Chemical Analysis Report

CEN-DIST-2022-05-10-02

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

Event Description: **Tiger Lake LVI**
Request ID: **RQ-2022-05-09-17**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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3319 Maguire Blvd., Suite 232
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant Date Certified: 01-JUN-2022 09:42

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: Tiger Lake near Center **Collection Date/Time: 05/09/2022 12:39**

Field ID: G4CE0206 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325763	DEP SOP: NU-094-1	Color (true)**	33		PCU	P413647	
	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P413651	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P413939	
		Sulfate	15		mg SO4/L	P413943	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P413915	
	SM 2540 C-2011	TDS	125		mg/L	P414018	
	SM 2540 D-2011	TSS	36		mg/L	P413890	
	SM 4500-F- C-2011	Fluoride	0.095	I	mg F/L	P413917	
2325764	EPA 350.1 Rev. 2.0	Ammonia-N	0.011		mg N/L	P413961	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	2.2		mg N/L	P413926	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P414226	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P413894	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P413969	
2325766	EPA 8321B	Acesulfame K	0.10	U	ug/L	P413528	
		2,4-D	0.0038	I	ug/L	P413617	
		AMPA	0.10	U	ug/L	P413528	
		2,4,5-T	0.0040	U	ug/L	P413617	
		Acetaminophen	0.0080	U	ug/L	P413617	MS
		Endothall	2.5	U	ug/L	P413528	
		Acetamiprid	0.0020	U	ug/L	P413617	
		Glufosinate	0.10	U	ug/L	P413528	
		Glyphosate	0.10	U	ug/L	P413528	
		Afidopyropen	0.0020	U	ug/L	P413617	
		Sucralose	0.080		ug/L	P413528	
		Bentazon	0.0010	I	ug/L	P413617	
		Benzovindiflupyr	0.0020	U	ug/L	P413617	
		Carbamazepine	8.0E-04	U	ug/L	P413617	
		Clothianidin	0.0020	U	ug/L	P413617	
		Dinotefuran	0.0020	U	ug/L	P413617	
		Diuron	0.0020	U	ug/L	P413617	
		Fenuron	0.032	U	ug/L	P413617	
		Fluridone	0.0056		ug/L	P413617	
		Imazapyr	0.0040	U	ug/L	P413617	
		Hydrocodone	0.0020	U	ug/L	P413617	
		Ibuprofen	0.020	U	ug/L	P413617	
		Imidacloprid	0.0020	I	ug/L	P413617	
		Linuron	0.0040	U	ug/L	P413617	
		Mandestrobin	0.0020	U	ug/L	P413617	
		MCPP	0.0040	U	ug/L	P413617	
		Naproxen	0.0080	U	ug/L	P413617	
		Primidone	0.0040	U	ug/L	P413617	
		Pyraclostrobin	0.0020	U	ug/L	P413617	
		Silvex	0.0040	U	ug/L	P413617	
		Thiamethoxam	0.0020	U	ug/L	P413617	

Field ID: G4CE0206 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325766	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P413617	
		Triclopyr	0.0040	U	ug/L	P413617	
2325767	EPA 200.7 Rev. 4.4	Calcium	13.6		mg/L	P413660	
		Iron	510		ug/L	P413660	
		Magnesium	5.27		mg/L	P413660	
		Potassium	5.0		mg/L	P413660	
		Sodium	12.9		mg/L	P413660	
		Strontium	210		ug/L	P413660	
		Tin	3.0	U	ug/L	P413660	
		Titanium	0.96	I	ug/L	P413660	
		Vanadium	2.0	U	ug/L	P413660	
		Zinc	5.0	U	ug/L	P413660	
	EPA 200.8 Rev. 5.4	Aluminum	67		ug/L	P413660	
		Antimony	0.095	I	ug/L	P413660	
		Arsenic	0.87		ug/L	P413660	
		Barium	23.3		ug/L	P413660	
		Beryllium	0.018	I	ug/L	P413660	
		Boron**	40.6		ug/L	P413660	
		Cadmium	0.020	U	ug/L	P413660	
		Chromium	0.40	U	ug/L	P413660	
		Cobalt	0.190		ug/L	P413660	
		Copper	0.42	I	ug/L	P413660	
		Lead	0.38	I	ug/L	P413660	
		Manganese	29.8		ug/L	P413660	
		Molybdenum	0.66		ug/L	P413660	
		Nickel	0.50	U	ug/L	P413660	
		Selenium	0.23	I	ug/L	P413660	MS
		Silver	0.010	U	ug/L	P413660	
		Thallium	0.10	U	ug/L	P413660	
	SM 2340 B-2011	Hardness	55.6		mg/L	P413660	
2325768	EPA 8270E	Oxybenzone**	10	U	ng/L	P414025	
		Acetochlor	0.25	U	ng/L	P414025	
		Octinoxate**	20	U	ng/L	P414025	
		Alachlor	0.25	U	ng/L	P414025	
		Avobenzone**	100	U	ng/L	P414025	
		Ametryn	0.60	U	ng/L	P414025	
		Atrazine	63		ng/L	P414025	
		Atrazine Desethyl	13		ng/L	P414025	
		Azinphos Methyl	2.0	U	ng/L	P414025	
		Azoxystrobin**	0.50	U	ng/L	P414025	
		Bromacil	0.50	U	ng/L	P414025	
		Butylate	0.40	U	ng/L	P414025	
		Caffeine**	7.5	U	ng/L	P414025	
		Carbophenothion	0.20	U	ng/L	P414025	
		Carfentrazone Ethyl**	0.10	U	ng/L	P414025	

Field ID: G4CE0206 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325768	EPA 8270E	Chlorfenapyr**	0.18	U	ng/L	P414025	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P414025	
		Chlorpyrifos Methyl	0.050	U	ng/L	P414025	
		Coumaphos**	0.50	U	ng/L	P414025	
		Cyanazine	3.2	U	ng/L	P414025	
		Cyprodinil**	0.10	U	ng/L	P414025	
		Demeton	1.5	U	ng/L	P414025	
		Diazinon	0.12	U	ng/L	P414025	
		Difenoconazole**	0.60	U	ng/L	P414025	
		Dimethenamid**	0.10	U	ng/L	P414025	
		Dimethomorph**	0.18	U	ng/L	P414025	
		Disulfoton	0.50	U	ng/L	P414025	
		Dithiopyr**	0.18	UJ	ng/L	P414025	MS
		EPTC	1.2	UJ	ng/L	P414025	RPD
		Ethion	0.15	U	ng/L	P414025	
		Ethoprop	0.10	U	ng/L	P414025	
		Etridiazole**	0.15	UJ	ng/L	P414025	MS, RPD
		Fenamiphos	0.50	U	ng/L	P414025	
		Fenbuconazole**	0.12	U	ng/L	P414025	
		Fipronil	0.25	U	ng/L	P414025	
		Fipronil Desulfinyl**	0.12	U	ng/L	P414025	
		Fipronil Sulfide	0.15	U	ng/L	P414025	
		Fipronil Sulfone	0.15	U	ng/L	P414025	
		Fluazifop-P-butyl**	0.10	U	ng/L	P414025	
		Fludioxonil**	0.12	U	ng/L	P414025	
		Flumioxazin**	1.8	U	ng/L	P414025	
		Flutolanil**	0.10	U	ng/L	P414025	
		Fluxapyroxad**	0.10	U	ng/L	P414025	
		Fonofos	0.20	U	ng/L	P414025	
		Hexazinone	6.9		ng/L	P414025	
		Imazalil**	0.75	U	ng/L	P414025	
		Iprodione**	0.60	U	ng/L	P414025	
		Loratadine**	0.10	U	ng/L	P414025	
		Malathion	0.35	U	ng/L	P414025	
		Metalaxyl	0.75	U	ng/L	P414025	
		Metolachlor	0.37	I	ng/L	P414025	
		Metribuzin	2.5	U	ng/L	P414025	
		Mevinphos	1.0	U	ng/L	P414025	
		Molinate	0.30	U	ng/L	P414025	
		Myclobutanil**	0.25	U	ng/L	P414025	
		Naled**	1.5	U	ng/L	P414025	
		Napropamide**	0.40	U	ng/L	P414025	
		Norflurazon	0.50	U	ng/L	P414025	
		Oxadiazon	0.30	U	ng/L	P414025	
		Oxyfluorfen**	0.15	U	ng/L	P414025	

Field ID: G4CE0206 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2325768	EPA 8270E	Parathion Ethyl	0.25	U	ng/L	P414025	
		Parathion Methyl	0.55	U	ng/L	P414025	
		Pendimethalin	1.0	U	ng/L	P414025	
		Phenytoin**	3.5	UJ	ng/L	P414025	MS
		Phorate	0.52	U	ng/L	P414025	
		Prodiamine**	0.18	U	ng/L	P414025	
		Prometon	0.90	U	ng/L	P414025	
		Prometryn	0.20	UJ	ng/L	P414025	MS
		Pronamide**	0.15	U	ng/L	P414025	
		Propanil**	0.12	U	ng/L	P414025	
		Propargite**	1.5	UJ	ng/L	P414025	MS
		Propiconazole**	0.50	U	ng/L	P414025	
		Pyraflufen Ethyl**	0.25	U	ng/L	P414025	
		Pyridaben**	0.45	U	ng/L	P414025	
		Pyriproxyfen**	0.12	U	ng/L	P414025	
		Simazine	9.1		ng/L	P414025	
		Stirophos**	0.12	UJ	ng/L	P414025	MS
		Sulfentrazone**	0.50	U	ng/L	P414025	
		Tebuconazole**	0.50	U	ng/L	P414025	
		Terbufos	0.10	U	ng/L	P414025	
		Terbuthylazine	0.42	U	ng/L	P414025	
		Thiobencarb**	0.60	U	ng/L	P414025	
		Triadimefon**	0.25	U	ng/L	P414025	
2325809	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P413653	

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: MDL for Endothall elevated due to matrix interference.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for boron and manganese are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.
EPA 8270E: Insufficient sample available to perform duplicate matrix spikes.
EPA 8270E: Insufficient sample available to perform duplicate matrix spikes. MS accuracy for atrazine and simazine 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: DEP SOP: NU-094-1
Batch ID: P413647

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413651

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413660

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413660

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: P413939

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413943

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413961

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413926

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414226

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413894

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413653

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

Reference Method: EPA 8270E
Batch ID: P414025

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
Avobenzone	100	U	ng/L
Avobenzone	100	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P414025

Component	Result	Code	Units
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	0.20	U	ng/L
Carbophenothion	0.20	U	ng/L
Carfentrazone Ethyl	0.10	U	ng/L
Carfentrazone Ethyl	0.10	U	ng/L
Chlorfenapyr	0.18	U	ng/L
Chlorfenapyr	0.18	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
Coumaphos	0.50	U	ng/L
Coumaphos	0.50	U	ng/L
Cyanazine	3.2	U	ng/L
Cyanazine	3.2	U	ng/L
Cyprodinil	0.10	U	ng/L
Cyprodinil	0.10	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
Dimethomorph	0.18	U	ng/L
Dimethomorph	0.18	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
Etridiazole	0.15	U	ng/L
Etridiazole	0.15	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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P414025

Component	Result	Code	Units
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
Loratadine	0.10	U	ng/L
Loratadine	0.10	U	ng/L
Malathion	0.35	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.75	U	ng/L
Metalaxyl	0.75	U	ng/L
Metolachlor	0.35	U	ng/L
Metolachlor	0.35	U	ng/L
Metribuzin	2.5	U	ng/L
Metribuzin	2.5	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
Napropamide	0.40	U	ng/L
Napropamide	0.40	U	ng/L
Norflurazon	0.50	U	ng/L
Norflurazon	0.50	U	ng/L
Octinoxate	20	U	ng/L
Octinoxate	20	U	ng/L
Oxadiazon	0.30	U	ng/L
Oxadiazon	0.30	U	ng/L
Oxybenzone	10	U	ng/L
Oxybenzone	10	U	ng/L
Oxyfluorfen	0.15	U	ng/L
Oxyfluorfen	0.15	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270E
Batch ID: P414025

Component	Result	Code	Units
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
Phenytoin	3.5	U	ng/L
Phenytoin	3.5	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
Propanil	0.12	U	ng/L
Propanil	0.12	U	ng/L
Propargite	1.5	U	ng/L
Propargite	1.5	U	ng/L
Propiconazole	0.50	U	ng/L
Propiconazole	0.50	U	ng/L
Pyraflufen Ethyl	0.25	U	ng/L
Pyraflufen Ethyl	0.25	U	ng/L
Pyridaben	0.45	U	ng/L
Pyridaben	0.45	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
Stirophos	0.12	U	ng/L
Stirophos	0.12	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
Thiobencarb	0.60	U	ng/L
Thiobencarb	0.60	U	ng/L
Triadimefon	0.25	U	ng/L
Triadimefon	0.25	U	ng/L

Reference Method: EPA 8321B
Batch ID: P413528

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P413528

Component	Result	Code	Units
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: P413617

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	0.032	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P413915

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

Reference Method: SM 2540 C-2011
Batch ID: P414018

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P413890

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P413917

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P413969

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P413647

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413651

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413660

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	104		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	104		P	85 - 115
Sodium	101		P	85 - 115
Strontium	99.4		P	85 - 115
Tin	102		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	95.4		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413660

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	98.1		P	85 - 115
Barium	102		P	85 - 115
Beryllium	91.9		P	85 - 115
Boron	107		P	85 - 115
Cadmium	99.6		P	85 - 115
Chromium	97.5		P	85 - 115
Cobalt	97.1		P	85 - 115
Copper	96.2		P	85 - 115
Lead	100		P	85 - 115
Manganese	97.2		P	85 - 115
Molybdenum	98.6		P	85 - 115
Nickel	97.4		P	85 - 115
Selenium	97.2		P	85 - 115
Silver	98.8		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413939

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413943

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413961

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	91.3		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414226

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413894

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413653

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

Reference Method: EPA 8270E
Batch ID: P414025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	96.4	90.7	P/P	70 - 121
Alachlor	82.6	86.9	P/P	68 - 119
Ametryn	83.6	90.2	P/P	64 - 139
Atrazine	93.6	95.2	P/P	76 - 120
Atrazine Desethyl	67.3	69.5	P/P	44 - 126
Avobenzone	121	123	P/P	76 - 212
Azinphos Methyl	106	104	P/P	43 - 192
Azoxystrobin	109	101	P/P	36 - 224
Bromacil	71.5	74.2	P/P	52 - 121
Butylate	43.8	60.7	P/P	28 - 91.0
Caffeine	59.0	70.5	P/P	50 - 134
Carbophenothion	82.8	94.4	P/P	56 - 129
Carfentrazone Ethyl	80.9	97.0	P/P	60 - 141
Chlorfenapyr	78.9	93.5	P/P	56 - 115
Chlorpyrifos Ethyl	78.1	94.2	P/P	60 - 118
Chlorpyrifos Methyl	94.8	95.0	P/P	68 - 119

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P414025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Coumaphos	84.1	111	P/P	18 - 250
Cyanazine	88.7	96.9	P/P	61 - 250
Cyprodinil	83.5	90.3	P/P	55 - 145
Demeton	71.3	69.9	P/P	30 - 159
Diazinon	92.5	89.8	P/P	70 - 123
Difenoconazole	124	131	P/P	49 - 204
Dimethenamid	73.3	75.4	P/P	64 - 115
Dimethomorph	101	86.9	P/P	12 - 219
Disulfoton	79.4	87.8	P/P	44 - 125
Dithiopyr	78.3	85.7	P/P	64 - 115
EPTC	29.5	50.5	P/P	28 - 86.0
Ethion	58.2	84.6	P/P	33 - 125
Ethoprop	73.7	84.5	P/P	64 - 116
Etridiazole	35.2	53.3	P/P	34 - 91.0
Fenamiphos	83.9	96.7	P/P	12 - 127
Fenbuconazole	69.7	91.6	P/P	59 - 151
Fipronil	83.8	100	P/P	67 - 129
Fipronil Desulfinyl	103	112	P/P	65 - 127
Fipronil Sulfide	82.0	103	P/P	61 - 116
Fipronil Sulfone	72.8	91.6	P/P	55 - 117
Fluazifop-P-butyl	112	113	P/P	62 - 127
Fludioxonil	92.1	95.2	P/P	62 - 128
Flumioxazin	139	130	P/P	33 - 250
Flutolanil	74.7	83.2	P/P	56 - 127
Fluxapyroxad	70.3	80.7	P/P	45 - 128
Fonofos	83.0	84.0	P/P	62 - 111
Hexazinone	79.0	87.4	P/P	46 - 139
Imazalil	66.6	74.4	P/P	38 - 142
Iprodione	80.1	89.1	P/P	47 - 135
Loratadine	89.6	69.7	P/P	10 - 244
Malathion	103	118	P/P	61 - 139
Metalaxyl	81.5	89.2	P/P	10 - 119
Metolachlor	81.5	85.3	P/P	65 - 118
Metribuzin	98.9	95.2	P/P	51 - 250
Mevinphos	83.4	99.3	P/P	53 - 121
Molinate	45.9	69.8	P/P	42 - 96.0
Myclobutanil	86.0	88.8	P/P	55 - 128
Naled	72.5	91.1	P/P	10 - 98.0
Napropamide	73.5	84.7	P/P	49 - 121
Norflurazon	108	115	P/P	61 - 126
Octinoxate	97.0	98.1	P/P	30 - 159
Oxadiazon	74.5	75.3	P/P	59 - 116
Oxybenzone	87.7	88.3	P/P	61 - 139
Oxyfluorfen	102	104	P/P	64 - 137
Parathion Ethyl	85.0	86.3	P/P	70 - 112
Parathion Methyl	108	98.7	P/P	76 - 133
Pendimethalin	82.6	73.7	P/P	52 - 117
Phenytoin	27.0	35.1	P/P	10 - 199
Phorate	83.0	76.7	P/P	48 - 121
Prodiamine	49.3	40.2	P/P	26 - 142
Prometon	72.7	78.7	P/P	43 - 123
Prometryn	81.6	88.4	P/P	66 - 127

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P414025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pronamide	94.1	95.0	P/P	75 - 121
Propanil	128	135	P/P	45 - 150
Propargite	50.7	67.7	P/P	42 - 208
Propiconazole	103	119	P/P	60 - 125
Pyraflufen Ethyl	109	106	P/P	70 - 138
Pyridaben	124	138	P/P	35 - 245
Pyriproxyfen	67.7	82.9	P/P	30 - 149
Simazine	102	103	P/P	72 - 125
Stirophos	67.5	87.8	P/P	29 - 164
Sulfentrazone	53.5	59.0	P/P	21 - 139
Tebuconazole	35.5	56.6	P/P	10 - 115
Terbufos	98.6	101	P/P	60 - 123
Terbuthylazine	90.1	88.5	P/P	72 - 115
Thiobencarb	76.1	75.7	P/P	31 - 139
Triadimefon	80.4	79.5	P/P	65 - 116

Reference Method: EPA 8321B
Batch ID: P413528

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	80.7		P	40 - 150
Endothall	96.4		P	40 - 150
Glufosinate	97.1		P	40 - 150
Glyphosate	87.0		P	40 - 150
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P413617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.2		P	40 - 150
2,4,5-T	62.9		P	40 - 150
Acetaminophen	78.6		P	30 - 150
Acetamiprid	98.5		P	40 - 150
Afidopyropen	85.6		P	30 - 150
Bentazon	68.4		P	30 - 150
Benzovindiflupyr	99.3		P	40 - 150
Carbamazepine	113		P	40 - 150
Clothianidin	82.2		P	40 - 150
Dinotefuran	105		P	40 - 150
Diuron	72.4		P	40 - 150
Fenuron	121		P	40 - 150
Fluridone	87.1		P	40 - 150
Hydrocodone	109		P	40 - 150
Ibuprofen	140		P	40 - 150
Imazapyr	112		P	40 - 150
Imidacloprid	121		P	40 - 150
Linuron	79.8		P	40 - 150
Mandestrobin	99.1		P	40 - 150
MCPP	101		P	40 - 150
Naproxen	104		P	40 - 150

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P413617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	97.9		P	40 - 150
Pyraclostrobin	95.9		P	40 - 150
Silvex	56.5		P	40 - 150
Thiamethoxam	100		P	40 - 150
Tolfenpyrad	52.4		P	30 - 150
Triclopyr	68.5		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P413915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P413917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413969

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.6		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2324873	Calcium	103		P	80 - 120
2324873	Iron	104	115	P/P	80 - 120
2324873	Magnesium	108	107	P/P	80 - 120
2324873	Potassium	105	104	P/P	80 - 120
2324873	Sodium	101		P	80 - 120
2324873	Strontium	101	101	P/P	80 - 120
2324873	Tin	102	104	P/P	80 - 120
2324873	Titanium	101	109	P/P	80 - 120
2324873	Vanadium	97.2	101	P/P	80 - 120
2324873	Zinc	102	106	P/P	80 - 120
2325666	Iron	99.5		P	75 - 125
2325666	Strontium	102		P	75 - 125
2325666	Tin	98.9		P	75 - 125
2325666	Titanium	97.3		P	75 - 125
2325666	Vanadium	96.8		P	75 - 125
2325666	Zinc	91.9		P	75 - 125

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2324873	Aluminum	103	104	P/P	80 - 120
2324873	Antimony	101	101	P/P	80 - 120
2324873	Arsenic	97.7	97.0	P/P	80 - 120
2324873	Barium	102	104	P/P	80 - 120
2324873	Beryllium	97.0	93.3	P/P	80 - 120
2324873	Boron	110	110	P/P	80 - 120
2324873	Cadmium	101	102	P/P	80 - 120
2324873	Chromium	98.0	97.8	P/P	80 - 120
2324873	Cobalt	97.1	96.5	P/P	80 - 120
2324873	Copper	97.8	96.7	P/P	80 - 120
2324873	Lead	102	102	P/P	80 - 120
2324873	Molybdenum	101	101	P/P	80 - 120
2324873	Nickel	96.9	95.7	P/P	80 - 120
2324873	Selenium	96.2	94.9	P/P	80 - 120
2324873	Silver	99.8	99.6	P/P	80 - 120
2324873	Thallium	104	104	P/P	80 - 120
2325666	Aluminum	104		P	75 - 125
2325666	Antimony	103		P	75 - 125
2325666	Arsenic	106		P	75 - 125
2325666	Barium	107		P	75 - 125
2325666	Beryllium	98.8		P	75 - 125
2325666	Cadmium	89.6		P	75 - 125
2325666	Chromium	78.6		P	75 - 125
2325666	Cobalt	116		P	75 - 125
2325666	Copper	94.4		P	75 - 125
2325666	Lead	103		P	75 - 125
2325666	Manganese	98.1		P	75 - 125
2325666	Molybdenum	115		P	75 - 125
2325666	Nickel	111		P	75 - 125
2325666	Selenium	48.4		F	75 - 125
2325666	Silver	82.3		P	75 - 125

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413660

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325666	Thallium	105		P	75 - 125

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413939

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325467	Chloride	100		P	90 - 110
2325714	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325467	Sulfate	95.6		P	90 - 110
2325714	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413961

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326042	Ammonia-N	97.2	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325437	Kjeldahl Nitrogen	94.2	99.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414226

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325608	NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413894

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2324661	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325809	O-Phosphate-P	99.4	99.6	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P414025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325768	Acetochlor	104		P	65 - 124
2325768	Alachlor	112		P	61 - 121

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P414025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325768	Ametryn	102		P	52 - 216
2325768	Atrazine Desethyl	56.5		P	15 - 160
2325768	Avobenzone	112		P	59 - 206
2325768	Azinphos Methyl	92.5		P	40 - 292
2325768	Azoxystrobin	126		P	12 - 242
2325768	Bromacil	92.6		P	54 - 167
2325768	Butylate	33.7		P	14 - 94.0
2325768	Caffeine	68.6		P	10 - 226
2325768	Carbophenothion	82.9		P	49 - 122
2325768	Carfentrazone Ethyl	80.9		P	53 - 138
2325768	Chlorfenapyr	63.1		P	50 - 150
2325768	Chlorpyrifos Ethyl	73.2		P	52 - 122
2325768	Chlorpyrifos Methyl	85.6		P	66 - 117
2325768	Coumaphos	88.2		P	50 - 220
2325768	Cyanazine	84.9		P	43 - 245
2325768	Cyprodinil	90.2		P	50 - 150
2325768	Demeton	80.5		P	43 - 188
2325768	Diazinon	93.9		P	69 - 131
2325768	Difenoconazole	137		P	34 - 231
2325768	Dimethenamid	76.5		P	55 - 118
2325768	Dimethomorph	121		P	50 - 150
2325768	Disulfoton	80.4		P	38 - 141
2325768	Dithiopyr	23.2		F	42 - 116
2325768	EPTC	30.4		P	18 - 85.0
2325768	Ethion	42.3		P	10 - 131
2325768	Ethoprop	85.5		P	65 - 129
2325768	Etridiazole	48.6		F	50 - 150
2325768	Fenamiphos	44.9		P	31 - 137
2325768	Fenbuconazole	88.9		P	57 - 160
2325768	Fipronil	81.8		P	62 - 132
2325768	Fipronil Desulfinyl	98.6		P	57 - 131
2325768	Fipronil Sulfide	65.0		P	15 - 138
2325768	Fipronil Sulfone	60.7		P	21 - 134
2325768	Fluazifop-P-butyl	89.8		P	54 - 133
2325768	Fludioxonil	81.0		P	58 - 127
2325768	Flumioxazin	127		P	33 - 300
2325768	Flutolanil	62.3		P	42 - 130
2325768	Fluxapyroxad	70.9		P	23 - 141
2325768	Fonofos	78.3		P	58 - 119
2325768	Hexazinone	83.9		P	68 - 172
2325768	Imazalil	77.4		P	48 - 283
2325768	Iprodione	71.2		P	38 - 140
2325768	Loratadine	103		P	50 - 150
2325768	Malathion	76.7		P	40 - 137
2325768	Metalaxyl	78.7		P	21 - 129
2325768	Metolachlor	77.7		P	55 - 122
2325768	Metribuzin	92.4		P	38 - 187
2325768	Mevinphos	90.6		P	54 - 134
2325768	Molinate	57.5		P	41 - 97.0
2325768	Myclobutanil	72.8		P	56 - 125
2325768	Naled	86.0		P	10 - 108
2325768	Napropamide	55.3		P	50 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P414025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325768	Norflurazon	67.2		P	32 - 122
2325768	Octinoxate	98.3		P	25 - 150
2325768	Oxadiazon	63.0		P	40 - 119
2325768	Oxybenzone	79.9		P	59 - 147
2325768	Oxyfluorfen	101		P	61 - 153
2325768	Parathion Ethyl	82.7		P	59 - 130
2325768	Parathion Methyl	113		P	65 - 155
2325768	Pendimethalin	93.4		P	49 - 138
2325768	Phenytoin	38.2		F	50 - 200
2325768	Phorate	78.3		P	54 - 161
2325768	Prodiamine	49.6		P	33 - 161
2325768	Prometon	69.3		P	48 - 140
2325768	Prometryn	44.2		F	55 - 134
2325768	Pronamide	93.4		P	66 - 137
2325768	Propanil	119		P	50 - 150
2325768	Propargite	45.1		F	50 - 200
2325768	Propiconazole	64.5		P	36 - 150
2325768	Pyraflufen Ethyl	67.3		P	50 - 150
2325768	Pyridaben	107		P	50 - 200
2325768	Pyriproxyfen	73.0		P	10 - 165
2325768	Stirophos	20.1		F	50 - 150
2325768	Sulfentrazone	55.9		P	34 - 140
2325768	Tebuconazole	30.0		P	10 - 127
2325768	Terbufos	95.6		P	59 - 138
2325768	Terbuthylazine	91.0		P	68 - 119
2325768	Thiobencarb	58.9		P	50 - 150
2325768	Triadimefon	58.2		P	50 - 150

Reference Method: EPA 8321B
Batch ID: P413528

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325417	Acesulfame K	97.5	115	P/P	40 - 150
2325417	AMPA	77.0	76.0	P/P	40 - 150
2325417	Endothall	92.7	98.7	P/P	40 - 150
2325417	Glufosinate	87.1	87.2	P/P	40 - 150
2325417	Glyphosate	72.3	73.0	P/P	40 - 150
2325417	Sucralose	94.0	110	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P413617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325704	2,4-D	92.6	92.6	P/P	40 - 150
2325704	2,4,5-T	84.9	78.5	P/P	40 - 150
2325704	Acetaminophen	129	164	P/F	30 - 150
2325704	Acetamiprid	120	110	P/P	40 - 150
2325704	Afidopyropen	86.6	77.5	P/P	30 - 150
2325704	Bentazon	71.6	54.8	P/P	30 - 150
2325704	Benzovindiflupyr	109	95.7	P/P	40 - 150
2325704	Carbamazepine	105	90.3	P/P	40 - 150
2325704	Clothianidin	108	114	P/P	40 - 150

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P413617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2325704	Dinotefuran	128	118	P/P	40 - 150
2325704	Diuron	86.0	88.4	P/P	40 - 150
2325704	Fenuron	109	114	P/P	40 - 150
2325704	Fluridone	82.6	88.2	P/P	40 - 150
2325704	Hydrocodone	108	98.8	P/P	40 - 150
2325704	Ibuprofen	84.4	94.7	P/P	40 - 150
2325704	Imidacloprid	113	140	P/P	40 - 150
2325704	Linuron	85.9	82.1	P/P	40 - 150
2325704	Mandestrobin	90.0	82.1	P/P	40 - 150
2325704	MCPP	119	110	P/P	40 - 150
2325704	Naproxen	127	97.8	P/P	40 - 150
2325704	Primidone	102	100	P/P	40 - 150
2325704	Pyraclostrobin	81.1	89.6	P/P	40 - 150
2325704	Silvex	81.0	72.3	P/P	40 - 150
2325704	Thiamethoxam	128	131	P/P	40 - 150
2325704	Tolfenpyrad	49.9	47.6	P/P	30 - 150
2325704	Triclopyr	78.7	80.2	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P413917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326174	Fluoride	98.6	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P413969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2326583	Organic Carbon	97.5	98.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P413647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325812	Color (true)	11.1	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P413651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325811	Turbidity	3.65	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P413660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2324873	Calcium	0.736	Spike	P	0 - 20
2324873	Iron	7.40	Spike	P	0 - 20
2324873	Magnesium	0.248	Spike	P	0 - 20
2324873	Potassium	0.701	Spike	P	0 - 20
2324873	Sodium	0.820	Spike	P	0 - 20
2324873	Strontium	0.129	Spike	P	0 - 20
2324873	Tin	2.21	Spike	P	0 - 20
2324873	Titanium	6.81	Spike	P	0 - 20
2324873	Vanadium	3.98	Spike	P	0 - 20
2324873	Zinc	3.37	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P413660

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2324873	Aluminum	1.58	Spike	P	0 - 20
2324873	Antimony	0.0351	Spike	P	0 - 20
2324873	Arsenic	0.674	Spike	P	0 - 20
2324873	Barium	1.24	Spike	P	0 - 20
2324873	Beryllium	3.33	Spike	P	0 - 20
2324873	Boron	0.0423	Spike	P	0 - 20
2324873	Cadmium	0.367	Spike	P	0 - 20
2324873	Chromium	0.177	Spike	P	0 - 20
2324873	Cobalt	0.641	Spike	P	0 - 20
2324873	Copper	1.11	Spike	P	0 - 20
2324873	Lead	0.547	Spike	P	0 - 20
2324873	Manganese	1.04	Spike	P	0 - 20
2324873	Molybdenum	0.723	Spike	P	0 - 20
2324873	Nickel	1.25	Spike	P	0 - 20
2324873	Selenium	1.45	Spike	P	0 - 20
2324873	Silver	0.180	Spike	P	0 - 20
2324873	Thallium	0.272	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413939

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325467	Chloride	0.233	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P413943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325467	Sulfate	0.0521	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P413961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326042	Ammonia-N	2.37	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P413926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325437	Kjeldahl Nitrogen	5.07	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P414226

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325608	NO2NO3-N	1.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P413894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2324661	Total-P	0.732	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P413653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325809	O-Phosphate-P	0.201	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P414025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Acetochlor	6.12	LCS	P	0 - 24
LFB	Alachlor	5.07	LCS	P	0 - 26

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P414025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Ametryn	7.56	LCS	P	0 - 25
LFB	Atrazine	1.69	LCS	P	0 - 29
LFB	Atrazine Desethyl	3.25	LCS	P	0 - 62
LFB	Avobenzone	2.09	LCS	P	0 - 30
LFB	Azinphos Methyl	1.40	LCS	P	0 - 76
LFB	Azoxystrobin	6.94	LCS	P	0 - 47
LFB	Bromacil	3.65	LCS	P	0 - 39
LFB	Butylate	32.4	LCS	P	0 - 35
LFB	Caffeine	17.7	LCS	P	0 - 27
LFB	Carbophenothion	13.0	LCS	P	0 - 28
LFB	Carfentrazone Ethyl	18.1	LCS	P	0 - 21
LFB	Chlorfenapyr	17.0	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	18.7	LCS	P	0 - 23
LFB	Chlorpyrifos Methyl	0.209	LCS	P	0 - 30
LFB	Coumaphos	28.0	LCS	P	0 - 30
LFB	Cyanazine	8.90	LCS	P	0 - 77
LFB	Cyprodinil	7.79	LCS	P	0 - 30
LFB	Demeton	1.94	LCS	P	0 - 48
LFB	Diazinon	3.03	LCS	P	0 - 25
LFB	Difenoconazole	6.12	LCS	P	0 - 37
LFB	Dimethenamid	2.86	LCS	P	0 - 21
LFB	Dimethomorph	15.1	LCS	P	0 - 30
LFB	Disulfoton	10.0	LCS	P	0 - 51
LFB	Dithiopyr	8.95	LCS	P	0 - 21
LFB	EPTC	52.4	LCS	F	0 - 41
LFB	Ethion	36.9	LCS	P	0 - 63
LFB	Ethoprop	13.7	LCS	P	0 - 38
LFB	Etridiazole	40.9	LCS	F	0 - 30
LFB	Fenamiphos	14.2	LCS	P	0 - 91
LFB	Fenbuconazole	27.1	LCS	P	0 - 36
LFB	Fipronil	17.8	LCS	P	0 - 32
LFB	Fipronil Desulfinyl	8.14	LCS	P	0 - 23
LFB	Fipronil Sulfide	22.5	LCS	P	0 - 31
LFB	Fipronil Sulfone	22.9	LCS	P	0 - 32
LFB	Fluazifop-P-butyl	0.426	LCS	P	0 - 23
LFB	Fludioxonil	3.30	LCS	P	0 - 23
LFB	Flumioxazin	6.69	LCS	P	0 - 39
LFB	Flutolanil	10.8	LCS	P	0 - 27
LFB	Fluxapyroxad	13.8	LCS	P	0 - 38
LFB	Fonofos	1.18	LCS	P	0 - 28
LFB	Hexazinone	10.2	LCS	P	0 - 63
LFB	Imazalil	11.2	LCS	P	0 - 58
LFB	Iprodione	10.7	LCS	P	0 - 42
LFB	Loratadine	25.0	LCS	P	0 - 30
LFB	Malathion	13.7	LCS	P	0 - 23
LFB	Metalaxyl	9.03	LCS	P	0 - 100
LFB	Metolachlor	4.53	LCS	P	0 - 27
LFB	Metribuzin	3.81	LCS	P	0 - 79
LFB	Mevinphos	17.4	LCS	P	0 - 58
LFB	Molinate	41.3	LCS	P	0 - 42
LFB	Myclobutanil	3.24	LCS	P	0 - 27

Quality Assurance Report
Precision

Reference Method: EPA 8270E
Batch ID: P414025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Naled	22.8	LCS	P	0 - 32
LFB	Napropamide	14.2	LCS	P	0 - 30
LFB	Norflurazon	5.98	LCS	P	0 - 25
LFB	Octinoxate	1.20	LCS	P	0 - 30
LFB	Oxadiazon	1.04	LCS	P	0 - 30
LFB	Oxybenzone	0.711	LCS	P	0 - 30
LFB	Oxyfluorfen	1.99	LCS	P	0 - 22
LFB	Parathion Ethyl	1.51	LCS	P	0 - 32
LFB	Parathion Methyl	9.10	LCS	P	0 - 30
LFB	Pendimethalin	11.4	LCS	P	0 - 39
LFB	Phenytoin	25.8	LCS	P	0 - 30
LFB	Phorate	7.84	LCS	P	0 - 41
LFB	Prodiamine	20.5	LCS	P	0 - 70
LFB	Prometon	7.89	LCS	P	0 - 47
LFB	Prometryn	8.04	LCS	P	0 - 30
LFB	Pronamide	0.911	LCS	P	0 - 25
LFB	Propanil	4.96	LCS	P	0 - 30
LFB	Propargite	28.8	LCS	P	0 - 30
LFB	Propiconazole	14.6	LCS	P	0 - 25
LFB	Pyraflufen Ethyl	2.30	LCS	P	0 - 30
LFB	Pyridaben	11.4	LCS	P	0 - 30
LFB	Pyriproxyfen	20.1	LCS	P	0 - 53
LFB	Simazine	1.22	LCS	P	0 - 25
LFB	Stirophos	26.1	LCS	P	0 - 30
LFB	Sulfentrazone	9.82	LCS	P	0 - 45
LFB	Tebuconazole	45.8	LCS	P	0 - 51
LFB	Terbufos	2.44	LCS	P	0 - 36
LFB	Terbuthylazine	1.74	LCS	P	0 - 24
LFB	Thiobencarb	0.493	LCS	P	0 - 30
LFB	Triadimefon	1.13	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P413528

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325417	Acesulfame K	16.7	Spike	P	0 - 30
2325417	AMPA	1.26	Spike	P	0 - 30
2325417	Endothall	6.23	Spike	P	0 - 30
2325417	Glufosinate	0.0937	Spike	P	0 - 30
2325417	Glyphosate	0.975	Spike	P	0 - 30
2325417	Sucralose	15.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P413617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325704	2,4-D	0.0172	Spike	P	0 - 30
2325704	2,4,5-T	7.83	Spike	P	0 - 30
2325704	Acetaminophen	23.6	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P413617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325704	Acetamiprid	9.21	Spike	P	0 - 30
2325704	Afidopyropen	11.1	Spike	P	0 - 30
2325704	Bentazon	17.8	Spike	P	0 - 30
2325704	Benzovindiflupyr	12.6	Spike	P	0 - 30
2325704	Carbamazepine	13.0	Spike	P	0 - 30
2325704	Clothianidin	4.98	Spike	P	0 - 30
2325704	Dinotefuran	7.99	Spike	P	0 - 30
2325704	Diuron	2.53	Spike	P	0 - 30
2325704	Fenuron	4.12	Spike	P	0 - 30
2325704	Fluridone	6.62	Spike	P	0 - 30
2325704	Hydrocodone	9.20	Spike	P	0 - 30
2325704	Ibuprofen	11.5	Spike	P	0 - 30
2325704	Imazapyr	10.5	Spike	P	0 - 30
2325704	Imidacloprid	21.2	Spike	P	0 - 30
2325704	Linuron	4.57	Spike	P	0 - 30
2325704	Mandestrobin	9.14	Spike	P	0 - 30
2325704	MCPP	7.59	Spike	P	0 - 30
2325704	Naproxen	26.3	Spike	P	0 - 30
2325704	Primidone	1.93	Spike	P	0 - 30
2325704	Pyraclostrobin	10.0	Spike	P	0 - 30
2325704	Silvex	11.4	Spike	P	0 - 30
2325704	Thiamethoxam	2.29	Spike	P	0 - 30
2325704	Tolfenpyrad	4.75	Spike	P	0 - 30
2325704	Triclopyr	1.88	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P413915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326174	Total Alkalinity	0.644	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P414018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2325521	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P413917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326174	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P413969

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

Quality Assurance Report
Precision

Reference Method: SM 5310 B-2011
Batch ID: P413969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2326583	Organic Carbon	0.507	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2325766
Field Sample ID: G4CE0206

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	97.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	125	P	30 - 160
EPA 8321B	Diuron-d6	65.3	P	30 - 160
EPA 8321B	Endothall-d6	96.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	44.5	P	30 - 160
EPA 8321B	Primidone-d5	125	P	30 - 160
EPA 8321B	Sucralose-d6	112	P	30 - 160

Lab Sample ID: 2325768
Field Sample ID: G4CE0206

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Caffeine-d9	64.2	P	20 - 200
EPA 8270E	Simazine-d10	100	P	71 - 140
EPA 8270E	Terbufos-d10	73.8	P	62 - 131
EPA 8270E	Terphenyl-d14	57.7	P	52 - 141

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A112036
Included Lab Sample IDs: 2325763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	102	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A112037
Included Lab Sample IDs: 2325763

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A112038
Included Lab Sample IDs: 2325809

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

Reference Method: EPA 8321B
Run ID: A112044
Included Lab Sample IDs: 2325766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	121	120	P/P	60 - 160
Sucralose	116	112	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A112092
Included Lab Sample IDs: 2325767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	101	101	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Strontium	98.7	100	P/P	90 - 110
Tin	99.4	100	P/P	90 - 110
Titanium	97.7	100	P/P	90 - 110
Vanadium	99.2	100	P/P	90 - 110
Zinc	100	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112109
Included Lab Sample IDs: 2325767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	106	P/P	90 - 110
Antimony	99.2	103	P/P	90 - 110
Arsenic	95.9	98.9	P/P	90 - 110
Barium	99.0	105	P/P	90 - 110
Boron	104	102	P/P	90 - 110
Cadmium	100	99.8	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112109
Included Lab Sample IDs: 2325767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	96.8	105	P/P	90 - 110
Cobalt	95.7	104	P/P	90 - 110
Copper	95.6	103	P/P	90 - 110
Lead	99.1	98.0	P/P	90 - 110
Manganese	98.2	106	P/P	90 - 110
Molybdenum	98.2	97.6	P/P	90 - 110
Nickel	96.2	104	P/P	90 - 110
Selenium	97.8	101	P/P	90 - 110
Silver	98.8	98.7	P/P	90 - 110
Thallium	100	98.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A112146
Included Lab Sample IDs: 2325767

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	94.2	108	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A112157
Included Lab Sample IDs: 2325766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	113	P/P	50 - 150
2,4,5-T	97.0	119	P/P	50 - 150
Acetaminophen	105	109	P/P	60 - 160
Acetamiprid	112	103	P/P	50 - 150
Afidopyropen	102	119	P/P	50 - 150
Bentazon	102	90.2	P/P	50 - 160
Benzovindiflupyr	123	108	P/P	50 - 150
Carbamazepine	92.9	101	P/P	60 - 150
Clothianidin	72.8	108	P/P	60 - 150
Dinotefuran	104	96.0	P/P	50 - 150
Diuron	111	101	P/P	60 - 160
Fenuron	101	107	P/P	60 - 150
Fluridone	107	103	P/P	60 - 160
Hydrocodone	109	114	P/P	60 - 150
Ibuprofen	75.6	148	P/P	50 - 160
Imazapyr	103	105	P/P	50 - 150
Imidacloprid	91.8	95.8	P/P	60 - 150
Linuron	115	100	P/P	60 - 150
Mandestrobin	98.3	102	P/P	50 - 150
MCPP	102	95.3	P/P	50 - 150
Naproxen	95.9	85.5	P/P	50 - 160
Primidone	87.2	114	P/P	60 - 150
Pyraclostrobin	97.5	114	P/P	60 - 150
Silvex	98.5	105	P/P	50 - 150
Thiamethoxam	100	111	P/P	50 - 150
Tolfenpyrad	104	97.8	P/P	60 - 150
Triclopyr	99.0	108	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A112166
Included Lab Sample IDs: 2325766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.8	97.8	P/P	60 - 160
Glufosinate	84.6	107	P/P	60 - 160
Glyphosate	85.4	89.6	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A112175
Included Lab Sample IDs: 2325766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	105	104	P/P	60 - 160

Reference Method: SM 2320 B-2011
Run ID: A112189
Included Lab Sample IDs: 2325763

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	97.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A112189
Included Lab Sample IDs: 2325763

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A112198
Included Lab Sample IDs: 2325763

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A112204
Included Lab Sample IDs: 2325764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.7	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A112207
Included Lab Sample IDs: 2325764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.8	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A112260
Included Lab Sample IDs: 2325764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A112329
Included Lab Sample IDs: 2325764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A112349
Included Lab Sample IDs: 2325764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A112393
Included Lab Sample IDs: 2325768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Avobenzone	105		P	80 - 120
Octinoxate	97.4		P	80 - 120
Oxybenzone	94.9		P	80 - 120

Reference Method: EPA 8270E
Run ID: A112410
Included Lab Sample IDs: 2325768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	101		P	80 - 120
Alachlor	98.2		P	80 - 120
Ametryn	95.3		P	80 - 120
Atrazine Desethyl	111		P	80 - 120
Azinphos Methyl	113		P	80 - 120
Azoxystrobin	96.5		P	80 - 120
Bromacil	95.9		P	80 - 120
Butylate	94.4		P	80 - 120
Caffeine	92.6		P	80 - 120
Carbophenothion	108		P	80 - 120
Carfentrazone Ethyl	106		P	80 - 120
Chlorfenapyr	111		P	80 - 120
Chlorpyrifos Ethyl	108		P	80 - 120
Chlorpyrifos Methyl	107		P	80 - 120
Coumaphos	113		P	80 - 120
Cyanazine	102		P	80 - 120
Cyprodinil	100		P	80 - 120
Demeton	112		P	80 - 120
Diazinon	99.1		P	80 - 120
Difenoconazole	116		P	80 - 120
Dimethenamid	101		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A112410
Included Lab Sample IDs: 2325768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dimethomorph	95.7		P	80 - 120
Disulfoton	104		P	80 - 120
Dithiopyr	100		P	80 - 120
EPTC	102		P	80 - 120
Ethion	114		P	80 - 120
Ethoprop	111		P	80 - 120
Etridiazole	99.0		P	80 - 120
Fenamiphos	112		P	80 - 120
Fenbuconazole	101		P	80 - 120
Fipronil	107		P	80 - 120
Fipronil Desulfinyl	108		P	80 - 120
Fipronil Sulfide	115		P	80 - 120
Fipronil Sulfone	106		P	80 - 120
Fluazifop-P-butyl	114		P	80 - 120
Fludioxonil	108		P	80 - 120
Flumioxazin	107		P	80 - 120
Flutolanil	97.4		P	80 - 120
Fluxapyroxad	95.4		P	80 - 120
Fonofos	110		P	80 - 120
Hexazinone	99.3		P	80 - 120
Imazalil	113		P	80 - 120
Iprodione	111		P	80 - 120
Loratadine	97.3		P	80 - 120
Malathion	109		P	80 - 120
Metalaxyl	90.3		P	80 - 120
Metolachlor	97.4		P	80 - 120
Metribuzin	100		P	80 - 120
Mevinphos	119		P	80 - 120
Molinate	98.2		P	80 - 120
Myclobutanil	112		P	80 - 120
Naled	117		P	80 - 120
Napropamide	109		P	80 - 120
Norflurazon	98.4		P	80 - 120
Oxadiazon	101		P	80 - 120
Oxyfluorfen	108		P	80 - 120
Parathion Ethyl	97.9		P	80 - 120
Parathion Methyl	95.1		P	80 - 120
Pendimethalin	89.3		P	80 - 120
Phenytoin	119		P	80 - 120
Phorate	111		P	80 - 120
Prodiamine	111		P	80 - 120
Prometon	97.4		P	80 - 120
Prometryn	94.7		P	80 - 120
Pronamide	93.9		P	80 - 120
Propanil	100		P	80 - 120
Propargite	105		P	80 - 120
Propiconazole	94.7		P	80 - 120
Pyraflufen Ethyl	99.0		P	80 - 120
Pyridaben	113		P	80 - 120
Pyriproxyfen	97.1		P	80 - 120
Simazine	113		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270E
Run ID: A112410
Included Lab Sample IDs: 2325768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Stirophos	107		P	80 - 120
Sulfentrazone	109		P	80 - 120
Tebuconazole	109		P	80 - 120
Terbufos	110		P	80 - 120
Terbuthylazine	101		P	80 - 120
Thiobencarb	91.2		P	80 - 120
Triadimefon	96.7		P	80 - 120

Reference Method: EPA 8270E
Run ID: A112415
Included Lab Sample IDs: 2325768

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Atrazine	101		P	80 - 120

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	99.9					11.1	
EPA 180.1 Rev. 2.0	Turbidity	97.1					3.65	
EPA 200.7 Rev. 4.4	Calcium	104	103					0.736
	Iron	104	99.5	104	115			7.40
	Magnesium	105	108	107				0.248
	Potassium	104	105	104				0.701
	Sodium	101	101					0.820
	Strontium	99.4	101	101	102			0.129
	Tin	102	102	104	98.9			2.21
	Titanium	102	97.3	101	109			6.81
	Vanadium	95.4	97.2	101	96.8			3.98
	Zinc	103	102	106	91.9			3.37
EPA 200.8 Rev. 5.4	Aluminum	101	103	104	104			1.58
	Antimony	100	103	101	101			0.0351
	Arsenic	98.1	106	97.7	97.0			0.674
	Barium	102	107	102	104			1.24
	Beryllium	91.9	98.8	97.0	93.3			3.33
	Boron	107	110	110				0.0423
	Cadmium	99.6	89.6	101	102			0.367
	Chromium	97.5	78.6	98.0	97.8			0.177
	Cobalt	97.1	116	97.1	96.5			0.641
	Copper	96.2	94.4	97.8	96.7			1.11
	Lead	100	103	102	102			0.547
	Manganese	97.2	98.1					1.04
	Molybdenum	98.6	115	101	101			0.723
	Nickel	97.4	111	96.9	95.7			1.25
	Selenium	97.2	48.4	96.2	94.9			1.45
	Silver	98.8	82.3	99.8	99.6			0.180
	Thallium	101	105	104	104			0.272
EPA 300.0 Rev. 2.1	Chloride	103	100	101			0.233	
	Sulfate	102	95.6	98.9			0.0521	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	97.2	94.8				2.37
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	91.3	94.2	99.9				5.07
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5	98.5				1.01
EPA 365.1 Rev. 2.0	Total-P	102	102	103				0.732
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	99.6	99.4				0.201
EPA 8270E	Acetochlor	90.7 96.4	104			6.12		
	Alachlor	86.9 82.6	112			5.07		
	Ametryn	90.2 83.6	102			7.56		
	Atrazine	95.2 93.6				1.69		
	Atrazine Desethyl	69.5 67.3	56.5			3.25		
	Avobenzone	121 123	112			2.09		
	Azinphos Methyl	104 106	92.5			1.40		
	Azoxystrobin	101 109	126			6.94		
	Bromacil	74.2 71.5	92.6			3.65		
	Butylate	43.8 60.7	33.7			32.4		
	Caffeine	59.0 70.5	68.6			17.7		
	Carbophenothion	82.8 94.4	82.9			13.0		
	Carfentrazone Ethyl	80.9 97.0	80.9			18.1		
	Chlorfenapyr	78.9 93.5	63.1			17.0		
	Chlorpyrifos Ethyl	78.1 94.2	73.2			18.7		
	Chlorpyrifos Methyl	94.8 95.0	85.6			0.209		
	Coumaphos	84.1 111	88.2			28.0		
	Cyanazine	88.7 96.9	84.9			8.90		

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery	Precision		
					LCS	SMP	MS
EPA 8270E	Cyprodinil	83.5	90.3	90.2	7.79		
	Demeton	71.3	69.9	80.5	1.94		
	Diazinon	92.5	89.8	93.9	3.03		
	Difenoconazole	124	131	137	6.12		
	Dimethenamid	73.3	75.4	76.5	2.86		
	Dimethomorph	101	86.9	121	15.1		
	Disulfoton	79.4	87.8	80.4	10.0		
	Dithiopyr	78.3	85.7	23.2	8.95		
	EPTC	29.5	50.5	30.4	52.4		
	Ethion	58.2	84.6	42.3	36.9		
	Ethoprop	73.7	84.5	85.5	13.7		
	Etridiazole	35.2	53.3	48.6	40.9		
	Fenamiphos	83.9	96.7	44.9	14.2		
	Fenbuconazole	69.7	91.6	88.9	27.1		
	Fipronil	83.8	100	81.8	17.8		
	Fipronil Desulfinyl	103	112	98.6	8.14		
	Fipronil Sulfide	82.0	103	65.0	22.5		
	Fipronil Sulfone	72.8	91.6	60.7	22.9		
	Fluazifop-P-butyl	112	113	89.8	0.426		
	Fludioxonil	92.1	95.2	81.0	3.30		
	Flumioxazin	139	130	127	6.69		
	Flutolanil	74.7	83.2	62.3	10.8		
	Fluxapyroxad	70.3	80.7	70.9	13.8		
	Fonofos	83.0	84.0	78.3	1.18		
	Hexazinone	79.0	87.4	83.9	10.2		
	Imazalil	66.6	74.4	77.4	11.2		
	Iprodione	80.1	89.1	71.2	10.7		
	Loratadine	89.6	69.7	103	25.0		
	Malathion	103	118	76.7	13.7		
	Metalaxyl	81.5	89.2	78.7	9.03		
	Metolachlor	81.5	85.3	77.7	4.53		
	Metribuzin	98.9	95.2	92.4	3.81		
	Mevinphos	83.4	99.3	90.6	17.4		
	Molinate	45.9	69.8	57.5	41.3		
	Myclobutanil	86.0	88.8	72.8	3.24		
	Naled	72.5	91.1	86.0	22.8		
	Napropamide	73.5	84.7	55.3	14.2		
	Norflurazon	108	115	67.2	5.98		
	Octinoxate	97.0	98.1	98.3	1.20		
	Oxadiazon	74.5	75.3	63.0	1.04		
	Oxybenzone	87.7	88.3	79.9	0.711		
	Oxyfluorfen	102	104	101	1.99		
	Parathion Ethyl	85.0	86.3	82.7	1.51		
	Parathion Methyl	108	98.7	113	9.10		
	Pendimethalin	82.6	73.7	93.4	11.4		
	Phenytoin	27.0	35.1	38.2	25.8		
	Phorate	83.0	76.7	78.3	7.84		
	Prodiamine	49.3	40.2	49.6	20.5		
	Prometon	72.7	78.7	69.3	7.89		
	Prometryn	81.6	88.4	44.2	8.04		
	Pronamide	94.1	95.0	93.4	0.911		
	Propanil	128	135	119	4.96		
	Propargite	50.7	67.7	45.1	28.8		
	Propiconazole	103	119	64.5	14.6		

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270E	Pyraflufen Ethyl	109	106	67.3		2.30		
	Pyridaben	124	138	107		11.4		
	Pyriproxyfen	67.7	82.9	73.0		20.1		
	Simazine	102	103			1.22		
	Stirophos	67.5	87.8	20.1		26.1		
	Sulfentrazone	53.5	59.0	55.9		9.82		
	Tebuconazole	35.5	56.6	30.0		45.8		
	Terbufos	98.6	101	95.6		2.44		
	Terbuthylazine	90.1	88.5	91.0		1.74		
	Thiobencarb	76.1	75.7	58.9		0.493		
	Triadimefon	80.4	79.5	58.2		1.13		
EPA 8321B	2,4-D	84.2		92.6	92.6			0.0172
	2,4,5-T	62.9		84.9	78.5			7.83
	Acesulfame K	113		97.5	115			16.7
	Acetaminophen	78.6		164	129			23.6
	Acetamiprid	98.5		120	110			9.21
	Afidopyropen	85.6		86.6	77.5			11.1
	AMPA	80.7		77.0	76.0			1.26
	Bentazon	68.4		71.6	54.8			17.8
	Benzovindiflupyr	99.3		109	95.7			12.6
	Carbamazepine	113		105	90.3			13.0
	Clothianidin	82.2		108	114			4.98
	Dinotefuran	105		118	128			7.99
	Diuron	72.4		86.0	88.4			2.53
	Endothall	96.4		92.7	98.7			6.23
	Fenuron	121		114	109			4.12
	Fluridone	87.1		82.6	88.2			6.62
	Glufosinate	97.1		87.1	87.2			0.0937
	Glyphosate	87.0		72.3	73.0			0.975
	Hydrocodone	109		98.8	108			9.20
	Ibuprofen	140		84.4	94.7			11.5
	Imazapyr	112						10.5
	Imidacloprid	121		113	140			21.2
	Linuron	79.8		85.9	82.1			4.57
	Mandestrobin	99.1		90.0	82.1			9.14
	MCPP	101		119	110			7.59
	Naproxen	104		127	97.8			26.3
	Primidone	97.9		100	102			1.93
	Pyraclostrobin	95.9		81.1	89.6			10.0
	Silvex	56.5		81.0	72.3			11.4
	Sucralose	109		94.0	110			15.5
	Thiamethoxam	100		131	128			2.29
	Tolfenpyrad	52.4		49.9	47.6			4.75
	Triclopyr	68.5		78.7	80.2			1.88
SM 2320 B-2011	Total Alkalinity	97.3					0.644	
SM 2540 C-2011	TDS						0.0	
SM 4500-F- C-2011	Fluoride	97.5		98.6	98.6			0.0
SM 5310 B-2011	Organic Carbon	99.6		97.5	98.2			0.507

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2325763

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2325763
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2325767
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2325767
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2325763
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2325763
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2325764
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2325764
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2325764
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2325764
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2325809
EPA 8270E	Analysis of Sunscreen Compounds in Water by GC/MS-SIM	2325768
EPA 8270E	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2325768
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2325766
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2325763
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2325767
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2325763
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2325763
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2325763
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2325764

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	05/10/2022			05/10/2022 16:26	Samantha L Bates	2325763
EPA 180.1 Rev. 2.0	05/10/2022			05/10/2022 14:47	Khloe J Berg	2325763
EPA 200.7 Rev. 4.4	05/10/2022	05/11/2022 10:15	Megan Whitefoot	05/11/2022 23:48	McKinley C Carter	2325767
EPA 200.8 Rev. 5.4	05/10/2022	05/11/2022 10:15	Megan Whitefoot	05/12/2022 17:39	Alexander Thompson	2325767
	05/10/2022	05/11/2022 10:15	Megan Whitefoot	05/13/2022 13:09	Alexander Thompson	2325767
EPA 300.0 Rev. 2.1	05/10/2022			05/17/2022 11:05	Anna M. Plaviak	2325763
EPA 350.1 Rev. 2.0	05/10/2022			05/17/2022 11:40	Ping Hua	2325764
EPA 351.2 Rev. 2.0	05/10/2022	05/20/2022 08:33	Samantha L Bates	05/23/2022 15:36	Alexandra J Mattheus	2325764
EPA 353.2 Rev. 2.0	05/10/2022			05/23/2022 09:44	Beverly Y. Sanders	2325764
EPA 365.1 Rev. 2.0	05/10/2022	05/17/2022 14:42	Simonne.V. Calhoun	05/18/2022 19:09	Sarah A Nixon	2325764
EPA 365.1 Rev. 2.0 dissolved	05/10/2022			05/10/2022 16:08	Nathaniel J Jones	2325809
EPA 8270E	05/10/2022	05/16/2022 08:00	Rasheda Ghaffari	05/19/2022 15:41	Vandana T. Nagar	2325768
	05/10/2022	05/16/2022 08:00	Rasheda Ghaffari	05/24/2022 19:56	Arthur Maknenko	2325768
	05/10/2022	05/16/2022 08:00	Rasheda Ghaffari	05/24/2022 22:37	Vandana T. Nagar	2325768
EPA 8321B	05/10/2022	05/10/2022 12:30	Manjita Shrestha	05/11/2022 04:31	Manjita Shrestha	2325766
	05/10/2022	05/10/2022 12:30	Manjita Shrestha	05/13/2022 21:15	Manjita Shrestha	2325766
	05/10/2022	05/10/2022 12:30	Manjita Shrestha	05/16/2022 08:23	Manjita Shrestha	2325766
	05/10/2022	05/12/2022 10:00	June Rhew	05/14/2022 18:37	Juyoung Kim	2325766
SM 2320 B-2011	05/10/2022			05/16/2022 22:38	Dale L. Simmons	2325763
SM 2340 B-2011	05/10/2022			05/11/2022 23:48	McKinley C Carter	2325767
SM 2540 C-2011	05/10/2022			05/13/2022 12:41	Ping Hua	2325763
SM 2540 D-2011	05/10/2022			05/13/2022 12:41	Ping Hua	2325763
SM 4500-F- C-2011	05/10/2022			05/16/2022 22:38	Dale L. Simmons	2325763
SM 5310 B-2011	05/10/2022			05/17/2022 00:41	Khloe J Berg	2325764