	Propiconazole	91.2	82.0	P/P	28 - 165
2235662	Pyriproxyfen	92.9	94.0	P/P	21 - 180
2235662	Sulfentrazone	104	104	P/P	32 - 136
2235662	Tebuconazole	75.2	75.8	P/P	10 - 117
2235662	Terbufos	88.6	91.5	P/P	61 - 131
2235662	Terbuthylazine	94.2	92.6	P/P	62 - 126

Reference Method: EPA 8321B

Batch ID: P396006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236205	Acesulfame K	131	122	P/P	40 - 150
2236205	AMPA	108	118	P/P	40 - 150
2236205	Endothall	79.5	85.2	P/P	40 - 150
2236205	Glufosinate	96.1	106	P/P	40 - 150
2236205	Glyphosate	127	135	P/P	40 - 140
2236205	Sucralose	120	123	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P396107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236205	2,4-D	143	138	P/P	30 - 160
2236205	2,4,5-T	107	118	P/P	30 - 160
2236205	Acetaminophen	129	115	P/P	30 - 160
2236205	Acetamiprid	98.1	97.0	P/P	30 - 160
2236205	Afidopyropen	82.9	69.8	P/P	30 - 160
2236205	Bentazon	80.2	85.5	P/P	30 - 160
2236205	Benzovindiflupyr	96.0	91.0	P/P	30 - 160
2236205	Carbamazepine	97.6	97.5	P/P	30 - 160
2236205	Clothianidin	138	132	P/P	30 - 160
2236205	Dinotefuran	124	125	P/P	30 - 160
2236205	Diuron	57.0	55.9	P/P	30 - 160
2236205	Fenuron	78.4	78.8	P/P	30 - 160
2236205	Fluridone	95.8	96.3	P/P	30 - 160
2236205	Hydrocodone	115	125	P/P	30 - 160
2236205	Ibuprofen	80.1	78.6	P/P	30 - 160
2236205	Imazapyr	151	89.6	P/P	30 - 160
2236205	Imidacloprid	150	143	P/P	30 - 160
2236205	Linuron	71.9	69.3	P/P	30 - 160
2236205	Mandestrobin	94.0	91.5	P/P	30 - 160
2236205	MCCP	132	140	P/P	30 - 160
2236205	Naproxen	92.3	83.3	P/P	30 - 160
2236205	Primidone	123	119	P/P	30 - 160
2236205	Pyraclostrobin	82.6	81.3	P/P	30 - 160
2236205	Thiamethoxam	152	139	P/P	30 - 160
2236205	Tolfenpyrad	57.1	61.1	P/P	30 - 160
2236205	Triclopyr	112	114	P/P	30 - 160

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P396150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236250	Fluoride	99.5	101	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P396367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236945	Organic Carbon	96.4	95.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P396019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236185	Turbidity	2.84	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P396204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237352	Calcium	3.11	Spike	P	0 - 20
2237352	Iron	2.15	Spike	P	0 - 20
2237352	Magnesium	2.86	Spike	P	0 - 20
2237352	Potassium	2.97	Spike	P	0 - 20
2237352	Sodium	2.95	Spike	P	0 - 20
2237352	Strontium	2.15	Spike	P	0 - 20
2237352	Tin	3.14	Spike	P	0 - 20
2237352	Titanium	3.30	Spike	P	0 - 20
2237352	Vanadium	4.65	Spike	P	0 - 20
2237352	Zinc	3.92	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P396204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2237352	Aluminum	8.01	Spike	P	0 - 20
2237352	Antimony	5.72	Spike	P	0 - 20
2237352	Arsenic	4.85	Spike	P	0 - 20
2237352	Barium	5.76	Spike	P	0 - 20
2237352	Beryllium	1.54	Spike	P	0 - 20
2237352	Boron	4.50	Spike	P	0 - 20
2237352	Cadmium	2.60	Spike	P	0 - 20
2237352	Chromium	5.53	Spike	P	0 - 20
2237352	Cobalt	5.59	Spike	P	0 - 20
2237352	Copper	5.74	Spike	P	0 - 20
2237352	Lead	3.35	Spike	P	0 - 20
2237352	Manganese	6.59	Spike	P	0 - 20
2237352	Molybdenum	7.07	Spike	P	0 - 20
2237352	Nickel	5.88	Spike	P	0 - 20
2237352	Selenium	5.43	Spike	P	0 - 20
2237352	Silver	2.03	Spike	P	0 - 20
2237352	Thallium	7.27	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236144	Chloride	0.107	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P396343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236144	Sulfate	0.0995	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236193	Ammonia-N	1.07	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236145	Kjeldahl Nitrogen	2.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P396274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236145	NO2NO3-N	0.897	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P396097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236186	Total-P	1.57	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P396001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236235	O-Phosphate-P	1.57	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P395927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235662	Acetochlor	1.19	Spike	P	0 - 30
2235662	Alachlor	1.71	Spike	P	0 - 30
2235662	Ametryn	21.6	Spike	P	0 - 30
2235662	Atrazine	5.75	Spike	P	0 - 30
2235662	Atrazine Desethyl	0.129	Spike	P	0 - 30
2235662	Azinphos Methyl	8.05	Spike	P	0 - 30
2235662	Azoxystrobin	3.52	Spike	P	0 - 30
2235662	Bromacil	12.0	Spike	P	0 - 30
2235662	Butylate	25.2	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P395927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235662	Caffeine	9.86	Spike	P	0 - 30
2235662	Carbophenothion	5.25	Spike	P	0 - 30
2235662	Carfentrazone Ethyl	6.51	Spike	P	0 - 30
2235662	Chlorpyrifos Ethyl	7.64	Spike	P	0 - 30
2235662	Chlorpyrifos Methyl	3.70	Spike	P	0 - 30
2235662	Cyanazine	4.50	Spike	P	0 - 30
2235662	Demeton	1.94	Spike	P	0 - 30
2235662	Diazinon	1.35	Spike	P	0 - 30
2235662	Difenoconazole	2.08	Spike	P	0 - 30
2235662	Dimethenamid	0.141	Spike	P	0 - 30
2235662	Disulfoton	7.49	Spike	P	0 - 30
2235662	Dithiopyr	0.229	Spike	P	0 - 30
2235662	EPTC	32.2	Spike	F	0 - 30
2235662	Ethion	10.7	Spike	P	0 - 30
2235662	Ethoprop	4.57	Spike	P	0 - 30
2235662	Fenamiphos	7.42	Spike	P	0 - 30
2235662	Fenbuconazole	1.70	Spike	P	0 - 30
2235662	Fipronil	3.98	Spike	P	0 - 30
2235662	Fipronil Desulfinyl	5.76	Spike	P	0 - 30
2235662	Fipronil Sulfide	1.79	Spike	P	0 - 30
2235662	Fipronil Sulfone	1.16	Spike	P	0 - 30
2235662	Fluazifop-P-butyl	1.07	Spike	P	0 - 30
2235662	Fludioxonil	3.14	Spike	P	0 - 30
2235662	Flumioxazin	3.55	Spike	P	0 - 30
2235662	Flutolanil	2.43	Spike	P	0 - 30
2235662	Fluxapyroxad	1.10	Spike	P	0 - 30
2235662	Fonofos	1.41	Spike	P	0 - 30
2235662	Hexazinone	1.58	Spike	P	0 - 30
2235662	Imazalil	7.50	Spike	P	0 - 30
2235662	Iprodione	1.92	Spike	P	0 - 30
2235662	Malathion	0.579	Spike	P	0 - 30
2235662	Metalaxyl	3.93	Spike	P	0 - 30
2235662	Metolachlor	1.08	Spike	P	0 - 30
2235662	Metribuzin	4.21	Spike	P	0 - 30
2235662	Mevinphos	0.403	Spike	P	0 - 30
2235662	Molinate	15.2	Spike	P	0 - 30
2235662	Myclobutanil	0.120	Spike	P	0 - 30
2235662	Naled	17.4	Spike	P	0 - 30
2235662	Norflurazon	5.30	Spike	P	0 - 30
2235662	Oxadiazon	8.47	Spike	P	0 - 30
2235662	Oxyfluorfen	0.638	Spike	P	0 - 30
2235662	Parathion Ethyl	6.84	Spike	P	0 - 30
2235662	Parathion Methyl	5.81	Spike	P	0 - 30
2235662	Pendimethalin	4.74	Spike	P	0 - 30
2235662	Phorate	3.60	Spike	P	0 - 30
2235662	Prodiamine	43.2	Spike	F	0 - 30
2235662	Prometon	5.13	Spike	P	0 - 30
2235662	Prometryn	1.40	Spike	P	0 - 30
2235662	Pronamide	8.65	Spike	P	0 - 30
2235662	Propiconazole	8.17	Spike	P	0 - 30
2235662	Pyriproxyfen	1.13	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P395927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235662	Simazine	9.22	Spike	P	0 - 30
2235662	Sulfentrazone	0.425	Spike	P	0 - 30
2235662	Tebuconazole	0.756	Spike	P	0 - 30
2235662	Terbufos	3.24	Spike	P	0 - 30
2235662	Terbutylazine	1.75	Spike	P	0 - 30
LFB	Acetochlor	0.197	LCS	P	0 - 30
LFB	Alachlor	2.66	LCS	P	0 - 30
LFB	Ametryn	21.9	LCS	P	0 - 30
LFB	Atrazine	6.45	LCS	P	0 - 30
LFB	Atrazine Desethyl	9.25	LCS	P	0 - 30
LFB	Azinphos Methyl	3.36	LCS	P	0 - 30
LFB	Azoxystrobin	12.6	LCS	P	0 - 30
LFB	Bromacil	10.0	LCS	P	0 - 30
LFB	Butylate	24.2	LCS	P	0 - 30
LFB	Caffeine	6.84	LCS	P	0 - 30
LFB	Carbophenothion	8.54	LCS	P	0 - 30
LFB	Carfentrazone Ethyl	4.50	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	15.9	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	3.59	LCS	P	0 - 30
LFB	Cyanazine	3.84	LCS	P	0 - 30
LFB	Demeton	3.18	LCS	P	0 - 30
LFB	Diazinon	0.257	LCS	P	0 - 30
LFB	Difenoconazole	2.42	LCS	P	0 - 30
LFB	Dimethenamid	5.69	LCS	P	0 - 30
LFB	Disulfoton	10.7	LCS	P	0 - 30
LFB	Dithiopyr	5.30	LCS	P	0 - 30
LFB	EPTC	25.3	LCS	P	0 - 30
LFB	Ethion	15.8	LCS	P	0 - 30
LFB	Ethoprop	4.46	LCS	P	0 - 30
LFB	Fenamiphos	8.89	LCS	P	0 - 30
LFB	Fenbuconazole	5.92	LCS	P	0 - 30
LFB	Fipronil	2.11	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	2.56	LCS	P	0 - 30
LFB	Fipronil Sulfide	4.66	LCS	P	0 - 30
LFB	Fipronil Sulfone	13.9	LCS	P	0 - 30
LFB	Fluazifop-P-butyl	1.67	LCS	P	0 - 30
LFB	Fludioxonil	2.39	LCS	P	0 - 30
LFB	Flumioxazin	6.33	LCS	P	0 - 30
LFB	Flutolanil	2.49	LCS	P	0 - 30
LFB	Fluxapyroxad	4.26	LCS	P	0 - 30
LFB	Fonofos	0.628	LCS	P	0 - 30
LFB	Hexazinone	7.88	LCS	P	0 - 30
LFB	Imazalil	24.8	LCS	P	0 - 30
LFB	Iprodione	4.17	LCS	P	0 - 30
LFB	Malathion	2.45	LCS	P	0 - 30
LFB	Metalaxyl	0.824	LCS	P	0 - 30
LFB	Metolachlor	4.77	LCS	P	0 - 30
LFB	Metribuzin	3.08	LCS	P	0 - 30
LFB	Mevinphos	4.39	LCS	P	0 - 30
LFB	Molinate	17.6	LCS	P	0 - 30
LFB	Myclobutanil	2.42	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P395927

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Naled	1.62	LCS	P	0 - 30
LFB	Norflurazon	4.12	LCS	P	0 - 30
LFB	Oxadiazon	5.87	LCS	P	0 - 30
LFB	Oxyfluorfen	8.45	LCS	P	0 - 30
LFB	Parathion Ethyl	2.16	LCS	P	0 - 30
LFB	Parathion Methyl	5.05	LCS	P	0 - 30
LFB	Pendimethalin	4.60	LCS	P	0 - 30
LFB	Phorate	12.5	LCS	P	0 - 30
LFB	Prodiamine	9.01	LCS	P	0 - 30
LFB	Prometon	3.06	LCS	P	0 - 30
LFB	Prometryn	3.25	LCS	P	0 - 30
LFB	Pronamide	1.61	LCS	P	0 - 30
LFB	Propiconazole	4.52	LCS	P	0 - 30
LFB	Pyriproxyfen	1.70	LCS	P	0 - 30
LFB	Simazine	0.755	LCS	P	0 - 30
LFB	Sulfentrazone	16.4	LCS	P	0 - 30
LFB	Tebuconazole	18.3	LCS	P	0 - 30
LFB	Terbufos	2.48	LCS	P	0 - 30
LFB	Terbutylazine	3.92	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P396006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236205	Acesulfame K	6.75	Spike	P	0 - 30
2236205	AMPA	9.49	Spike	P	0 - 30
2236205	Endothall	6.82	Spike	P	0 - 30
2236205	Glufosinate	9.58	Spike	P	0 - 30
2236205	Glyphosate	5.77	Spike	P	0 - 30
2236205	Sucralose	2.06	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P396107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236205	2,4-D	3.56	Spike	P	0 - 30
2236205	2,4,5-T	9.44	Spike	P	0 - 30
2236205	Acetaminophen	11.3	Spike	P	0 - 30
2236205	Acetamiprid	1.11	Spike	P	0 - 30
2236205	Afidopyropen	17.1	Spike	P	0 - 30
2236205	Bentazon	6.44	Spike	P	0 - 30
2236205	Benzovindiflupyr	5.43	Spike	P	0 - 30
2236205	Carbamazepine	0.159	Spike	P	0 - 30
2236205	Clothianidin	4.12	Spike	P	0 - 30
2236205	Dinotefuran	0.574	Spike	P	0 - 30
2236205	Diuron	2.01	Spike	P	0 - 30
2236205	Fenuron	0.542	Spike	P	0 - 30
2236205	Fluridone	0.558	Spike	P	0 - 30
2236205	Hydrocodone	8.21	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P396107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236205	Ibuprofen	1.85	Spike	P	0 - 30
2236205	Imazapyr	45.5	Spike	F	0 - 30
2236205	Imidacloprid	4.35	Spike	P	0 - 30
2236205	Linuron	3.75	Spike	P	0 - 30
2236205	Mandestrobin	2.71	Spike	P	0 - 30
2236205	MCPP	5.55	Spike	P	0 - 30
2236205	Naproxen	10.3	Spike	P	0 - 30
2236205	Primidone	3.17	Spike	P	0 - 30
2236205	Pyraclostrobin	1.56	Spike	P	0 - 30
2236205	Thiamethoxam	9.22	Spike	P	0 - 30
2236205	Tolfenpyrad	6.77	Spike	P	0 - 30
2236205	Triclopyr	1.28	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P396011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236185	Color (true)	4.77	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P396148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236250	Total Alkalinity	0.662	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P396618

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236842	TDS	6.11	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P396150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236250	Fluoride	0.902	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236945	Organic Carbon	1.05	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2236205

Field Sample ID: G1WA0075

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	133	P	30 - 160
EPA 8321B	Acetaminophen-d4	110	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.3	P	30 - 160
EPA 8321B	Diuron-d6	66.4	P	30 - 160
EPA 8321B	Endothall-d6	114	P	40 - 160
EPA 8321B	Endothall-d6	114	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	134	P	40 - 160
EPA 8321B	Ibuprofen-d3	89.8	P	30 - 160
EPA 8321B	Primidone-d5	127	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Lab Sample ID: 2236207

Field Sample ID: G1WA0075

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Caffeine-d9	84.4	P	20 - 200
EPA 8270E	Simazine-d10	124	P	73 - 135
EPA 8270E	Terbufos-d10	129	P	58 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A104495

Included Lab Sample IDs: 2236199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	99.7	P/P	90 - 110
Sulfate	97.9	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104511

Included Lab Sample IDs: 2236201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A104514

Included Lab Sample IDs: 2236199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	108	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104515

Included Lab Sample IDs: 2236199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105

Reference Method: SM 2320 B-2011

Run ID: A104570

Included Lab Sample IDs: 2236199

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104570

Included Lab Sample IDs: 2236199

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

Reference Method: EPA 8321B

Run ID: A104605

Included Lab Sample IDs: 2236205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	89.8	93.9	P/P	50 - 150
2,4,5-T	91.0	103	P/P	50 - 150
Acetaminophen	82.7	87.7	P/P	60 - 160
Acetamiprid	123	112	P/P	50 - 150
Afidopyropen	112	106	P/P	50 - 150
Bentazon	121	116	P/P	50 - 160
Benzovindiflupyr	124	122	P/P	50 - 160
Carbamazepine	123	118	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A104605
Included Lab Sample IDs: 2236205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Clothianidin	123	123	P/P	60 - 150
Dinotefuran	104	116	P/P	50 - 150
Diuron	107	108	P/P	60 - 160
Fenuron	104	103	P/P	60 - 150
Fluridone	131	136	P/P	60 - 160
Hydrocodone	107	111	P/P	60 - 150
Ibuprofen	130	109	P/P	50 - 160
Imazapyr	99.2	127	P/P	50 - 160
Imidacloprid	101	100	P/P	60 - 150
Linuron	115	117	P/P	60 - 150
Mandestrobin	115	121	P/P	50 - 150
MCPP	106	108	P/P	50 - 150
Naproxen	86.9	141	P/P	50 - 160
Primidone	109	118	P/P	60 - 150
Pyraclostrobin	110	116	P/P	60 - 150
Thiamethoxam	108	99.4	P/P	50 - 150
Tolfenpyrad	105	114	P/P	60 - 150
Triclopyr	100	101	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A104606
Included Lab Sample IDs: 2236200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A104617
Included Lab Sample IDs: 2236200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A104618
Included Lab Sample IDs: 2236207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	100		P	80 - 120
Alachlor	99.6		P	80 - 120
Ametryn	92.8		P	80 - 120
Atrazine	91.7		P	80 - 120
Atrazine Desethyl	107		P	80 - 120
Azinphos Methyl	102		P	80 - 120
Azoxystrobin	93.8		P	80 - 120
Bromacil	96.9		P	80 - 120
Butylate	91.5		P	80 - 120
Caffeine	101		P	80 - 120
Carbophenothion	97.1		P	80 - 120
Carfentrazone Ethyl	95.2		P	80 - 120
Chlorpyrifos Ethyl	103		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A104618

Included Lab Sample IDs: 2236207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorpyrifos Methyl	99.1		P	80 - 120
Cyanazine	94.2		P	80 - 120
Demeton	99.8		P	80 - 120
Diazinon	97.9		P	80 - 120
Difenoconazole	95.4		P	80 - 120
Dimethenamid	96.9		P	80 - 120
Disulfoton	94.8		P	80 - 120
Dithiopyr	98.5		P	80 - 120
EPTC	96.2		P	80 - 120
Ethion	95.6		P	80 - 120
Ethoprop	103		P	80 - 120
Fenamiphos	96.9		P	80 - 120
Fenbuconazole	97.9		P	80 - 120
Fipronil	95.2		P	80 - 120
Fipronil Desulfinyl	96.1		P	80 - 120
Fipronil Sulfide	95.7		P	80 - 120
Fipronil Sulfone	94.8		P	80 - 120
Fluazifop-P-butyl	95.0		P	80 - 120
Fludioxonil	98.0		P	80 - 120
Flumioxazin	97.2		P	80 - 120
Flutolanil	88.8		P	80 - 120
Fluxapyroxad	91.1		P	80 - 120
Fonofos	105		P	80 - 120
Hexazinone	107		P	80 - 120
Imazalil	98.3		P	80 - 120
Iprodione	96.3		P	80 - 120
Malathion	103		P	80 - 120
Metalaxyl	98.3		P	80 - 120
Metolachlor	97.2		P	80 - 120
Metribuzin	102		P	80 - 120
Mevinphos	102		P	80 - 120
Molinate	98.6		P	80 - 120
Myclobutanil	93.1		P	80 - 120
Naled	103		P	80 - 120
Norflurazon	95.7		P	80 - 120
Oxadiazon	98.6		P	80 - 120
Oxyfluorfen	97.2		P	80 - 120
Parathion Ethyl	91.7		P	80 - 120
Parathion Methyl	101		P	80 - 120
Pendimethalin	99.6		P	80 - 120
Phorate	102		P	80 - 120
Prodiamine	103		P	80 - 120
Prometon	96.0		P	80 - 120
Prometryn	96.3		P	80 - 120
Pronamide	97.3		P	80 - 120
Propiconazole	93.4		P	80 - 120
Pyriproxyfen	98.1		P	80 - 120
Simazine	95.3		P	80 - 120
Sulfentrazone	98.2		P	80 - 120
Tebuconazole	96.5		P	80 - 120
Terbufos	97.3		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A104618
Included Lab Sample IDs: 2236207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Terbutylazine	95.4		P	80 - 120

Reference Method: EPA 8321B
Run ID: A104623
Included Lab Sample IDs: 2236205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	101	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A104624
Included Lab Sample IDs: 2236205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	93.7	103	P/P	40 - 160
AMPA	112	115	P/P	40 - 160
Endothall	80.7	85.3	P/P	40 - 160
Glufosinate	98.3	95.8	P/P	40 - 160
Glyphosate	138	132	P/P	40 - 160

Reference Method: SM 5310 B-2011
Run ID: A104663
Included Lab Sample IDs: 2236200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	96.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A104729
Included Lab Sample IDs: 2236200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A104770
Included Lab Sample IDs: 2236200

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.7	97.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A104772
Included Lab Sample IDs: 2236206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	106	103	P/P	90 - 110
Iron	104	101	P/P	90 - 110
Magnesium	103	101	P/P	90 - 110
Potassium	99.0	95.6	P/P	90 - 110
Sodium	99.1	95.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104772

Included Lab Sample IDs: 2236206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	98.2	96.0	P/P	90 - 110
Titanium	100	98.5	P/P	90 - 110
Vanadium	99.7	98.0	P/P	90 - 110
Zinc	101	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104778

Included Lab Sample IDs: 2236206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	99.2	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	97.7	96.6	P/P	90 - 110
Barium	99.3	99.8	P/P	90 - 110
Boron	100	98.4	P/P	90 - 110
Chromium	98.4	98.4	P/P	90 - 110
Cobalt	100	100	P/P	90 - 110
Copper	95.1	93.9	P/P	90 - 110
Manganese	99.4	99.0	P/P	90 - 110
Molybdenum	98.5	96.5	P/P	90 - 110
Nickel	95.7	95.7	P/P	90 - 110
Selenium	98.9	97.6	P/P	90 - 110
Thallium	103	101	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104812

Included Lab Sample IDs: 2236206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	97.4	101	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104893

Included Lab Sample IDs: 2236206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	95.5	102	P/P	90 - 110
Cadmium	99.0	99.4	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Silver	98.7	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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							2.84	
EPA 200.7 Rev. 4.4	Calcium	110		108	87.2				3.11
	Iron	104		114	104	101			2.15
	Magnesium	105		115	84.0				2.86
	Potassium	96.3		94.8	91.3	87.9			2.97
	Sodium	101		98.0	97.9	93.0			2.95
	Strontium	89.3		97.0	95.7	97.8			2.15
	Tin	102		99.9	99.5	96.4			3.14
	Titanium	105		99.2	105	109			3.30
	Vanadium	103		102	105	100			4.65
	Zinc	98.6		98.7	96.8	93.0			3.92
EPA 200.8 Rev. 5.4	Aluminum	91.0		83.3	93.3	94.8			8.01
	Antimony	96.9		92.3	97.7	94.2			5.72
	Arsenic	94.3		90.5	95.0	94.3			4.85
	Barium	93.9		90.9	97.8	94.4			5.76
	Beryllium	101		97.0	98.7	96.4			1.54
	Boron	92.1		90.6	95.3	94.5			4.50
	Cadmium	101		102	104	99.1			2.60
	Chromium	92.7		90.0	95.3	92.4			5.53
	Cobalt	94.4		91.0	96.3	94.0			5.59
	Copper	91.4		88.1	93.3	93.3			5.74
	Lead	101		98.5	102	100			3.35
	Manganese	95.2		90.8	104	97.5			6.59
	Molybdenum	93.6		90.5	97.3	95.8			7.07
	Nickel	91.7		87.9	93.2	90.9			5.88
	Selenium	93.4		87.9	92.8	91.9			5.43
	Silver	102		104	102	99.7			2.03
	Thallium	98.5		97.5	105	101			7.27
EPA 300.0 Rev. 2.1	Chloride	97.8		102	99.1			0.107	
	Sulfate	98.2		97.6	99.1			0.0995	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2		96.2	97.4				1.07
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		92.2	96.4				2.17
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		96.4	97.4				0.897
EPA 365.1 Rev. 2.0	Total-P	103		103	104				1.57
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.5		98.7	97.0				1.57
EPA 8270E	Acetochlor	93.6	93.4	92.0	93.1	0.197			1.19
	Alachlor	94.7	92.2	88.9	87.4	2.66			1.71
	Ametryn	78.4	63.0	84.4	67.9	21.9			21.6
	Atrazine	98.9	92.7			6.45			5.75
	Atrazine Desethyl	108	98.8	105	105	9.25			0.129
	Azinphos Methyl	131	127	126	136	3.36			8.05
	Azoxystrobin	181	159	185	177	12.6			3.52
	Bromacil	89.5	80.9	78.6	90.4	10.0			12.0
	Butylate	60.8	47.7	47.4	36.8	24.2			25.2
	Caffeine	70.6	75.6	81.8	95.9	6.84			9.86
	Carbophenothion	94.6	86.8	94.2	89.4	8.54			5.25
	Carfentrazone Ethyl	107	102	105	98.1	4.50			6.51
	Chlorpyrifos Ethyl	90.8	77.4	87.6	81.2	15.9			7.64
	Chlorpyrifos Methyl	94.4	91.1	97.7	94.2	3.59			3.70
	Cyanazine	122	126	108	113	3.84			4.50
	Demeton	78.0	75.5	80.6	82.2	3.18			1.94
	Diazinon	99.8	99.5	99.8	101	0.257			1.35
	Difenoconazole	145	149	153	156	2.42			2.08
	Dimethenamid	92.4	87.3	90.4	90.6	5.69			0.141

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Disulfoton	89.2	80.1	97.3	90.3	10.7	7.49
	Dithiopyr	89.0	84.4	86.4	86.1	5.30	0.229
	EPTC	48.6	62.7	34.8	48.1	25.3	32.2
	Ethion	92.6	79.0	83.0	92.3	15.8	10.7
	Ethoprop	87.0	91.0	94.5	98.9	4.46	4.57
	Fenamiphos	97.7	89.4	79.5	85.6	8.89	7.42
	Fenbuconazole	107	114	115	117	5.92	1.70
	Fipronil	95.8	97.8	106	102	2.11	3.98
	Fipronil Desulfinyl	98.3	95.8	104	97.7	2.56	5.76
	Fipronil Sulfide	86.5	82.5	92.4	90.8	4.66	1.79
	Fipronil Sulfone	90.7	79.0	85.2	84.1	13.9	1.16
	Fluazifop-P-butyl	98.1	96.4	101	99.9	1.67	1.07
	Fludioxonil	104	101	100	103	2.39	3.14
	Flumioxazin	175	165	193	200	6.33	3.55
	Flutolanil	94.3	92.0	92.7	90.1	2.49	2.43
	Fluxapyroxad	89.9	86.2	92.2	91.1	4.26	1.10
	Fonofos	84.5	85.0	88.0	86.8	0.628	1.41
	Hexazinone	99.7	92.1	98.2	96.6	7.88	1.58
	Imazalil	112	87.5	99.6	92.4	24.8	7.50
	Iprodione	99.9	95.9	99.4	101	4.17	1.92
	Malathion	100	98.0	103	104	2.45	0.579
	Metalaxyl	97.2	96.4	98.4	102	0.824	3.93
	Metolachlor	90.2	86.0	85.3	83.9	4.77	1.08
	Metribuzin	105	108	114	119	3.08	4.21
	Mevinphos	71.7	74.9	87.1	86.8	4.39	0.403
	Molinate	67.4	56.5	63.6	54.6	17.6	15.2
	Myclobutanil	91.7	93.9	97.1	97.2	2.42	0.120
	Naled	47.6	46.9	48.7	40.9	1.62	17.4
	Norflurazon	94.6	98.5	91.7	96.7	4.12	5.30
	Oxadiazon	88.7	94.0			5.87	8.47
	Oxyfluorfen	106	116	122	122	8.45	0.638
	Parathion Ethyl	90.0	91.9	96.1	89.8	2.16	6.84
	Parathion Methyl	104	109	109	115	5.05	5.81
	Pendimethalin	84.7	88.7	95.5	100	4.60	4.74
	Phorate	83.5	73.7	90.1	93.4	12.5	3.60
	Prodiamine	45.2	49.5	53.9	83.5	9.01	43.2
	Prometon	88.4	91.2	95.3	100	3.06	5.13
	Prometryn	94.4	97.5	96.8	98.1	3.25	1.40
	Pronamide	95.3	96.9	83.8	93.7	1.61	8.65
	Propiconazole	91.9	96.1	82.0	91.2	4.52	8.17
	Pyriproxyfen	92.5	94.1	94.0	92.9	1.70	1.13
	Simazine	98.7	97.9			0.755	9.22
	Sulfentrazone	78.4	92.3	104	104	16.4	0.425
	Tebuconazole	70.6	84.8	75.8	75.2	18.3	0.756
	Terbufos	82.0	84.0	91.5	88.6	2.48	3.24
	Terbuthylazine	89.5	93.1	92.6	94.2	3.92	1.75
EPA 8321B	2,4-D	126		143	138		3.56
	2,4,5-T	106		107	118		9.44
	Acesulfame K	90.6		131	122		6.75
	Acetaminophen	94.0		129	115		11.3
	Acetamiprid	72.0		98.1	97.0		1.11
	Afidopyropen	76.5		82.9	69.8		17.1
	AMPA	117		108	118		9.49
	Bentazon	126		80.2	85.5		6.44

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8321B	Benzovindiflupyr	91.5	96.0	91.0			5.43
	Carbamazepine	99.0	97.6	97.5			0.159
	Clothianidin	112	138	132			4.12
	Dinotefuran	90.4	124	125			0.574
	Diuron	71.7	57.0	55.9			2.01
	Endothall	110	79.5	85.2			6.82
	Fenuron	76.4	78.4	78.8			0.542
	Fluridone	105	95.8	96.3			0.558
	Glufosinate	106	96.1	106			9.58
	Glyphosate	136	127	135			5.77
	Hydrocodone	103	115	125			8.21
	Ibuprofen	90.1	80.1	78.6			1.85
	Imazapyr	108	151	89.6			45.5
	Imidacloprid	107	150	143			4.35
	Linuron	80.4	71.9	69.3			3.75
	Mandestrobin	94.7	94.0	91.5			2.71
	MCPP	141	132	140			5.55
	Naproxen	75.7	92.3	83.3			10.3
	Primidone	89.6	123	119			3.17
	Pyraclostrobin	78.6	82.6	81.3			1.56
	Sucralose	109	120	123			2.06
	Thiamethoxam	103	152	139			9.22
	Tolfenpyrad	54.2	57.1	61.1			6.77
	Triclopyr	114	112	114			1.28
SM 2120 B-2011	Color (true)	108				4.77	
SM 2320 B-2011	Total Alkalinity	99.6				0.662	
SM 2540 C-2011	TDS					6.11	
SM 4500 F-C-2011	Fluoride	101	99.5	101			0.902
SM 5310 B-2011	Organic Carbon	96.2	96.4	95.3			1.05

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2236199
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2236206
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2236206
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2236199
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2236199
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2236200
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2236200
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2236200
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2236200
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2236201
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2236207
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2236205
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2236205
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2236199
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2236199
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2236206
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2236199

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2236199
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2236199
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2236200

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	04/05/2021			04/06/2021 17:38	Yen Ta	2236199
EPA 200.7 Rev. 4.4	04/05/2021	04/08/2021 16:30	Elliott D. Healy	04/15/2021 17:31	Betina Topolski	2236206
	04/05/2021	04/08/2021 16:30	Elliott D. Healy	04/16/2021 13:54	Betina Topolski	2236206
EPA 200.8 Rev. 5.4	04/05/2021	04/08/2021 16:30	Elliott D. Healy	04/15/2021 16:29	McKinley C Carter	2236206
	04/05/2021	04/08/2021 16:30	Elliott D. Healy	04/21/2021 15:20	Alexander Thompson	2236206
EPA 300.0 Rev. 2.1	04/05/2021			04/10/2021 01:10	Lipi Saha	2236199
EPA 350.1 Rev. 2.0	04/05/2021			04/15/2021 19:45	Ping Hua	2236200
EPA 351.2 Rev. 2.0	04/05/2021	04/12/2021 14:15	Yen Ta	04/14/2021 15:39	Virginia P. Brown	2236200
EPA 353.2 Rev. 2.0	04/05/2021			04/09/2021 11:14	Beverly Y. Sanders	2236200
EPA 365.1 Rev. 2.0	04/05/2021	04/07/2021 21:26	Madeline Gruver	04/09/2021 10:19	Shengyu Ding	2236200
EPA 365.1 Rev. 2.0 dissolved	04/05/2021			04/06/2021 12:40	Lipi Saha	2236201
EPA 8270E	04/05/2021	04/06/2021 08:30	Rasheda Ghaffari	04/07/2021 18:04	Michael Poppell	2236207
EPA 8321B	04/05/2021	04/07/2021 14:00	Rebecca Ware	04/07/2021 16:02	Rebecca Ware	2236205
	04/05/2021	04/07/2021 14:00	Rebecca Ware	04/08/2021 14:01	Rebecca Ware	2236205
	04/05/2021	04/08/2021 10:00	Hoor Shaik	04/09/2021 07:02	Juyoung Kim	2236205
SM 2120 B-2011	04/05/2021			04/06/2021 16:34	Benjamin T. Nordmann	2236199
SM 2320 B-2011	04/05/2021			04/08/2021 03:53	Dale L. Simmons	2236199
SM 2340B	04/05/2021			04/15/2021 17:31	Betina Topolski	2236206
SM 2540 C-2011	04/05/2021			04/09/2021 15:36	Yijie Li	2236199
SM 2540 D-2011	04/05/2021			04/07/2021 13:25	Yijie Li	2236199
SM 4500 F-C-2011	04/05/2021			04/08/2021 03:53	Dale L. Simmons	2236199
SM 5310 B-2011	04/05/2021			04/09/2021 20:21	Touraj Touran	2236200