

Chemical Analysis Report

WAS-SECT-2019-04-16-01

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

Event Description: **SCI 3**
Request ID: **RQ-2019-02-25-07**
Customer: **WAS-SECT**
Project ID: **SMP**

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

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 06-MAY-2019 13:41



NON-CONFORMANCE REPORT INCLUDED

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: Little Sweetwater Creek Above Floodplain

Collection Date/Time: 04/16/2019 10:49

Field ID: G2WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078451	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P362261	
	EPA 300.0 Rev. 2.1	Chloride	1.8		mg Cl/L	P362489	
		Sulfate	1.9		mg SO4/L	P362491	
	SM 2120 B	Color (true)	23		PCU	P362308	
	SM 2320 B-97	Total Alkalinity	0.65	UY	mg CaCO3/L	P362851	
	SM 2540 C-97	TDS	15	UY	mg/L	P363043	
	SM 2540 D-97	TSS	4	IY	mg/L	P362912	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P362853	
2078452	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P362714	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P362698	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P362600	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P362532	
	SM 5310 B-00	Organic Carbon	1.9		mg C/L	P362485	
2078453	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362255	
2078457	EPA 8321B	2,4-D	0.0020	U	ug/L	P362252	
		Acesulfame K**	0.10	U	ug/L	P362469	
		AMPA**	0.10	U	ug/L	P362469	
		Sucralose**	0.010	U	ug/L	P362469	
		Acetaminophen**	0.0080	U	ug/L	P362252	
		Endothall**	0.25	U	ug/L	P362469	
		Glufosinate**	0.10	U	ug/L	P362469	
		Bentazon	8.0E-04	U	ug/L	P362252	
		Glyphosate**	0.10	U	ug/L	P362469	
		Carbamazepine**	8.0E-04	U	ug/L	P362252	
		Diuron	0.0020	U	ug/L	P362252	
		Fenuron	0.016	U	ug/L	P362252	
		Fluridone**	8.0E-04	U	ug/L	P362252	MS
		Imazapyr**	0.0040	U	ug/L	P362252	
		Hydrocodone**	0.0020	U	ug/L	P362252	
		Ibuprofen**	0.020	U	ug/L	P362252	
		Imidacloprid	0.0020	U	ug/L	P362252	MS
		Linuron	0.0040	U	ug/L	P362252	
		MCP	0.0020	U	ug/L	P362252	
		Naproxen**	0.0080	U	ug/L	P362252	
		Primidone**	0.0040	U	ug/L	P362252	
		Pyraclostrobin**	0.0020	U	ug/L	P362252	
		Triclopyr**	0.0040	U	ug/L	P362252	
2078458	EPA 200.7 Rev. 4.4	Barium	7.5		ug/L	P362361	
		Calcium	0.71		mg/L	P362361	
		Iron	97	I	ug/L	P362361	
		Magnesium	0.34		mg/L	P362361	
		Potassium	0.36	I	mg/L	P362361	
		Sodium	1.2	I	mg/L	P362361	

Field ID: G2WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078458	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P362361	
	EPA 200.8 Rev. 5.4	Aluminum	120		ug/L	P362361	
		Antimony	0.050	U	ug/L	P362361	
		Arsenic	0.12	I	ug/L	P362361	
		Boron**	8.2		ug/L	P362361	
		Cadmium	0.020	U	ug/L	P362361	
		Chromium	0.40	U	ug/L	P362361	
		Copper	0.40	U	ug/L	P362361	
		Lead	0.20	U	ug/L	P362361	
		Nickel	0.50	U	ug/L	P362361	
		Selenium	0.20	U	ug/L	P362361	
		Silver	0.010	U	ug/L	P362361	
		Thallium	0.10	U	ug/L	P362361	
2078459	EPA 8270D	Acetochlor	0.26	U	ng/L	P362397	
		Alachlor	0.26	U	ng/L	P362397	
		Ametryn	0.62	UJ	ng/L	P362397	RPD
		Atrazine	0.26	U	ng/L	P362397	
		Atrazine Desethyl	1.6	U	ng/L	P362397	
		Azinphos Methyl	5.2	U	ng/L	P362397	
		Bromacil	0.52	UJ	ng/L	P362397	RPD
		Butylate	0.41	U	ng/L	P362397	
		Chlorpyrifos Ethyl	0.26	U	ng/L	P362397	
		Chlorpyrifos Methyl	0.10	U	ng/L	P362397	
		Cyanazine	3.4	U	ng/L	P362397	
		Demeton	7.2	U	ng/L	P362397	
		Diazinon	0.13	U	ng/L	P362397	
		Dimethenamid**	0.10	U	ng/L	P362397	
		Disulfoton	0.52	U	ng/L	P362397	
		Dithiopyr**	0.10	U	ng/L	P362397	
		EPTC	1.3	U	ng/L	P362397	
		Ethion	0.16	U	ng/L	P362397	
		Ethoprop	0.10	U	ng/L	P362397	
		Fenamiphos	0.52	UJ	ng/L	P362397	LCS, RPD
		Fipronil	0.26	U	ng/L	P362397	
		Fipronil Desulfinyl**	0.13	U	ng/L	P362397	
		Fipronil Sulfide	0.16	U	ng/L	P362397	
		Fipronil Sulfone	0.16	U	ng/L	P362397	
		Fonofos	0.21	U	ng/L	P362397	
		Hexazinone	0.52	UJ	ng/L	P362397	LCS, MS, RPD
		Malathion	0.36	U	ng/L	P362397	
		Metalaxyl	0.31	UJ	ng/L	P362397	LCS, RPD
		Metolachlor	0.52	U	ng/L	P362397	
		Metribuzin	0.78	UJ	ng/L	P362397	CCV
		Mevinphos	0.52	UJ	ng/L	P362397	LCS, RPD

Field ID: G2WA0018

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2078459	EPA 8270D	Molinate	0.31	U	ng/L	P362397	
		Norflurazon	0.52	U	ng/L	P362397	
		Oxadiazon**	0.10	U	ng/L	P362397	
		Parathion Ethyl	0.26	U	ng/L	P362397	
		Parathion Methyl	0.57	U	ng/L	P362397	
		Pendimethalin	1.0	U	ng/L	P362397	
		Phorate	0.26	U	ng/L	P362397	
		Prodiamine**	0.18	U	ng/L	P362397	
		Prometon	0.93	UJ	ng/L	P362397	LCS
		Prometryn	0.21	UJ	ng/L	P362397	LCS, RPD
		Simazine	0.52	U	ng/L	P362397	
		Tebuconazole**	0.52	UJ	ng/L	P362397	LCS, RPD
		Terbufos	0.10	U	ng/L	P362397	
		Terbuthylazine	0.44	U	ng/L	P362397	

Ref. Method and Comment:

SM 2320 B-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 C-97: Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample. Sample was left out at room temperature overnight, should be stored below 6 degC.

SM 4500 F-C-97: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

EPA 8270D: MS accuracies for atrazine, simazine, metribuzin, and bromacil not assessed due to high content of these parameters in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Non-Conformance Report

NCR ID: 7647

Event(s)

WAS-SECT-2019-04-16-01

Job(s)

TLH-2019-04-16-63

Sample(s)

2078451

Test(s)

NCR Type: CUSTODY

NCR Category: General

Observation: Samples stored at room temperature overnight on 04/18/2019.

Resolution: Chemistry Administrator notified, samples returned to refrigerator on 04/19/2019 at 12:00. Data will be qualified as appropriate.

Authorized by/Date: Peter D. Kaus 5/3/2019

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P362261

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P362361

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
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: P362361

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	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: P362489

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P362491

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P362714

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: P362698

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P362600

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P362532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P362255

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

Reference Method: EPA 8270D

Batch ID: P362397

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.60	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	5.0	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	3.2	U	ng/L
Demeton	7.0	U	ng/L
Diazinon	0.12	U	ng/L
Dimethenamid	0.10	U	ng/L
Disulfoton	0.50	U	ng/L
Dithiopyr	0.10	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.50	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Desulfinyl	0.12	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.30	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270D

Batch ID: P362397

Component	Result	Code	Units
Metolachlor	0.50	U	ng/L
Metribuzin	0.75	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Oxadiazon	0.10	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.55	U	ng/L
Pendimethalin	1.0	U	ng/L
Phorate	0.25	U	ng/L
Prodiamine	0.18	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Tebuconazole	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B

Batch ID: P362252

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	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
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P362469

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P362308

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362851

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-97
Batch ID: P363043

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362912

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362853

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362485

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: P362361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	109		P	85 - 115
Calcium	105		P	85 - 115
Iron	105		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	107		P	85 - 115
Sodium	101		P	85 - 115
Zinc	109		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P362361

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.1		P	85 - 115
Antimony	98.6		P	85 - 115
Arsenic	103		P	85 - 115
Boron	103		P	85 - 115
Cadmium	99.6		P	85 - 115
Chromium	94.6		P	85 - 115
Copper	102		P	85 - 115
Lead	104		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Silver	107		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P362489

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P362491

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P362714

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P362698

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P362600

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P362532

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P362255

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

Reference Method: EPA 8270D

Batch ID: P362397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	104	101	P/P	71 - 121
Alachlor	102	99.7	P/P	72 - 119
Ametryn	47.4	75.9	P/P	47 - 144
Atrazine	96.6	97.2	P/P	75 - 123
Atrazine Desethyl	52.1	49.3	P/P	45 - 133
Azinphos Methyl	101	96.4	P/P	66 - 165
Bromacil	62.2	43.8	P/P	43 - 123
Butylate	58.1	58.5	P/P	27 - 83.0
Chlorpyrifos Ethyl	98.7	97.0	P/P	70 - 117
Chlorpyrifos Methyl	90.9	84.9	P/P	71 - 120
Cyanazine	72.2	70.5	P/P	34 - 264
Demeton	61.0	65.0	P/P	41 - 122
Diazinon	98.2	94.8	P/P	70 - 127
Dimethenamid	103	99.2	P/P	66 - 123
Disulfoton	84.5	81.5	P/P	56 - 127
Dithiopyr	107	104	P/P	67 - 125
EPTC	61.0	58.3	P/P	24 - 84.0
Ethion	103	104	P/P	53 - 132
Ethoprop	88.1	84.3	P/P	57 - 117
Fenamiphos	32.9	15.2	F/F	55 - 136
Fipronil	103	91.4	P/P	64 - 126
Fipronil Desulfinyl	101	94.3	P/P	47 - 114
Fipronil Sulfide	102	96.2	P/P	57 - 120
Fipronil Sulfone	97.7	86.9	P/P	52 - 115
Fonofos	82.4	82.7	P/P	61 - 121
Hexazinone	48.4	16.9	F/F	62 - 131
Malathion	101	97.5	P/P	67 - 126
Metalaxyl	13.7	9.41	F/F	54 - 128
Metolachlor	104	100	P/P	71 - 118
Metribuzin	73.1	72.4	P/P	42 - 221
Mevinphos	51.2	26.7	P/F	45 - 114
Molinate	67.5	70.4	P/P	33 - 91.0
Norflurazon	92.6	81.4	P/P	60 - 123
Oxadiazon	110	109	P/P	66 - 121

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P362397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	90.2	89.3	P/P	73 - 111
Parathion Methyl	91.2	89.4	P/P	74 - 126
Pendimethalin	103	109	P/P	63 - 131
Phorate	73.7	72.0	P/P	54 - 115
Prodiamine	115	114	P/P	38 - 140
Prometon	22.6	27.6	F/F	61 - 120
Prometryn	59.8	88.9	F/P	62 - 126
Simazine	101	92.6	P/P	75 - 126
Tebuconazole	56.4	14.6	P/F	21 - 115
Terbufos	85.6	83.3	P/P	65 - 116
Terbuthylazine	100	97.6	P/P	73 - 117

Reference Method: EPA 8321B

Batch ID: P362252

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	66.6		P	40 - 150
Acetaminophen	88.0		P	30 - 150
Bentazon	99.8		P	30 - 150
Carbamazepine	81.6		P	40 - 150
Diuron	79.2		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	110		P	40 - 150
Hydrocodone	74.3		P	40 - 150
Ibuprofen	79.5		P	40 - 150
Imazapyr	78.4		P	40 - 150
Imidacloprid	89.3		P	40 - 150
Linuron	79.3		P	40 - 150
MCPP	80.4		P	40 - 150
Naproxen	52.3		P	40 - 150
Primidone	81.1		P	40 - 150
Pyraclostrobin	90.5		P	40 - 150
Triclopyr	56.2		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P362469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	106		P	40 - 150
AMPA	116		P	40 - 150
Endothall	114		P	40 - 150
Glufosinate	119		P	40 - 150
Glyphosate	118		P	40 - 140
Sucralose	107		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P362308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	107		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P362851

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362853

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P362361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078334	Barium	98.6		P	80 - 120
2078334	Iron	106		P	80 - 120
2078334	Magnesium	106		P	80 - 120
2078334	Potassium	101		P	80 - 120
2078334	Sodium	97.1		P	80 - 120
2078334	Zinc	105		P	80 - 120
2078485	Barium	102	103	P/P	80 - 120
2078485	Calcium	107		P	80 - 120
2078485	Iron	108	109	P/P	80 - 120
2078485	Magnesium	114	115	P/P	80 - 120
2078485	Potassium	104	106	P/P	80 - 120
2078485	Sodium	91.2		P	80 - 120
2078485	Zinc	106	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P362361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078334	Aluminum	100		P	80 - 120
2078334	Antimony	99.5		P	80 - 120
2078334	Arsenic	103		P	80 - 120
2078334	Boron	108		P	80 - 120
2078334	Cadmium	101		P	80 - 120
2078334	Chromium	93.6		P	80 - 120
2078334	Copper	98.7		P	80 - 120
2078334	Lead	107		P	80 - 120
2078334	Nickel	97.8		P	80 - 120
2078334	Selenium	101		P	80 - 120
2078334	Silver	108		P	80 - 120
2078334	Thallium	107		P	80 - 120
2078485	Aluminum	101	101	P/P	80 - 120
2078485	Antimony	93.8	94.0	P/P	80 - 120
2078485	Arsenic	99.7	98.9	P/P	80 - 120
2078485	Boron	110	109	P/P	80 - 120
2078485	Cadmium	102	100	P/P	80 - 120
2078485	Chromium	96.4	95.4	P/P	80 - 120
2078485	Copper	101	99.8	P/P	80 - 120
2078485	Lead	105	104	P/P	80 - 120
2078485	Nickel	103	102	P/P	80 - 120
2078485	Selenium	96.9	95.5	P/P	80 - 120
2078485	Silver	108	109	P/P	80 - 120
2078485	Thallium	103	103	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P362489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078411	Chloride	102		P	90 - 110
2078466	Chloride	103		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362491

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078411	Sulfate	103		P	90 - 110
2078466	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362714

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078452	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078452	Kjeldahl Nitrogen	110	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362600

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078328	NO2NO3-N	96.6	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362532

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078470	Total-P	99.9	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078259	O-Phosphate-P	96.5	96.5	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P362397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078905	Acetochlor	93.2	94.2	P/P	63 - 129
2078905	Alachlor	89.9	89.6	P/P	65 - 127
2078905	Ametryn	92.4	94.3	P/P	40 - 164
2078905	Atrazine Desethyl	63.2	58.8	P/P	14 - 157
2078905	Azinphos Methyl	94.5	90.1	P/P	49 - 180
2078905	Butylate	46.5	47.6	P/P	10 - 94.0
2078905	Chlorpyrifos Ethyl	97.4	98.2	P/P	58 - 123
2078905	Chlorpyrifos Methyl	92.9	91.1	P/P	58 - 125
2078905	Cyanazine	108	97.0	P/P	24 - 253
2078905	Demeton	85.6	82.4	P/P	25 - 149
2078905	Diazinon	98.9	98.1	P/P	59 - 144
2078905	Dimethenamid	93.0	91.7	P/P	46 - 139
2078905	Disulfoton	90.9	84.6	P/P	54 - 132
2078905	Dithiopyr	95.9	96.5	P/P	64 - 130
2078905	EPTC	48.7	51.9	P/P	10 - 92.0

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270D

Batch ID: P362397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078905	Ethion	101	98.2	P/P	30 - 148
2078905	Ethoprop	91.4	90.1	P/P	50 - 130
2078905	Fenamiphos	89.0	92.4	P/P	49 - 142
2078905	Fipronil	80.1	75.2	P/P	46 - 140
2078905	Fipronil Desulfinyl	68.7	66.3	P/P	30 - 121
2078905	Fipronil Sulfide	71.4	65.1	P/P	31 - 136
2078905	Fipronil Sulfone	52.7	45.4	P/P	16 - 136
2078905	Fonofos	93.1	91.2	P/P	55 - 129
2078905	Hexazinone	100	172	P/F	56 - 141
2078905	Malathion	95.6	92.3	P/P	56 - 135
2078905	Metalaxyl	90.4	82.6	P/P	54 - 135
2078905	Metolachlor	90.3	92.5	P/P	51 - 140
2078905	Mevinphos	77.1	83.1	P/P	33 - 131
2078905	Molinate	65.9	66.6	P/P	14 - 98.0
2078905	Norflurazon	77.6	72.3	P/P	34 - 136
2078905	Oxadiazon	94.8	94.8	P/P	67 - 116
2078905	Parathion Ethyl	95.5	92.5	P/P	66 - 118
2078905	Parathion Methyl	99.7	96.5	P/P	64 - 136
2078905	Pendimethalin	120	119	P/P	59 - 144
2078905	Phorate	82.3	79.2	P/P	42 - 130
2078905	Prodiamine	124	123	P/P	42 - 148
2078905	Prometon	93.7	121	P/P	59 - 134
2078905	Prometryn	95.0	92.9	P/P	54 - 135
2078905	Tebuconazole	78.9	75.2	P/P	10 - 131
2078905	Terbufos	99.5	92.6	P/P	57 - 131
2078905	Terbutylazine	96.7	94.8	P/P	68 - 125

Reference Method: EPA 8321B

Batch ID: P362252

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078237	2,4-D	86.5	87.4	P/P	40 - 150
2078237	Acetaminophen	77.5	83.3	P/P	30 - 150
2078237	Bentazon	67.3	66.2	P/P	30 - 150
2078237	Carbamazepine	86.6	94.4	P/P	40 - 150
2078237	Diuron	72.2	70.7	P/P	40 - 150
2078237	Fenuron	96.8	109	P/P	40 - 150
2078237	Fluridone	176	72.4	F/P	40 - 150
2078237	Hydrocodone	93.7	94.9	P/P	40 - 150
2078237	Ibuprofen	65.0	61.0	P/P	40 - 150
2078237	Imazapyr	97.0	55.2	P/P	40 - 150
2078237	Imidacloprid	159	170	F/F	40 - 150
2078237	Linuron	70.9	72.5	P/P	40 - 150
2078237	MCP	101	105	P/P	40 - 150
2078237	Naproxen	69.9	56.9	P/P	40 - 150
2078237	Primidone	67.6	64.2	P/P	40 - 150
2078237	Pyraclostrobin	74.6	80.8	P/P	40 - 150
2078237	Triclopyr	61.2	56.0	P/P	40 - 150

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P362469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078457	Acesulfame K	102	86.1	P/P	40 - 150
2078457	AMPA	147	145	P/P	40 - 150
2078457	Endothall	103	105	P/P	40 - 150
2078457	Glufosinate	112	123	P/P	40 - 150
2078457	Glyphosate	113	114	P/P	40 - 140
2078457	Sucralose	76.2	93.8	P/P	40 - 150

Reference Method: SM 5310 B-00

Batch ID: P362485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078429	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P362261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078428	Turbidity	0.613	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078485	Barium	0.899	Spike	P	0 - 20
2078485	Calcium	1.27	Spike	P	0 - 20
2078485	Iron	0.875	Spike	P	0 - 20
2078485	Magnesium	0.634	Spike	P	0 - 20
2078485	Potassium	1.51	Spike	P	0 - 20
2078485	Sodium	1.62	Spike	P	0 - 20
2078485	Zinc	0.593	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362361

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078485	Aluminum	0.165	Spike	P	0 - 20
2078485	Antimony	0.155	Spike	P	0 - 20
2078485	Arsenic	0.711	Spike	P	0 - 20
2078485	Boron	1.16	Spike	P	0 - 20
2078485	Cadmium	1.58	Spike	P	0 - 20
2078485	Chromium	1.01	Spike	P	0 - 20
2078485	Copper	0.762	Spike	P	0 - 20
2078485	Lead	0.667	Spike	P	0 - 20
2078485	Nickel	0.813	Spike	P	0 - 20
2078485	Selenium	1.40	Spike	P	0 - 20
2078485	Silver	0.943	Spike	P	0 - 20
2078485	Thallium	0.0120	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078411	Chloride	1.33	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362491

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078411	Sulfate	0.479	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362714

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078452	Ammonia-N	1.36	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362698

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078452	Kjeldahl Nitrogen	2.90	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362600

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078328	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078470	Total-P	1.62	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078259	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078905	Acetochlor	1.11	Spike	P	0 - 30
2078905	Alachlor	0.334	Spike	P	0 - 30
2078905	Ametryn	1.55	Spike	P	0 - 30
2078905	Atrazine	1.89	Spike	P	0 - 30
2078905	Atrazine Desethyl	5.13	Spike	P	0 - 30
2078905	Azinphos Methyl	4.78	Spike	P	0 - 30
2078905	Bromacil	4.83	Spike	P	0 - 30
2078905	Butylate	2.38	Spike	P	0 - 30
2078905	Chlorpyrifos Ethyl	0.884	Spike	P	0 - 30
2078905	Chlorpyrifos Methyl	1.94	Spike	P	0 - 30
2078905	Cyanazine	10.9	Spike	P	0 - 30
2078905	Demeton	3.78	Spike	P	0 - 30
2078905	Diazinon	0.864	Spike	P	0 - 30
2078905	Dimethenamid	1.46	Spike	P	0 - 30
2078905	Disulfoton	7.18	Spike	P	0 - 30
2078905	Dithiopyr	0.549	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078905	EPTC	6.41	Spike	P	0 - 30
2078905	Ethion	2.36	Spike	P	0 - 30
2078905	Ethoprop	1.10	Spike	P	0 - 30
2078905	Fenamiphos	3.79	Spike	P	0 - 30
2078905	Fipronil	5.70	Spike	P	0 - 30
2078905	Fipronil Desulfinyl	2.99	Spike	P	0 - 30
2078905	Fipronil Sulfide	7.15	Spike	P	0 - 30
2078905	Fipronil Sulfone	8.46	Spike	P	0 - 30
2078905	Fonofos	2.08	Spike	P	0 - 30
2078905	Hexazinone	46.0	Spike	F	0 - 30
2078905	Malathion	3.47	Spike	P	0 - 30
2078905	Metaxyl	8.69	Spike	P	0 - 30
2078905	Metolachlor	1.40	Spike	P	0 - 30
2078905	Metribuzin	7.82	Spike	P	0 - 30
2078905	Mevinphos	7.50	Spike	P	0 - 30
2078905	Molinate	1.09	Spike	P	0 - 30
2078905	Norflurazon	7.07	Spike	P	0 - 30
2078905	Oxadiazon	0.00932	Spike	P	0 - 30
2078905	Parathion Ethyl	3.23	Spike	P	0 - 30
2078905	Parathion Methyl	3.21	Spike	P	0 - 30
2078905	Pendimethalin	1.32	Spike	P	0 - 30
2078905	Phorate	3.83	Spike	P	0 - 30
2078905	Prodiamine	0.994	Spike	P	0 - 30
2078905	Prometon	25.4	Spike	P	0 - 30
2078905	Prometryn	2.21	Spike	P	0 - 30
2078905	Simazine	0.137	Spike	P	0 - 30
2078905	Tebuconazole	4.00	Spike	P	0 - 30
2078905	Terbufos	7.11	Spike	P	0 - 30
2078905	Terbutylazine	2.03	Spike	P	0 - 30
LFB	Acetochlor	3.46	LCS	P	0 - 30
LFB	Alachlor	2.74	LCS	P	0 - 30
LFB	Ametryn	46.1	LCS	F	0 - 30
LFB	Atrazine	0.615	LCS	P	0 - 30
LFB	Atrazine Desethyl	5.45	LCS	P	0 - 30
LFB	Azinphos Methyl	4.94	LCS	P	0 - 30
LFB	Bromacil	34.7	LCS	F	0 - 30
LFB	Butylate	0.548	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.69	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	6.83	LCS	P	0 - 30
LFB	Cyanazine	2.41	LCS	P	0 - 30
LFB	Demeton	6.40	LCS	P	0 - 30
LFB	Diazinon	3.46	LCS	P	0 - 30
LFB	Dimethenamid	3.42	LCS	P	0 - 30
LFB	Disulfoton	3.61	LCS	P	0 - 30
LFB	Dithiopyr	2.59	LCS	P	0 - 30
LFB	EPTC	4.42	LCS	P	0 - 30
LFB	Ethion	1.22	LCS	P	0 - 30
LFB	Ethoprop	4.42	LCS	P	0 - 30
LFB	Fenamiphos	74.0	LCS	F	0 - 30
LFB	Fipronil	12.0	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	6.75	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P362397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	5.39	LCS	P	0 - 30
LFB	Fipronil Sulfone	11.8	LCS	P	0 - 30
LFB	Fonofos	0.370	LCS	P	0 - 30
LFB	Hexazinone	96.3	LCS	F	0 - 30
LFB	Malathion	3.35	LCS	P	0 - 30
LFB	Metalaxyl	37.0	LCS	F	0 - 30
LFB	Metolachlor	3.58	LCS	P	0 - 30
LFB	Metribuzin	0.906	LCS	P	0 - 30
LFB	Mevinphos	63.1	LCS	F	0 - 30
LFB	Molinate	4.11	LCS	P	0 - 30
LFB	Norflurazon	12.9	LCS	P	0 - 30
LFB	Oxadiazon	1.35	LCS	P	0 - 30
LFB	Parathion Ethyl	1.04	LCS	P	0 - 30
LFB	Parathion Methyl	2.08	LCS	P	0 - 30
LFB	Pendimethalin	6.04	LCS	P	0 - 30
LFB	Phorate	2.36	LCS	P	0 - 30
LFB	Prodiamine	0.668	LCS	P	0 - 30
LFB	Prometon	20.0	LCS	P	0 - 30
LFB	Prometryn	39.2	LCS	F	0 - 30
LFB	Simazine	8.61	LCS	P	0 - 30
LFB	Tebuconazole	118	LCS	F	0 - 30
LFB	Terbufos	2.69	LCS	P	0 - 30
LFB	Terbuthylazine	2.59	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P362252

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078237	2,4-D	0.554	Spike	P	0 - 30
2078237	Acetaminophen	7.21	Spike	P	0 - 30
2078237	Bentazon	0.814	Spike	P	0 - 30
2078237	Carbamazepine	8.15	Spike	P	0 - 30
2078237	Diuron	2.18	Spike	P	0 - 30
2078237	Fenuron	12.0	Spike	P	0 - 30
2078237	Fluridone	20.4	Spike	P	0 - 30
2078237	Hydrocodone	1.28	Spike	P	0 - 30
2078237	Ibuprofen	6.24	Spike	P	0 - 30
2078237	Imazapyr	24.0	Spike	P	0 - 30
2078237	Imidacloprid	6.54	Spike	P	0 - 30
2078237	Linuron	2.32	Spike	P	0 - 30
2078237	MCP	4.19	Spike	P	0 - 30
2078237	Naproxen	20.6	Spike	P	0 - 30
2078237	Primidone	4.56	Spike	P	0 - 30
2078237	Pyraclostrobin	8.08	Spike	P	0 - 30
2078237	Triclopyr	8.83	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078457	Acesulfame K	16.8	Spike	P	0 - 30
2078457	AMPA	1.17	Spike	P	0 - 30
2078457	Endothall	1.13	Spike	P	0 - 30
2078457	Glufosinate	9.39	Spike	P	0 - 30
2078457	Glyphosate	1.08	Spike	P	0 - 30
2078457	Sucralose	20.7	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P362308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078322	Color (true)	2.20	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P362851

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078704	Total Alkalinity	0.664	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078426	TDS	7.59	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P362853

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078704	Fluoride	0.935	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078429	Organic Carbon	0.130	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 2078457
Field Sample ID: G2WA0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	123	P	30 - 160
EPA 8321B	Carbamazepine-d10	86.1	P	30 - 160
EPA 8321B	Diuron-d6	95.9	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	123	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	123	P	30 - 160
EPA 8321B	Ibuprofen-d3	142	P	30 - 160
EPA 8321B	Primidone-d5	86.8	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	30 - 160

Lab Sample ID: 2078459
Field Sample ID: G2WA0018

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	94.7	P	68 - 130
EPA 8270D	Terbufos-d10	79.9	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90757

Included Lab Sample IDs: 2078453

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.8	97.2	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90758

Included Lab Sample IDs: 2078451

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90760

Included Lab Sample IDs: 2078451

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

Reference Method: SM 2120 B

Run ID: A90769

Included Lab Sample IDs: 2078451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A90843

Included Lab Sample IDs: 2078452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90848

Included Lab Sample IDs: 2078457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.3	89.9	P/P	50 - 150
Acetaminophen	99.9	84.5	P/P	60 - 160
Bentazon	114	113	P/P	50 - 160
Carbamazepine	99.0	103	P/P	60 - 150
Diuron	102	100	P/P	60 - 150
Fenuron	99.0	100	P/P	60 - 150
Fluridone	63.3	62.6	P/P	60 - 160
Hydrocodone	97.8	91.3	P/P	60 - 150
Ibuprofen	111	111	P/P	50 - 160
Imazapyr	95.4	102	P/P	50 - 150
Imidacloprid	93.9	87.8	P/P	60 - 150
Linuron	96.8	93.3	P/P	60 - 150
MCPP	90.3	92.7	P/P	50 - 150
Naproxen	69.0	82.0	P/P	50 - 160
Primidone	88.5	89.2	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A90848
Included Lab Sample IDs: 2078457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	101	136	P/P	60 - 150
Triclopyr	101	101	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A90878
Included Lab Sample IDs: 2078457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	136	118	P/P	60 - 160
Endothall	98.7	107	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90880
Included Lab Sample IDs: 2078452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	98.0	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90895
Included Lab Sample IDs: 2078458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	104	P/P	90 - 110
Calcium	107	104	P/P	90 - 110
Iron	102	102	P/P	90 - 110
Magnesium	106	106	P/P	90 - 110
Potassium	102	100	P/P	90 - 110
Sodium	96.4	90.7	P/P	90 - 110
Zinc	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90902
Included Lab Sample IDs: 2078452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90917
Included Lab Sample IDs: 2078457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	121	94.0	P/P	60 - 160
Glufosinate	116	104	P/P	60 - 160
Glyphosate	107	105	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90946

Included Lab Sample IDs: 2078452

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

Reference Method: SM 2320 B-97

Run ID: A90988

Included Lab Sample IDs: 2078451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90988

Included Lab Sample IDs: 2078451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90990

Included Lab Sample IDs: 2078457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	98.4	96.5	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90992

Included Lab Sample IDs: 2078452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.4	92.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91006

Included Lab Sample IDs: 2078458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.3	99.3	P/P	90 - 110
Antimony	96.8	96.5	P/P	90 - 110
Arsenic	97.6	97.6	P/P	90 - 110
Boron	107	107	P/P	90 - 110
Cadmium	98.7	98.9	P/P	90 - 110
Chromium	99.8	99.1	P/P	90 - 110
Copper	99.4	100	P/P	90 - 110
Lead	105	104	P/P	90 - 110
Nickel	98.6	98.9	P/P	90 - 110
Selenium	96.5	97.1	P/P	90 - 110
Silver	108	107	P/P	90 - 110
Thallium	96.2	94.5	P/P	90 - 110

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8270D

Run ID: A91053

Included Lab Sample IDs: 2078459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	105		P	80 - 120
Ametryn	104		P	80 - 120
Atrazine	99.3		P	80 - 120
Atrazine Desethyl	86.9		P	80 - 120
Azinphos Methyl	96.9		P	80 - 120
Bromacil	101		P	80 - 120
Butylate	97.0		P	80 - 120
Chlorpyrifos Ethyl	99.0		P	80 - 120
Chlorpyrifos Methyl	97.9		P	80 - 120
Cyanazine	86.5		P	80 - 120
Demeton	80.2		P	80 - 120
Diazinon	101		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	96.7		P	80 - 120
Dithiopyr	104		P	80 - 120
EPTC	101		P	80 - 120
Ethion	95.9		P	80 - 120
Ethoprop	97.8		P	80 - 120
Fenamiphos	95.6		P	80 - 120
Fipronil	101		P	80 - 120
Fipronil Desulfinyl	103		P	80 - 120
Fipronil Sulfide	96.6		P	80 - 120
Fipronil Sulfone	96.4		P	80 - 120
Fonofos	101		P	80 - 120
Hexazinone	99.1		P	80 - 120
Malathion	96.5		P	80 - 120
Metaxyl	107		P	80 - 120
Metolachlor	107		P	80 - 120
Metribuzin	73.0*		F	80 - 120
Mevinphos	98.2		P	80 - 120
Molinate	94.9		P	80 - 120
Norflurazon	103		P	80 - 120
Oxadiazon	106		P	80 - 120
Parathion Ethyl	95.4		P	80 - 120
Parathion Methyl	96.2		P	80 - 120
Pendimethalin	97.0		P	80 - 120
Phorate	95.6		P	80 - 120
Prodiamine	99.7		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	105		P	80 - 120
Simazine	99.9		P	80 - 120
Tebuconazole	103		P	80 - 120
Terbufos	94.7		P	80 - 120
Terbutylazine	96.2		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			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity								0.613	
EPA 200.7 Rev. 4.4	Barium	109			98.6	102	103			0.899
	Calcium	105			107					1.27
	Iron	105			106	108	109			0.875
	Magnesium	110			106	114	115			0.634
	Potassium	107			101	104	106			1.51
	Sodium	101			97.1	91.2				1.62
	Zinc	109			105	106	107			0.593
EPA 200.8 Rev. 5.4	Aluminum	99.1			100	101	101			0.165
	Antimony	98.6			99.5	93.8	94.0			0.155
	Arsenic	103			103	99.7	98.9			0.711
	Boron	103			108	110	109			1.16
	Cadmium	99.6			101	102	100			1.58
	Chromium	94.6			93.6	96.4	95.4			1.01
	Copper	102			98.7	101	99.8			0.762
	Lead	104			107	105	104			0.667
	Nickel	101			97.8	103	102			0.813
	Selenium	102			101	96.9	95.5			1.40
	Silver	107			108	108	109			0.943
	Thallium	103			107	103	103			0.0120
EPA 300.0 Rev. 2.1	Chloride	100			102	103			1.33	
	Sulfate	103			103	103			0.479	
EPA 350.1 Rev. 2.0	Ammonia-N	102			102	104				1.36
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100			110	107				2.90
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0			96.6	96.6				0.0
EPA 365.1 Rev. 2.0	Total-P	104			99.9	102				1.62
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101			96.5	96.5				0.0
EPA 8270D	Acetochlor	104	101		93.2	94.2		3.46		1.11
	Alachlor	102	99.7		89.9	89.6		2.74		0.334
	Ametryn	47.4	75.9		92.4	94.3		46.1		1.55
	Atrazine	96.6	97.2					0.615		1.89
	Atrazine Desethyl	52.1	49.3		63.2	58.8		5.45		5.13
	Azinphos Methyl	101	96.4		94.5	90.1		4.94		4.78
	Bromacil	62.2	43.8					34.7		4.83
	Butylate	58.1	58.5		46.5	47.6		0.548		2.38
	Chlorpyrifos Ethyl	98.7	97.0		97.4	98.2		1.69		0.884
	Chlorpyrifos Methyl	90.9	84.9		92.9	91.1		6.83		1.94
	Cyanazine	72.2	70.5		108	97.0		2.41		10.9
	Demeton	61.0	65.0		85.6	82.4		6.40		3.78
	Diazinon	98.2	94.8		98.9	98.1		3.46		0.864
	Dimethenamid	103	99.2		93.0	91.7		3.42		1.46
	Disulfoton	84.5	81.5		90.9	84.6		3.61		7.18
	Dithiopyr	107	104		95.9	96.5		2.59		0.549
	EPTC	61.0	58.3		48.7	51.9		4.42		6.41
	Ethion	103	104		101	98.2		1.22		2.36
	Ethoprop	88.1	84.3		91.4	90.1		4.42		1.10
	Fenamiphos	32.9	15.2		89.0	92.4		74.0		3.79
	Fipronil	103	91.4		80.1	75.2		12.0		5.70
	Fipronil Desulfinyl	101	94.3		68.7	66.3		6.75		2.99
	Fipronil Sulfide	102	96.2		71.4	65.1		5.39		7.15
	Fipronil Sulfone	97.7	86.9		52.7	45.4		11.8		8.46
	Fonofos	82.4	82.7		93.1	91.2		0.370		2.08
	Hexazinone	48.4	16.9		100	172		96.3		46.0
	Malathion	101	97.5		95.6	92.3		3.35		3.47

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision	MS
							SMP	
EPA 8270D	Metalaxyl	13.7	9.41	90.4	82.6	37.0		8.69
	Metolachlor	104	100	90.3	92.5	3.58		1.40
	Metribuzin	73.1	72.4			0.906		7.82
	Mevinphos	51.2	26.7	77.1	83.1	63.1		7.50
	Molinate	67.5	70.4	65.9	66.6	4.11		1.09
	Norflurazon	92.6	81.4	77.6	72.3	12.9		7.07
	Oxadiazon	110	109	94.8	94.8	1.35		0.0093
	Parathion Ethyl	90.2	89.3	95.5	92.5	1.04		3.23
	Parathion Methyl	91.2	89.4	99.7	96.5	2.08		3.21
	Pendimethalin	103	109	120	119	6.04		1.32
	Phorate	73.7	72.0	82.3	79.2	2.36		3.83
	Prodiamine	115	114	124	123	0.668		0.994
	Prometon	22.6	27.6	93.7	121	20.0		25.4
	Prometryn	59.8	88.9	95.0	92.9	39.2		2.21
	Simazine	101	92.6			8.61		0.137
	Tebuconazole	56.4	14.6	78.9	75.2	118		4.00
	Terbufos	85.6	83.3	99.5	92.6	2.69		7.11
	Terbuthylazine	100	97.6	96.7	94.8	2.59		2.03
EPA 8321B	2,4-D	66.6		86.5	87.4			0.554
	Acesulfame K	106		102	86.1			16.8
	Acetaminophen	88.0		77.5	83.3			7.21
	AMPA	116		145	147			1.17
	Bentazon	99.8		67.3	66.2			0.814
	Carbamazepine	81.6		86.6	94.4			8.15
	Diuron	79.2		72.2	70.7			2.18
	Endothall	114		103	105			1.13
	Fenuron	103		96.8	109			12.0
	Fluridone	110		176	72.4			20.4
	Glufosinate	119		123	112			9.39
	Glyphosate	118		114	113			1.08
	Hydrocodone	74.3		93.7	94.9			1.28
	Ibuprofen	79.5		65.0	61.0			6.24
	Imazapyr	78.4		97.0	55.2			24.0
	Imidacloprid	89.3		159	170			6.54
	Linuron	79.3		70.9	72.5			2.32
	MCPP	80.4		101	105			4.19
	Naproxen	52.3		69.9	56.9			20.6
	Primidone	81.1		67.6	64.2			4.56
SM 2120 B	Color (true)	107					2.20	
	Total Alkalinity	102					0.664	
SM 2540 C-97	TDS						7.59	
SM 4500 F-C-97	Fluoride	98.5						0.935
SM 5310 B-00	Organic Carbon	102		101	101			0.130

Reference Method Descriptions

Method / DoH Cert #
EPA 180.1 Rev. 2.0 /
E31780

Description
Turbidity in aqueous matrices

Associated Samples
2078451

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2078458
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2078458
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2078451
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2078451
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2078452
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2078452
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2078452
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2078452
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2078453
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2078459
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2078457
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2078457
SM 2120 B / E31780	True Color measured at 450 nm	2078451
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2078451
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2078451
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2078451
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2078451
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2078452

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/16/2019			04/16/2019 16:28	Adrian Shelby	2078451
EPA 200.7 Rev. 4.4	04/16/2019	04/17/2019 16:40	Elliott D. Healy	04/22/2019 14:06	Betina Topolski	2078458
EPA 200.8 Rev. 5.4	04/16/2019	04/17/2019 16:40	Elliott D. Healy	04/25/2019 19:01	Robert K Palmer	2078458
EPA 300.0 Rev. 2.1	04/16/2019			04/19/2019 00:42	Lipi Saha	2078451
EPA 350.1 Rev. 2.0	04/16/2019			04/22/2019 12:22	Ping Hua	2078452
EPA 351.2 Rev. 2.0	04/16/2019	04/23/2019 12:00	Adrian Shelby	04/25/2019 10:13	Joseph Suarez	2078452
EPA 353.2 Rev. 2.0	04/16/2019			04/22/2019 10:38	Beverly Y. Sanders	2078452
EPA 365.1 Rev. 2.0	04/16/2019	04/19/2019 15:05	Sima Feizi	04/22/2019 17:25	Rosalyn Ballman	2078452
EPA 365.1 Rev. 2.0 dissolved	04/16/2019			04/16/2019 15:36	Jhamieka S. Greenwood	2078453
EPA 8270D	04/16/2019	04/19/2019 09:00	Fe-Val Siddell	04/23/2019 14:47	Vandana T. Nagar	2078459
EPA 8321B	04/16/2019	04/18/2019 12:00	Hoor Shaik	04/22/2019 00:25	Juyoung Kim	2078457
	04/16/2019	04/19/2019 10:15	Rebecca Ware	04/19/2019 12:25	Rebecca Ware	2078457
	04/16/2019	04/19/2019 10:15	Rebecca Ware	04/22/2019 10:52	Rebecca Ware	2078457
	04/16/2019	04/19/2019 10:15	Rebecca Ware	04/24/2019 16:58	Rebecca Ware	2078457
SM 2120 B	04/16/2019			04/16/2019 16:38	Mariam Hanna	2078451
SM 2320 B-97	04/16/2019			04/25/2019 09:11	Dale L. Simmons	2078451
SM 2540 C-97	04/16/2019			04/22/2019 15:58	Yijie Li	2078451
SM 2540 D-97	04/16/2019			04/22/2019 15:58	Yijie Li	2078451
SM 4500 F-C-97	04/16/2019			04/25/2019 09:11	Dale L. Simmons	2078451
SM 5310 B-00	04/16/2019			04/18/2019 15:38	Julia Storbeck	2078452