

Chemical Analysis Report

CEN-DIST-2021-10-01-01

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

Event Description: **Tributary to Econlockhatchee SCI**
Request ID: **RQ-2021-09-27-36**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 28-OCT-2021 13:46

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

Case Narrative

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

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

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

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

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: Econ River Trib @ 170m N of Jay Blanchard Trail

Collection Date/Time: 09/30/2021 13:00

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2279966	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P404481	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P404719	
		Sulfate	4.0		mg SO4/L	P404721	
	SM 2120 B-2011	Color (true)	100		PCU	P404472	
	SM 2320 B-2011	Total Alkalinity	47		mg CaCO3/L	P404825	
	SM 2540 C-2011	TDS	122		mg/L	P404940	
	SM 2540 D-2011	TSS	5	I	mg/L	P404898	
2279967	SM 4500 F-C-2011	Fluoride	0.045	I	mg F/L	P404696	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P404889	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.61		mg N/L	P404590	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.20		mg N/L	P404779	
	EPA 365.1 Rev. 2.0	Total-P	0.064		mg P/L	P404672	
2279968	SM 5310 B-2011	Organic Carbon	12		mg C/L	P404845	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P404469	
2279973	EPA 8321B	2,4-D	0.16		ug/L	P404499	
		Acesulfame K	0.16	I	ug/L	P404444	
		2,4,5-T	0.0040	U	ug/L	P404499	
		AMPA	0.40		ug/L	P404444	
		Acetaminophen	0.0080	U	ug/L	P404499	RPD
		Acetamiprid	0.0020	U	ug/L	P404499	
		Endothall	0.25	U	ug/L	P404444	
		Glufosinate	0.10	U	ug/L	P404444	
		Glyphosate	1.3		ug/L	P404444	
		Afidopyropen	0.0020	U	ug/L	P404499	
		Bentazon	0.18		ug/L	P404499	
		Sucralose	0.27		ug/L	P404444	
		Benzovindiflupyr	0.0020	U	ug/L	P404499	
		Carbamazepine	8.0E-04	U	ug/L	P404499	
		Clothianidin	0.0092		ug/L	P404499	
		Dinotefuran	0.0027	I	ug/L	P404499	
		Diuron	0.0071	I	ug/L	P404499	
		Fenuron	0.016	U	ug/L	P404499	
		Fluridone	0.022		ug/L	P404499	
		Imazapyr	0.74		ug/L	P404499	
		Hydrocodone	0.0020	U	ug/L	P404499	
		Ibuprofen	0.020	U	ug/L	P404499	
		Imidacloprid	0.040		ug/L	P404499	
		Linuron	0.0040	U	ug/L	P404499	
		Mandestrobin	0.0020	U	ug/L	P404499	
		MCP	0.0061	I	ug/L	P404499	
		Naproxen	0.0080	U	ug/L	P404499	
		Primidone	0.0040	U	ug/L	P404499	

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2279973	EPA 8321B	Pyraclostrobin	0.0020	U	ug/L	P404499	
		Thiamethoxam	0.0020	U	ug/L	P404499	
		Tolfenpyrad	0.0020	U	ug/L	P404499	
		Triclopyr	0.0040	U	ug/L	P404499	
2279974	EPA 200.7 Rev. 4.4	Barium	11.3		ug/L	P404700	
		Calcium	21.7		mg/L	P404700	
		Iron	340		ug/L	P404700	
		Magnesium	1.43		mg/L	P404700	
		Manganese	7.2		ug/L	P404700	
		Potassium	1.3		mg/L	P404700	
		Sodium	8.4		mg/L	P404700	
	EPA 200.8 Rev. 5.4	Zinc	5.8	I	ug/L	P404700	
		Aluminum	167		ug/L	P404700	
		Antimony	0.10	I	ug/L	P404700	
		Arsenic	0.64		ug/L	P404700	
		Beryllium	0.010	I	ug/L	P404700	
		Boron**	26.6		ug/L	P404700	
		Cadmium	0.020	U	ug/L	P404700	
		Chromium	0.63	I	ug/L	P404700	
		Copper	1.23		ug/L	P404700	
		Lead	0.27	I	ug/L	P404700	
		Nickel	0.50	U	ug/L	P404700	
		Selenium	0.20	U	ug/L	P404700	
		Silver	0.010	U	ug/L	P404700	
		Thallium	0.10	U	ug/L	P404700	
		Hardness	60.0		mg/L	P404700	
	SM 2340B						
2279975	EPA 8270E	Acetochlor	0.24	U	ng/L	P404389	
		Alachlor	0.24	U	ng/L	P404389	
		Ametryn	1.6	I	ng/L	P404389	
		Atrazine	42		ng/L	P404389	
		Atrazine Desethyl	5.9		ng/L	P404389	
		Azinphos Methyl	1.9	U	ng/L	P404389	
		Azoxystrobin**	0.48	U	ng/L	P404389	
		Bromacil	0.98	I	ng/L	P404389	
		Butylate	0.38	U	ng/L	P404389	
		Caffeine**	17	I	ng/L	P404389	
		Carbophenothion	0.48	U	ng/L	P404389	
		Carfentrazone Ethyl**	0.13	I	ng/L	P404389	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P404389	
		Chlorpyrifos Methyl	0.078	I	ng/L	P404389	
		Cyanazine	3.1	U	ng/L	P404389	
		Demeton	1.4	U	ng/L	P404389	
		Diazinon	0.12	U	ng/L	P404389	
		Difenoconazole**	0.57	U	ng/L	P404389	
		Dimethenamid**	0.44		ng/L	P404389	

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2279975	EPA 8270E	Disulfoton	0.48	U	ng/L	P404389	
		Dithiopyr**	0.42	I	ng/L	P404389	
		EPTC	1.2	U	ng/L	P404389	
		Ethion	0.14	U	ng/L	P404389	
		Ethoprop	0.095	U	ng/L	P404389	
		Fenamiphos	0.48	U	ng/L	P404389	
		Fenbuconazole**	0.69	J	ng/L	P404389	LCS, MS, RPD
		Fipronil	1.2		ng/L	P404389	
		Fipronil Desulfinyl**	1.2		ng/L	P404389	
		Fipronil Sulfide	1.3		ng/L	P404389	
		Fipronil Sulfone	2.8		ng/L	P404389	
		Fluazifop-P-butyl**	0.095	U	ng/L	P404389	
		Fludioxonil**	0.20	I	ng/L	P404389	
		Flumioxazin**	36		ng/L	P404389	
		Flutolanil**	0.095	U	ng/L	P404389	
		Fluxapyroxad**	0.50		ng/L	P404389	
		Fonofos	0.19	U	ng/L	P404389	
		Hexazinone	0.48	U	ng/L	P404389	
		Imazalil**	0.71	U	ng/L	P404389	
		Iprodione**	0.57	U	ng/L	P404389	
		Malathion	0.33	U	ng/L	P404389	RPD
		Metalaxyl	0.71	U	ng/L	P404389	
		Metolachlor	0.54	I	ng/L	P404389	
		Metribuzin	3.1	U	ng/L	P404389	
		Mevinphos	1.0	U	ng/L	P404389	
		Molinate	0.29	U	ng/L	P404389	
		Myclobutanil**	0.84	I	ng/L	P404389	
		Naled**	1.4	UJ	ng/L	P404389	LCS
		Norflurazon	1.2	I	ng/L	P404389	
		Oxadiazon	0.38	I	ng/L	P404389	MS
		Oxyfluorfen**	0.14	U	ng/L	P404389	
		Parathion Ethyl	0.24	U	ng/L	P404389	
		Parathion Methyl	0.52	U	ng/L	P404389	
		Pendimethalin	0.95	U	ng/L	P404389	
		Phorate	0.50	U	ng/L	P404389	
		Prodiamine**	0.20	I	ng/L	P404389	
		Prometon	0.86	U	ng/L	P404389	
		Prometryn	0.19	U	ng/L	P404389	
		Pronamide**	0.14	U	ng/L	P404389	
		Propiconazole**	1.5	I	ng/L	P404389	
		Pyriproxyfen**	0.12	U	ng/L	P404389	
		Simazine	0.48	U	ng/L	P404389	
		Sulfentrazone**	22		ng/L	P404389	
		Tebuconazole**	1.7	I	ng/L	P404389	

Field ID: G2CE0198

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2279975	EPA 8270E	Terbufos	0.095	U	ng/L	P404389	
		Terbutylazine	0.40	U	ng/L	P404389	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8270E: MS accuracy for some parameters not assessed due to high content of these parameters in the sample spiked. 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: P404481

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P404700

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404700

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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
Copper	0.40	U	ug/L
Lead	0.20	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: P404719

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404721

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404889

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404590

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404779

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P404672

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404469

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

Reference Method: EPA 8270E
Batch ID: P404389

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P404389

Component	Result	Code	Units
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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P404389

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P404444

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: P404499

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: P404472

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P404825

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P404940

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P404898

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P404696

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P404845

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: P404700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	103		P	85 - 115
Calcium	103		P	85 - 115
Iron	109		P	85 - 115
Magnesium	109		P	85 - 115
Manganese	102		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P404700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	109		P	85 - 115
Arsenic	101		P	85 - 115
Beryllium	103		P	85 - 115
Boron	104		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	99.8		P	85 - 115
Copper	96.1		P	85 - 115
Lead	98.5		P	85 - 115
Nickel	97.1		P	85 - 115
Selenium	102		P	85 - 115
Silver	97.7		P	85 - 115
Thallium	105		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404721

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404889

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404590

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P404779

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P404672

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P404469

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

Reference Method: EPA 8270E

Batch ID: P404389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	105	98.2	P/P	70 - 121
Alachlor	93.1	90.0	P/P	70 - 119
Ametryn	99.2	102	P/P	61 - 135
Atrazine	97.0	92.3	P/P	76 - 123
Atrazine Desethyl	67.4	69.3	P/P	35 - 140
Azinphos Methyl	132	129	P/P	57 - 163
Azoxystrobin	93.5	97.7	P/P	43 - 231
Bromacil	74.4	78.3	P/P	42 - 123
Butylate	47.6	37.8	P/P	34 - 92.0
Caffeine	96.9	110	P/P	70 - 130
Carbophenothion	93.0	101	P/P	61 - 121
Carfentrazone Ethyl	107	104	P/P	62 - 139
Chlorpyrifos Ethyl	78.0	87.1	P/P	67 - 121
Chlorpyrifos Methyl	83.8	89.6	P/P	67 - 120
Cyanazine	114	106	P/P	20 - 226
Demeton	78.8	76.8	P/P	35 - 125
Diazinon	101	94.7	P/P	70 - 122
Difenoconazole	130	128	P/P	56 - 186
Dimethenamid	85.1	77.6	P/P	67 - 119
Disulfoton	72.1	82.3	P/P	47 - 120
Dithiopyr	83.0	90.0	P/P	67 - 118
EPTC	49.3	48.3	P/P	33 - 90.0
Ethion	81.0	76.4	P/P	40 - 133
Ethoprop	86.9	83.7	P/P	61 - 121
Fenamiphos	81.9	98.1	P/P	31 - 139
Fenbuconazole	63.9	63.2	F/F	66 - 141
Fipronil	103	102	P/P	62 - 129
Fipronil Desulfinyl	108	105	P/P	59 - 126
Fipronil Sulfide	70.9	85.6	P/P	63 - 117
Fipronil Sulfone	75.4	93.4	P/P	57 - 117
Fluazifop-P-butyl	107	101	P/P	63 - 124
Fludioxonil	97.2	93.2	P/P	63 - 123
Flumioxazin	87.5	92.9	P/P	34 - 245
Flutolanil	80.9	89.1	P/P	56 - 131

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P404389

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluxapyroxad	97.8	93.0	P/P	57 - 117
Fonofos	79.5	82.0	P/P	61 - 116
Hexazinone	81.3	84.1	P/P	55 - 138
Imazalil	126	120	P/P	33 - 143
Iprodione	98.7	96.8	P/P	59 - 118
Malathion	88.5	102	P/P	62 - 138
Metalaxyl	96.9	94.7	P/P	24 - 147
Metolachlor	95.9	94.6	P/P	68 - 118
Metribuzin	101	103	P/P	20 - 239
Mevinphos	75.8	78.4	P/P	46 - 124
Molinate	67.4	66.6	P/P	46 - 100
Myclobutanil	95.4	94.5	P/P	32 - 149
Naled	30.8	31.9	F/F	32 - 95.0
Norflurazon	80.3	91.4	P/P	57 - 127
Oxadiazon	81.0	82.9	P/P	63 - 118
Oxyfluorfen	104	94.9	P/P	69 - 137
Parathion Ethyl	84.1	84.7	P/P	70 - 113
Parathion Methyl	98.5	92.3	P/P	71 - 130
Pendimethalin	73.3	70.8	P/P	55 - 118
Phorate	73.8	75.3	P/P	46 - 125
Prodiamine	42.3	38.7	P/P	20 - 141
Prometon	86.3	83.3	P/P	54 - 122
Prometryn	83.3	90.5	P/P	66 - 124
Pronamide	102	97.2	P/P	79 - 122
Propiconazole	76.1	86.7	P/P	61 - 126
Pyriproxyfen	89.0	82.6	P/P	52 - 131
Simazine	87.0	94.0	P/P	75 - 128
Sulfentrazone	101	94.2	P/P	20 - 132
Tebuconazole	67.7	64.8	P/P	20 - 116
Terbufos	95.6	98.8	P/P	61 - 117
Terbutylazine	103	98.7	P/P	74 - 116

Reference Method: EPA 8321B
Batch ID: P404444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	90.8		P	40 - 160
Endothall	72.5		P	40 - 150
Glufosinate	86.2		P	40 - 160
Glyphosate	82.5		P	40 - 160
Sucralose	84.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	79.5		P	40 - 150
2,4,5-T	75.3		P	40 - 150
Acetaminophen	83.4		P	30 - 150
Acetamiprid	77.5		P	40 - 150
Afidopyropen	68.7		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P404499

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	103		P	30 - 150
Benzovindiflupyr	69.2		P	40 - 150
Carbamazepine	85.9		P	40 - 150
Clothianidin	86.5		P	40 - 150
Dinotefuran	88.8		P	40 - 150
Diuron	95.8		P	40 - 150
Fenuron	86.4		P	40 - 150
Fluridone	77.0		P	40 - 150
Hydrocodone	92.7		P	40 - 150
Ibuprofen	70.3		P	40 - 150
Imazapyr	78.3		P	40 - 150
Imidacloprid	85.3		P	40 - 150
Linuron	79.7		P	40 - 150
Mandestrobin	74.0		P	40 - 150
MCPP	79.4		P	40 - 150
Naproxen	83.1		P	40 - 150
Primidone	72.6		P	40 - 150
Pyraclostrobin	62.7		P	40 - 150
Thiamethoxam	87.3		P	40 - 150
Tolfenpyrad	40.6		P	30 - 150
Triclopyr	81.8		P	40 - 150

Reference Method: SM 2120 B-2011

Batch ID: P404472

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.9		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P404825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P404696

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P404845

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: P404700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279927	Barium	98.5		P	80 - 120
2279927	Calcium	104		P	80 - 120
2279927	Iron	103		P	80 - 120
2279927	Magnesium	102		P	80 - 120
2279927	Manganese	98.0		P	80 - 120
2279927	Potassium	95.7		P	80 - 120
2279927	Sodium	103		P	80 - 120
2279927	Zinc	103		P	80 - 120
2279948	Barium	101	97.5	P/P	80 - 120
2279948	Calcium	103		P	80 - 120
2279948	Iron	109	105	P/P	80 - 120
2279948	Magnesium	108	103	P/P	80 - 120
2279948	Manganese	101	98.1	P/P	80 - 120
2279948	Potassium	99.8	96.4	P/P	80 - 120
2279948	Sodium	100		P	80 - 120
2279948	Zinc	107	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279927	Aluminum	104		P	80 - 120
2279927	Antimony	111		P	80 - 120
2279927	Arsenic	101		P	80 - 120
2279927	Beryllium	103		P	80 - 120
2279927	Boron	108		P	80 - 120
2279927	Cadmium	108		P	80 - 120
2279927	Chromium	103		P	80 - 120
2279927	Copper	96.3		P	80 - 120
2279927	Lead	100		P	80 - 120
2279927	Nickel	94.3		P	80 - 120
2279927	Selenium	101		P	80 - 120
2279927	Silver	97.2		P	80 - 120
2279927	Thallium	108		P	80 - 120
2279948	Aluminum	99.9	103	P/P	80 - 120
2279948	Antimony	107	110	P/P	80 - 120
2279948	Arsenic	98.9	101	P/P	80 - 120
2279948	Beryllium	102	103	P/P	80 - 120
2279948	Boron	103	105	P/P	80 - 120
2279948	Cadmium	101	103	P/P	80 - 120
2279948	Chromium	99.9	103	P/P	80 - 120
2279948	Copper	94.4	96.6	P/P	80 - 120
2279948	Lead	97.2	99.5	P/P	80 - 120
2279948	Nickel	94.2	96.1	P/P	80 - 120
2279948	Selenium	98.1	101	P/P	80 - 120
2279948	Silver	94.5	98.0	P/P	80 - 120
2279948	Thallium	105	108	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279941	Chloride	100		P	90 - 110
2280130	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P404721

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279941	Sulfate	101		P	90 - 110
2280130	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P404889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279418	Ammonia-N	96.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P404590

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279872	Kjeldahl Nitrogen	96.3	95.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P404779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279962	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P404469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279963	O-Phosphate-P	98.8	96.5	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P404389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279591	Acetochlor	78.2	92.6	P/P	66 - 122
2279591	Alachlor	74.4	78.5	P/P	65 - 122
2279591	Ametryn	91.2	93.7	P/P	45 - 173
2279591	Atrazine	73.0	82.8	P/P	70 - 134
2279591	Atrazine Desethyl	54.6	64.7	P/P	25 - 150
2279591	Azinphos Methyl	165	133	P/P	44 - 174
2279591	Azoxystrobin	90.6	95.9	P/P	10 - 268
2279591	Bromacil	70.8	80.3	P/P	31 - 145
2279591	Butylate	50.2	47.7	P/P	15 - 97.0
2279591	Caffeine	113	108	P/P	70 - 130
2279591	Carbophenothion	90.1	85.2	P/P	42 - 129
2279591	Carfentrazone Ethyl	82.2	88.9	P/P	62 - 145
2279591	Chlorpyrifos Ethyl	111	108	P/P	60 - 124
2279591	Chlorpyrifos Methyl	101	101	P/P	66 - 119

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P404389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279591	Cyanazine	81.4	97.1	P/P	17 - 225
2279591	Demeton	121	118	P/P	36 - 142
2279591	Diazinon	82.8	97.8	P/P	70 - 128
2279591	Difenoconazole	62.8	67.3	P/P	33 - 222
2279591	Dimethenamid	67.6	77.7	P/P	54 - 125
2279591	Disulfoton	89.3	79.1	P/P	49 - 133
2279591	Dithiopyr	76.8	89.9	P/P	55 - 123
2279591	EPTC	42.7	43.9	P/P	19 - 91.0
2279591	Ethion	101	98.3	P/P	13 - 143
2279591	Ethoprop	92.7	94.1	P/P	49 - 144
2279591	Fenamiphos	99.9	96.3	P/P	32 - 136
2279591	Fenbuconazole	147	60.4	P/F	73 - 148
2279591	Fipronil Desulfinyl	69.3	84.2	P/P	49 - 127
2279591	Fluazifop-P-butyl	70.9	82.1	P/P	67 - 129
2279591	Fludioxonil	70.1	89.6	P/P	61 - 126
2279591	Flumioxazin	232	254	P/P	38 - 279
2279591	Flutolanil	57.1	69.8	P/P	55 - 136
2279591	Fluxapyroxad	87.4	90.9	P/P	33 - 140
2279591	Fonofos	84.7	89.2	P/P	58 - 125
2279591	Hexazinone	96.6	97.7	P/P	57 - 148
2279591	Imazalil	67.6	84.7	P/P	10 - 221
2279591	Iprodione	96.7	96.6	P/P	32 - 140
2279591	Malathion	122	88.3	P/P	52 - 138
2279591	Metalaxyl	65.7	77.8	P/P	46 - 134
2279591	Metolachlor	76.4	92.2	P/P	58 - 122
2279591	Metribuzin	95.9	101	P/P	16 - 272
2279591	Mevinphos	108	107	P/P	45 - 140
2279591	Molinate	67.4	69.6	P/P	41 - 103
2279591	Myclobutanil	78.2	90.8	P/P	60 - 134
2279591	Naled	35.1	35.1	P/P	20 - 113
2279591	Norflurazon	67.4	75.1	P/P	51 - 123
2279591	Oxadiazon	36.0	50.9	F/P	44 - 125
2279591	Oxyfluorfen	81.7	94.6	P/P	66 - 176
2279591	Parathion Ethyl	87.2	94.3	P/P	57 - 132
2279591	Parathion Methyl	102	103	P/P	59 - 156
2279591	Pendimethalin	82.3	85.5	P/P	59 - 129
2279591	Phorate	103	115	P/P	47 - 136
2279591	Prodiamine	88.6	108	P/P	10 - 159
2279591	Prometon	79.1	92.2	P/P	59 - 127
2279591	Prometryn	70.1	77.5	P/P	59 - 129
2279591	Pronamide	75.3	84.8	P/P	65 - 145
2279591	Propiconazole	86.8	100	P/P	28 - 165
2279591	Pyriproxyfen	38.1	41.7	P/P	21 - 180
2279591	Simazine	67.8	74.3	P/P	63 - 147
2279591	Tebuconazole	93.2	112	P/P	10 - 117
2279591	Terbufos	117	118	P/P	61 - 131
2279591	Terbuthylazine	75.6	83.9	P/P	62 - 126

Reference Method: EPA 8321B
Batch ID: P404444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P404444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279973	Acesulfame K	137	119	P/P	40 - 150
2279973	AMPA	80.2	75.2	P/P	40 - 160
2279973	Endothall	100	95.6	P/P	40 - 150
2279973	Glufosinate	85.7	85.9	P/P	40 - 160
2279973	Glyphosate	63.7	62.6	P/P	40 - 160
2279973	Sucralose	85.7	89.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P404499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2278894	2,4-D	114	118	P/P	40 - 150
2278894	2,4,5-T	114	125	P/P	40 - 150
2278894	Acetaminophen	93.9	137	P/P	30 - 150
2278894	Acetamiprid	83.5	97.2	P/P	40 - 150
2278894	Afidopyropen	66.7	82.2	P/P	40 - 150
2278894	Bentazon	104	116	P/P	30 - 150
2278894	Benzovindiflupyr	89.2	97.7	P/P	40 - 150
2278894	Carbamazepine	98.4	118	P/P	40 - 150
2278894	Clothianidin	108	126	P/P	40 - 150
2278894	Dinotefuran	101	120	P/P	40 - 150
2278894	Diuron	94.0	116	P/P	40 - 150
2278894	Fenuron	97.4	107	P/P	40 - 150
2278894	Fluridone	88.3	97.4	P/P	40 - 150
2278894	Hydrocodone	84.2	111	P/P	40 - 150
2278894	Ibuprofen	98.8	113	P/P	40 - 150
2278894	Imazapyr	104	137	P/P	40 - 150
2278894	Imidacloprid	106	135	P/P	40 - 150
2278894	Linuron	75.3	85.4	P/P	40 - 150
2278894	Mandestrobin	90.0	104	P/P	40 - 150
2278894	MCPP	119	128	P/P	40 - 150
2278894	Naproxen	115	115	P/P	40 - 150
2278894	Primidone	96.1	109	P/P	40 - 150
2278894	Pyraclostrobin	78.2	91.4	P/P	40 - 150
2278894	Thiamethoxam	109	121	P/P	40 - 150
2278894	Tolfenpyrad	51.1	51.2	P/P	30 - 150
2278894	Triclopyr	91.5	113	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P404696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279840	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P404845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2279942	Organic Carbon	95.8	96.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P404481

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279914	Turbidity	12.4	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P404700

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279948	Barium	3.65	Spike	P	0 - 20
2279948	Calcium	2.73	Spike	P	0 - 20
2279948	Iron	3.32	Spike	P	0 - 20
2279948	Magnesium	3.22	Spike	P	0 - 20
2279948	Manganese	3.01	Spike	P	0 - 20
2279948	Potassium	2.35	Spike	P	0 - 20
2279948	Sodium	2.13	Spike	P	0 - 20
2279948	Zinc	2.24	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P404700

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279948	Aluminum	3.01	Spike	P	0 - 20
2279948	Antimony	2.80	Spike	P	0 - 20
2279948	Arsenic	2.01	Spike	P	0 - 20
2279948	Beryllium	0.651	Spike	P	0 - 20
2279948	Boron	1.78	Spike	P	0 - 20
2279948	Cadmium	1.95	Spike	P	0 - 20
2279948	Chromium	3.40	Spike	P	0 - 20
2279948	Copper	2.36	Spike	P	0 - 20
2279948	Lead	2.29	Spike	P	0 - 20
2279948	Nickel	2.02	Spike	P	0 - 20
2279948	Selenium	3.08	Spike	P	0 - 20
2279948	Silver	3.56	Spike	P	0 - 20
2279948	Thallium	2.86	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404719

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279941	Chloride	0.421	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P404721

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279941	Sulfate	0.909	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P404889

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279418	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P404590

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279872	Kjeldahl Nitrogen	0.894	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P404779

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279962	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P404672

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279915	Total-P	0.838	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P404469

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279963	O-Phosphate-P	2.36	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P404389

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279591	Acetochlor	16.9	Spike	P	0 - 30
2279591	Alachlor	5.38	Spike	P	0 - 30
2279591	Ametryn	2.71	Spike	P	0 - 30
2279591	Atrazine	8.21	Spike	P	0 - 30
2279591	Atrazine Desethyl	16.9	Spike	P	0 - 30
2279591	Azinphos Methyl	21.4	Spike	P	0 - 30
2279591	Azoxystrobin	5.75	Spike	P	0 - 30
2279591	Bromacil	12.6	Spike	P	0 - 30
2279591	Butylate	5.08	Spike	P	0 - 30
2279591	Caffeine	4.28	Spike	P	0 - 30
2279591	Carbophenothion	5.62	Spike	P	0 - 30
2279591	Carfentrazone Ethyl	7.92	Spike	P	0 - 30
2279591	Chlorpyrifos Ethyl	2.45	Spike	P	0 - 30
2279591	Chlorpyrifos Methyl	0.246	Spike	P	0 - 30
2279591	Cyanazine	17.6	Spike	P	0 - 30
2279591	Demeton	1.80	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P404389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279591	Diazinon	16.5	Spike	P	0 - 30
2279591	Difenoconazole	6.97	Spike	P	0 - 30
2279591	Dimethenamid	13.9	Spike	P	0 - 30
2279591	Disulfoton	12.1	Spike	P	0 - 30
2279591	Dithiopyr	15.8	Spike	P	0 - 30
2279591	EPTC	2.67	Spike	P	0 - 30
2279591	Ethion	2.92	Spike	P	0 - 30
2279591	Ethoprop	1.54	Spike	P	0 - 30
2279591	Fenamiphos	3.63	Spike	P	0 - 30
2279591	Fenbuconazole	83.7	Spike	F	0 - 30
2279591	Fipronil	10.1	Spike	P	0 - 30
2279591	Fipronil Desulfinyl	11.5	Spike	P	0 - 30
2279591	Fipronil Sulfide	15.3	Spike	P	0 - 30
2279591	Fipronil Sulfone	14.5	Spike	P	0 - 30
2279591	Fluazifop-P-butyl	14.7	Spike	P	0 - 30
2279591	Fludioxonil	24.4	Spike	P	0 - 30
2279591	Flumioxazin	9.32	Spike	P	0 - 30
2279591	Flutolanil	20.1	Spike	P	0 - 30
2279591	Fluxapyroxad	3.82	Spike	P	0 - 30
2279591	Fonofos	5.14	Spike	P	0 - 30
2279591	Hexazinone	1.07	Spike	P	0 - 30
2279591	Imazalil	22.4	Spike	P	0 - 30
2279591	Iprodione	0.0905	Spike	P	0 - 30
2279591	Malathion	32.1	Spike	F	0 - 30
2279591	Metalaxyl	16.9	Spike	P	0 - 30
2279591	Metolachlor	18.8	Spike	P	0 - 30
2279591	Metribuzin	5.01	Spike	P	0 - 30
2279591	Mevinphos	0.940	Spike	P	0 - 30
2279591	Molinate	3.26	Spike	P	0 - 30
2279591	Myclobutanil	14.9	Spike	P	0 - 30
2279591	Naled	0.166	Spike	P	0 - 30
2279591	Norflurazon	10.8	Spike	P	0 - 30
2279591	Oxadiazon	11.2	Spike	P	0 - 30
2279591	Oxyfluorfen	14.6	Spike	P	0 - 30
2279591	Parathion Ethyl	7.74	Spike	P	0 - 30
2279591	Parathion Methyl	1.18	Spike	P	0 - 30
2279591	Pendimethalin	3.76	Spike	P	0 - 30
2279591	Phorate	11.5	Spike	P	0 - 30
2279591	Prodiamine	19.4	Spike	P	0 - 30
2279591	Prometon	15.2	Spike	P	0 - 30
2279591	Prometryn	10.1	Spike	P	0 - 30
2279591	Pronamide	11.8	Spike	P	0 - 30
2279591	Propiconazole	14.4	Spike	P	0 - 30
2279591	Pyriproxyfen	8.90	Spike	P	0 - 30
2279591	Simazine	7.67	Spike	P	0 - 30
2279591	Sulfentrazone	5.57	Spike	P	0 - 30
2279591	Tebuconazole	15.3	Spike	P	0 - 30
2279591	Terbufos	1.33	Spike	P	0 - 30
2279591	Terbuthylazine	10.3	Spike	P	0 - 30
LFB	Acetochlor	6.67	LCS	P	0 - 30
LFB	Alachlor	3.47	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P404389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Ametryn	2.33	LCS	P	0 - 30
LFB	Atrazine	4.97	LCS	P	0 - 30
LFB	Atrazine Desethyl	2.83	LCS	P	0 - 30
LFB	Azinphos Methyl	2.47	LCS	P	0 - 30
LFB	Azoxystrobin	4.35	LCS	P	0 - 30
LFB	Bromacil	5.09	LCS	P	0 - 30
LFB	Butylate	22.9	LCS	P	0 - 30
LFB	Caffeine	13.0	LCS	P	0 - 30
LFB	Carbophenothion	8.12	LCS	P	0 - 30
LFB	Carfentrazone Ethyl	3.29	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	11.0	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	6.66	LCS	P	0 - 30
LFB	Cyanazine	7.47	LCS	P	0 - 30
LFB	Demeton	2.55	LCS	P	0 - 30
LFB	Diazinon	6.79	LCS	P	0 - 30
LFB	Difenoconazole	1.16	LCS	P	0 - 30
LFB	Dimethenamid	9.15	LCS	P	0 - 30
LFB	Disulfoton	13.2	LCS	P	0 - 30
LFB	Dithiopyr	8.00	LCS	P	0 - 30
LFB	EPTC	1.97	LCS	P	0 - 30
LFB	Ethion	5.82	LCS	P	0 - 30
LFB	Ethoprop	3.79	LCS	P	0 - 30
LFB	Fenamiphos	17.9	LCS	P	0 - 30
LFB	Fenbuconazole	1.07	LCS	P	0 - 30
LFB	Fipronil	0.921	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	2.78	LCS	P	0 - 30
LFB	Fipronil Sulfide	18.7	LCS	P	0 - 30
LFB	Fipronil Sulfone	21.4	LCS	P	0 - 30
LFB	Fluazifop-P-butyl	6.29	LCS	P	0 - 30
LFB	Fludioxonil	4.26	LCS	P	0 - 30
LFB	Flumioxazin	6.03	LCS	P	0 - 30
LFB	Flutolanil	9.68	LCS	P	0 - 30
LFB	Fluxapyroxad	5.11	LCS	P	0 - 30
LFB	Fonofos	3.13	LCS	P	0 - 30
LFB	Hexazinone	3.41	LCS	P	0 - 30
LFB	Imazalil	4.85	LCS	P	0 - 30
LFB	Iprodione	1.94	LCS	P	0 - 30
LFB	Malathion	13.9	LCS	P	0 - 30
LFB	Metalaxyl	2.38	LCS	P	0 - 30
LFB	Metolachlor	1.46	LCS	P	0 - 30
LFB	Metribuzin	1.60	LCS	P	0 - 30
LFB	Mevinphos	3.45	LCS	P	0 - 30
LFB	Molinate	1.15	LCS	P	0 - 30
LFB	Myclobutanil	0.879	LCS	P	0 - 30
LFB	Naled	3.37	LCS	P	0 - 30
LFB	Norflurazon	13.0	LCS	P	0 - 30
LFB	Oxadiazon	2.34	LCS	P	0 - 30
LFB	Oxyfluorfen	9.41	LCS	P	0 - 30
LFB	Parathion Ethyl	0.668	LCS	P	0 - 30
LFB	Parathion Methyl	6.43	LCS	P	0 - 30
LFB	Pendimethalin	3.56	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E

Batch ID: P404389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Phorate	2.02	LCS	P	0 - 30
LFB	Prodiamine	8.81	LCS	P	0 - 30
LFB	Prometon	3.48	LCS	P	0 - 30
LFB	Prometryn	8.35	LCS	P	0 - 30
LFB	Pronamide	4.95	LCS	P	0 - 30
LFB	Propiconazole	13.0	LCS	P	0 - 30
LFB	Pyriproxyfen	7.39	LCS	P	0 - 30
LFB	Simazine	7.71	LCS	P	0 - 30
LFB	Sulfentrazone	7.22	LCS	P	0 - 30
LFB	Tebuconazole	4.43	LCS	P	0 - 30
LFB	Terbufos	3.29	LCS	P	0 - 30
LFB	Terbuthylazine	4.51	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P404444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279973	Acesulfame K	13.4	Spike	P	0 - 30
2279973	AMPA	5.23	Spike	P	0 - 30
2279973	Endothall	4.59	Spike	P	0 - 30
2279973	Glufosinate	0.316	Spike	P	0 - 30
2279973	Glyphosate	0.996	Spike	P	0 - 30
2279973	Sucralose	3.67	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P404499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278894	2,4-D	3.34	Spike	P	0 - 30
2278894	2,4,5-T	9.33	Spike	P	0 - 30
2278894	Acetaminophen	37.3	Spike	F	0 - 30
2278894	Acetamiprid	15.2	Spike	P	0 - 30
2278894	Afidopyropen	20.9	Spike	P	0 - 30
2278894	Bentazon	11.2	Spike	P	0 - 30
2278894	Benzovindiflupyr	9.08	Spike	P	0 - 30
2278894	Carbamazepine	17.9	Spike	P	0 - 30
2278894	Clothianidin	15.1	Spike	P	0 - 30
2278894	Dinotefuran	17.4	Spike	P	0 - 30
2278894	Diuron	20.6	Spike	P	0 - 30
2278894	Fenuron	9.73	Spike	P	0 - 30
2278894	Fluridone	9.81	Spike	P	0 - 30
2278894	Hydrocodone	27.2	Spike	P	0 - 30
2278894	Ibuprofen	13.3	Spike	P	0 - 30
2278894	Imazapyr	24.8	Spike	P	0 - 30
2278894	Imidacloprid	23.8	Spike	P	0 - 30
2278894	Linuron	12.6	Spike	P	0 - 30
2278894	Mandestrobin	14.5	Spike	P	0 - 30
2278894	MCP	7.54	Spike	P	0 - 30
2278894	Naproxen	0.256	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P404499

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2278894	Primidone	12.9	Spike	P	0 - 30
2278894	Pyraclostrobin	15.5	Spike	P	0 - 30
2278894	Thiamethoxam	10.7	Spike	P	0 - 30
2278894	Tolfenpyrad	0.144	Spike	P	0 - 30
2278894	Triclopyr	21.4	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P404472

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279941	Color (true)	3.42	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P404825

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279840	Total Alkalinity	0.132	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011

Batch ID: P404940

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279914	TDS	3.66	Sample	P	0 - 10

Reference Method: SM 2540 D-2011

Batch ID: P404898

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279914	TSS	3.08	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011

Batch ID: P404696

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279840	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011

Batch ID: P404845

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2279942	Organic Carbon	0.355	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2279973
Field Sample ID: G2CE0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	101	P	30 - 160
EPA 8321B	Acetaminophen-d4	61.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.6	P	30 - 160
EPA 8321B	Diuron-d6	80.8	P	30 - 160
EPA 8321B	Endothall-d6	77.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.0	P	30 - 160
EPA 8321B	Primidone-d5	72.0	P	30 - 160
EPA 8321B	Sucralose-d6	80.5	P	30 - 160

Lab Sample ID: 2279975
Field Sample ID: G2CE0198

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Caffeine-d9	61.0	P	20 - 200
EPA 8270E	Simazine-d10	109	P	73 - 135
EPA 8270E	Terbufos-d10	114	P	58 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A108094
Included Lab Sample IDs: 2279973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	96.7	98.3	P/P	60 - 160
Glufosinate	98.3	92.4	P/P	60 - 160
Glyphosate	96.2	83.0	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A108107
Included Lab Sample IDs: 2279968

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.8	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A108108
Included Lab Sample IDs: 2279966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A108111
Included Lab Sample IDs: 2279966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	100	P/P	95 - 105

Reference Method: EPA 8321B
Run ID: A108117
Included Lab Sample IDs: 2279973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	118	114	P/P	60 - 160
Endothall	78.3	76.3	P/P	60 - 160
Sucralose	83.4	82.2	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A108179
Included Lab Sample IDs: 2279966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.5	99.8	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A108185
Included Lab Sample IDs: 2279966

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108200

Included Lab Sample IDs: 2279967

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108203

Included Lab Sample IDs: 2279967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	101	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A108214

Included Lab Sample IDs: 2279975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	101		P	80 - 120
Alachlor	100		P	80 - 120
Ametryn	106		P	80 - 120
Atrazine	97.9		P	80 - 120
Atrazine Desethyl	109		P	80 - 120
Azinphos Methyl	90.4		P	80 - 120
Azoxystrobin	101		P	80 - 120
Bromacil	108		P	80 - 120
Butylate	97.8		P	80 - 120
Caffeine	98.7		P	80 - 120
Carbophenothion	101		P	80 - 120
Carfentrazone Ethyl	104		P	80 - 120
Chlorpyrifos Ethyl	102		P	80 - 120
Chlorpyrifos Methyl	101		P	80 - 120
Cyanazine	96.1		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	98.3		P	80 - 120
Difenoconazole	95.2		P	80 - 120
Dimethenamid	100		P	80 - 120
Disulfoton	102		P	80 - 120
Dithiopyr	99.2		P	80 - 120
EPTC	101		P	80 - 120
Ethion	101		P	80 - 120
Ethoprop	105		P	80 - 120
Fenamiphos	104		P	80 - 120
Fenbuconazole	95.8		P	80 - 120
Fipronil	101		P	80 - 120
Fipronil Desulfinyl	101		P	80 - 120
Fipronil Sulfide	101		P	80 - 120
Fipronil Sulfone	106		P	80 - 120
Fluazifop-P-butyl	107		P	80 - 120
Fludioxonil	92.2		P	80 - 120
Flumioxazin	96.7		P	80 - 120
Flutolanil	101		P	80 - 120
Fluxapyroxad	99.0		P	80 - 120
Fonofos	98.6		P	80 - 120
Hexazinone	102		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A108214
Included Lab Sample IDs: 2279975

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazalil	98.0		P	80 - 120
Iprodione	90.7		P	80 - 120
Malathion	95.8		P	80 - 120
Metalaxyl	98.8		P	80 - 120
Metolachlor	104		P	80 - 120
Metribuzin	105		P	80 - 120
Mevinphos	105		P	80 - 120
Molinate	103		P	80 - 120
Myclobutanil	105		P	80 - 120
Naled	105		P	80 - 120
Norflurazon	97.0		P	80 - 120
Oxadiazon	104		P	80 - 120
Oxyfluorfen	100		P	80 - 120
Parathion Ethyl	104		P	80 - 120
Parathion Methyl	98.8		P	80 - 120
Pendimethalin	101		P	80 - 120
Phorate	112		P	80 - 120
Prodiamine	97.1		P	80 - 120
Prometon	95.3		P	80 - 120
Prometryn	98.2		P	80 - 120
Pronamide	89.0		P	80 - 120
Propiconazole	99.9		P	80 - 120
Pyriproxyfen	102		P	80 - 120
Simazine	91.4		P	80 - 120
Sulfentrazone	106		P	80 - 120
Tebuconazole	103		P	80 - 120
Terbufos	98.1		P	80 - 120
Terbutylazine	100		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A108229
Included Lab Sample IDs: 2279967

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

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A108250
Included Lab Sample IDs: 2279974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Antimony	109	109	P/P	90 - 110
Arsenic	98.2	96.8	P/P	90 - 110
Beryllium	99.3	97.3	P/P	90 - 110
Boron	106	106	P/P	90 - 110
Cadmium	103	104	P/P	90 - 110
Chromium	96.5	98.5	P/P	90 - 110
Copper	92.2	91.6	P/P	90 - 110
Lead	94.9	93.8	P/P	90 - 110
Nickel	92.8	91.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A108250

Included Lab Sample IDs: 2279974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	104	102	P/P	90 - 110
Silver	96.1	95.2	P/P	90 - 110
Thallium	101	100	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A108253

Included Lab Sample IDs: 2279966

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.8	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A108254

Included Lab Sample IDs: 2279974

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.9	98.9	P/P	90 - 110
Calcium	102	103	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Manganese	100	101	P/P	90 - 110
Potassium	99.0	98.6	P/P	90 - 110
Sodium	102	101	P/P	90 - 110
Zinc	102	104	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A108255

Included Lab Sample IDs: 2279973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	83.1	80.6	P/P	50 - 150
2,4,5-T	87.1	88.4	P/P	50 - 150
Acetaminophen	89.2	87.4	P/P	60 - 160
Acetamiprid	89.0	103	P/P	50 - 150
Afidopyropen	101	96.2	P/P	50 - 150
Bentazon	103	99.9	P/P	50 - 160
Benzovindiflupyr	71.1	86.5	P/P	50 - 150
Carbamazepine	104	104	P/P	60 - 150
Clothianidin	108	104	P/P	60 - 150
Dinotefuran	107	112	P/P	50 - 150
Diuron	121	121	P/P	60 - 160
Fenuron	98.9	99.5	P/P	60 - 150
Fluridone	95.5	95.7	P/P	60 - 160
Hydrocodone	101	106	P/P	60 - 150
Ibuprofen	61.5	77.7	P/P	50 - 160
Imazapyr	99.5	95.5	P/P	50 - 150
Imidacloprid	104	109	P/P	60 - 150
Linuron	108	95.3	P/P	60 - 150
Mandestrobin	87.2	93.5	P/P	50 - 150
MCPP	89.4	96.7	P/P	50 - 150
Naproxen	80.1	128	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A108255
Included Lab Sample IDs: 2279973

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	92.1	88.5	P/P	60 - 150
Pyraclostrobin	84.0	88.0	P/P	60 - 150
Thiamethoxam	95.1	99.0	P/P	50 - 150
Tolfenpyrad	85.5	96.8	P/P	60 - 150
Triclopyr	95.3	86.3	P/P	50 - 150

Reference Method: SM 5310 B-2011
Run ID: A108262
Included Lab Sample IDs: 2279967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A108272
Included Lab Sample IDs: 2279967

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	97.9	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	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						12.4	
EPA 200.7 Rev. 4.4	Barium	103		98.5	101	97.5		3.65
	Calcium	103		104	103			2.73
	Iron	109		103	109	105		3.32
	Magnesium	109		102	108	103		3.22
	Manganese	102		98.0	101	98.1		3.01
	Potassium	102		95.7	99.8	96.4		2.35
	Sodium	103		103	100			2.13
	Zinc	102		103	107	105		2.24
EPA 200.8 Rev. 5.4	Aluminum	104		99.9	103	104		3.01
	Antimony	109		107	110	111		2.80
	Arsenic	101		98.9	101	101		2.01
	Beryllium	103		102	103	103		0.651
	Boron	104		103	105	108		1.78
	Cadmium	104		101	103	108		1.95
	Chromium	99.8		99.9	103	103		3.40
	Copper	96.1		94.4	96.6	96.3		2.36
	Lead	98.5		97.2	99.5	100		2.29
	Nickel	97.1		94.2	96.1	94.3		2.02
	Selenium	102		98.1	101	101		3.08
	Silver	97.7		94.5	98.0	97.2		3.56
	Thallium	105		105	108	108		2.86
EPA 300.0 Rev. 2.1	Chloride	99.8		100	101		0.421	
	Sulfate	101		101	102		0.909	
EPA 350.1 Rev. 2.0	Ammonia-N	97.8		96.2	98.0			1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8		96.3	95.1			0.894
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101		102	102			0.0
EPA 365.1 Rev. 2.0	Total-P	105						0.838
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0		98.8	96.5			2.36
EPA 8270E	Acetochlor	105	98.2	92.6	78.2	6.67		16.9
	Alachlor	93.1	90.0	78.5	74.4	3.47		5.38
	Ametryn	99.2	102	93.7	91.2	2.33		2.71
	Atrazine	97.0	92.3	73.0	82.8	4.97		8.21
	Atrazine Desethyl	67.4	69.3	64.7	54.6	2.83		16.9
	Azinphos Methyl	132	129	165	133	2.47		21.4
	Azoxystrobin	93.5	97.7	95.9	90.6	4.35		5.75
	Bromacil	74.4	78.3	80.3	70.8	5.09		12.6
	Butylate	47.6	37.8	47.7	50.2	22.9		5.08
	Caffeine	96.9	110	108	113	13.0		4.28
	Carbophenothion	93.0	101	85.2	90.1	8.12		5.62
	Carfentrazone Ethyl	107	104	88.9	82.2	3.29		7.92
	Chlorpyrifos Ethyl	78.0	87.1	108	111	11.0		2.45
	Chlorpyrifos Methyl	83.8	89.6	101	101	6.66		0.246
	Cyanazine	114	106	97.1	81.4	7.47		17.6
	Demeton	78.8	76.8	118	121	2.55		1.80
	Diazinon	101	94.7	97.8	82.8	6.79		16.5
	Difenoconazole	130	128	67.3	62.8	1.16		6.97
	Dimethenamid	85.1	77.6	77.7	67.6	9.15		13.9
	Disulfoton	72.1	82.3	79.1	89.3	13.2		12.1
	Dithiopyr	83.0	90.0	89.9	76.8	8.00		15.8
	EPTC	49.3	48.3	43.9	42.7	1.97		2.67
	Ethion	81.0	76.4	98.3	101	5.82		2.92
	Ethoprop	86.9	83.7	94.1	92.7	3.79		1.54
	Fenamiphos	81.9	98.1	96.3	99.9	17.9		3.63

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
EPA 8270E	Fenbuconazole	63.9	63.2	147	60.4	1.07		83.7
	Fipronil	103	102			0.921		10.1
	Fipronil Desulfinyl	108	105	84.2	69.3	2.78		11.5
	Fipronil Sulfide	70.9	85.6			18.7		15.3
	Fipronil Sulfone	75.4	93.4			21.4		14.5
	Fluazifop-P-butyl	107	101	82.1	70.9	6.29		14.7
	Fludioxonil	97.2	93.2	89.6	70.1	4.26		24.4
	Flumioxazin	87.5	92.9	254	232	6.03		9.32
	Flutolanil	80.9	89.1	69.8	57.1	9.68		20.1
	Fluxapyroxad	97.8	93.0	87.4	90.9	5.11		3.82
	Fonofos	79.5	82.0	89.2	84.7	3.13		5.14
	Hexazinone	81.3	84.1	97.7	96.6	3.41		1.07
	Imazalil	126	120	84.7	67.6	4.85		22.4
	Iprodione	98.7	96.8	96.7	96.6	1.94		0.0905
	Malathion	88.5	102	122	88.3	13.9		32.1
	Metalaxyl	96.9	94.7	77.8	65.7	2.38		16.9
	Metolachlor	95.9	94.6	92.2	76.4	1.46		18.8
	Metribuzin	101	103	101	95.9	1.60		5.01
	Mevinphos	75.8	78.4	107	108	3.45		0.940
	Molinate	67.4	66.6	69.6	67.4	1.15		3.26
	Myclobutanil	95.4	94.5	90.8	78.2	0.879		14.9
	Naled	30.8	31.9	35.1	35.1	3.37		0.166
	Norflurazon	80.3	91.4	75.1	67.4	13.0		10.8
	Oxadiazon	81.0	82.9	50.9	36.0	2.34		11.2
	Oxyfluorfen	104	94.9	94.6	81.7	9.41		14.6
	Parathion Ethyl	84.1	84.7	94.3	87.2	0.668		7.74
	Parathion Methyl	98.5	92.3	103	102	6.43		1.18
	Pendimethalin	73.3	70.8	85.5	82.3	3.56		3.76
	Phorate	73.8	75.3	115	103	2.02		11.5
	Prodiamine	42.3	38.7	88.6	108	8.81		19.4
	Prometon	86.3	83.3	79.1	92.2	3.48		15.2
	Prometryn	83.3	90.5	70.1	77.5	8.35		10.1
	Pronamide	102	97.2	75.3	84.8	4.95		11.8
	Propiconazole	76.1	86.7	86.8	100	13.0		14.4
	Pyriproxyfen	89.0	82.6	38.1	41.7	7.39		8.90
	Simazine	87.0	94.0	67.8	74.3	7.71		7.67
	Sulfentrazone	101	94.2			7.22		5.57
	Tebuconazole	67.7	64.8	93.2	112	4.43		15.3
	Terbufos	95.6	98.8	117	118	3.29		1.33
	Terbuthylazine	103	98.7	75.6	83.9	4.51		10.3
EPA 8321B	2,4-D	79.5		114	118			3.34
	2,4,5-T	75.3		114	125			9.33
	Acesulfame K	101		137	119			13.4
	Acetaminophen	83.4		93.9	137			37.3
	Acetamiprid	77.5		83.5	97.2			15.2
	Afidopyropen	68.7		66.7	82.2			20.9
	AMPA	90.8		80.2	75.2			5.23
	Bentazon	103		104	116			11.2
	Benzovindiflupyr	69.2		89.2	97.7			9.08
	Carbamazepine	85.9		98.4	118			17.9
	Clothianidin	86.5		108	126			15.1
	Dinotefuran	88.8		101	120			17.4
	Diuron	95.8		94.0	116			20.6
	Endothall	72.5		100	95.6			4.59

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8321B	Fenuron	86.4	97.4	107			9.73
	Fluridone	77.0	88.3	97.4			9.81
	Glufosinate	86.2	85.7	85.9			0.316
	Glyphosate	82.5	63.7	62.6			0.996
	Hydrocodone	92.7	84.2	111			27.2
	Ibuprofen	70.3	98.8	113			13.3
	Imazapyr	78.3	104	137			24.8
	Imidacloprid	85.3	106	135			23.8
	Linuron	79.7	75.3	85.4			12.6
	Mandestrobin	74.0	90.0	104			14.5
	MCPP	79.4	119	128			7.54
	Naproxen	83.1	115	115			0.256
	Primidone	72.6	96.1	109			12.9
	Pyraclostrobin	62.7	78.2	91.4			15.5
	Sucralose	84.1	85.7	89.4			3.67
	Thiamethoxam	87.3	109	121			10.7
	Tolfenpyrad	40.6	51.1	51.2			0.144
	Triclopyr	81.8	91.5	113			21.4
SM 2120 B-2011	Color (true)	99.9				3.42	
SM 2320 B-2011	Total Alkalinity	99.5				0.132	
SM 2540 C-2011	TDS					3.66	
SM 2540 D-2011	TSS					3.08	
SM 4500 F-C-2011	Fluoride	100	101	101			0.0
SM 5310 B-2011	Organic Carbon	96.2	95.8	96.3			0.355

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2279966
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2279974
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2279974
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2279966
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2279966
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2279967
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2279967
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2279967
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2279967
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2279968
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2279975
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2279973
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2279966
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2279966
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2279974
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2279966
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2279966
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2279966
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2279967

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	10/01/2021			10/01/2021 15:49	Khloe J Berg	2279966
EPA 200.7 Rev. 4.4	10/01/2021	10/07/2021 10:45	Emily M Philpot	10/08/2021 15:51	Josef B Mick	2279974
EPA 200.8 Rev. 5.4	10/01/2021	10/07/2021 10:45	Emily M Philpot	10/08/2021 15:17	Alexander Thompson	2279974
EPA 300.0 Rev. 2.1	10/01/2021			10/06/2021 18:56	Roberta Tatti	2279966
EPA 350.1 Rev. 2.0	10/01/2021			10/08/2021 13:23	Ping Hua	2279967
EPA 351.2 Rev. 2.0	10/01/2021	10/05/2021 12:35	Benjamin T. Nordmann	10/07/2021 09:53	Alexandra J Mattheus	2279967
EPA 353.2 Rev. 2.0	10/01/2021			10/08/2021 10:02	Beverly Y. Sanders	2279967
EPA 365.1 Rev. 2.0	10/01/2021	10/06/2021 12:50	Simonne.V. Calhoun	10/07/2021 11:03	Lipi Saha	2279967
EPA 365.1 Rev. 2.0 dissolved	10/01/2021			10/01/2021 14:39	James L Waggeberby	2279968
EPA 8270E	10/01/2021	10/01/2021 13:30	Fe-Val Siddell	10/05/2021 16:28	Vandana T. Nagar	2279975
EPA 8321B	10/01/2021	10/01/2021 12:30	Juyoung Kim	10/01/2021 12:59	Juyoung Kim	2279973
	10/01/2021	10/01/2021 12:30	Juyoung Kim	10/01/2021 17:01	Manjita Shrestha	2279973
	10/01/2021	10/05/2021 09:00	Hoor Shaik	10/09/2021 18:58	Juyoung Kim	2279973
	10/01/2021	10/05/2021 09:00	Hoor Shaik	10/11/2021 11:12	Juyoung Kim	2279973
SM 2120 B-2011	10/01/2021			10/01/2021 15:22	Benjamin T. Nordmann	2279966
SM 2320 B-2011	10/01/2021			10/09/2021 03:01	Dale L. Simmons	2279966
SM 2340B	10/01/2021			10/08/2021 15:51	Josef B Mick	2279974
SM 2540 C-2011	10/01/2021			10/04/2021 14:45	Yijie Li	2279966
SM 2540 D-2011	10/01/2021			10/04/2021 14:45	Yijie Li	2279966
SM 4500 F-C-2011	10/01/2021			10/06/2021 21:17	Dale L. Simmons	2279966
SM 5310 B-2011	10/01/2021			10/08/2021 19:59	Khloe J Berg	2279967