

Chemical Analysis Report

SW-DIST-2019-04-10-01

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

Event Description: **SCIs**
Request ID: **RQ-2019-04-15-08**
Customer: **SW-DIST**
Project ID: **SCIREF**

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Date Certified: 01-MAY-2019 10:35



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: Alafia R. North Prong @ River Reserve

Collection Date/Time: 04/09/2019 13:10

Field ID: G2SW0090

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076979	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P361923	
	EPA 300.0 Rev. 2.1	Chloride	51		mg Cl/L	P362269	
		Sulfate	70		mg SO4/L	P362272	
	SM 2120 B	Color (true)	42	A	PCU	P361955	
	SM 2320 B-97	Total Alkalinity	94		mg CaCO3/L	P362274	
	SM 2540 C-97	TDS	292	A	mg/L	P362518	
	SM 2540 D-97	TSS	4	IA	mg/L	P362235	
	SM 4500 F-C-97	Fluoride	2.0		mg F/L	P362277	
2076980	EPA 350.1 Rev. 2.0	Ammonia-N	0.019		mg N/L	P362292	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.48		mg N/L	P362340	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P362416	
	EPA 365.1 Rev. 2.0	Total-P	2.6		mg P/L	P362246	
	SM 5310 B-00	Organic Carbon	9.9		mg C/L	P362107	
2076981	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	2.2		mg P/L	P361932	
2076985	EPA 8321B	2,4-D	0.0048	I	ug/L	P361794	
		Acesulfame K**	0.26	I	ug/L	P361901	MS
		AMPA**	0.44		ug/L	P361901	
		Sucralose**	6.4		ug/L	P361901	
		Acetaminophen**	0.0080	U	ug/L	P361794	
		Endothall**	0.25	U	ug/L	P361901	
		Glufosinate**	0.10	U	ug/L	P361901	
		Bentazon	0.0080		ug/L	P361794	
		Glyphosate**	0.20	I	ug/L	P361901	MS
		Carbamazepine**	0.011		ug/L	P361794	
		Diuron	0.0020	U	ug/L	P361794	
		Fenuron	0.016	U	ug/L	P361794	
		Fluridone**	0.0058		ug/L	P361794	
		Imazapyr**	0.091		ug/L	P361794	
		Hydrocodone**	0.0020	U	ug/L	P361794	
		Ibuprofen**	0.020	U	ug/L	P361794	
		Imidacloprid	0.0054	I	ug/L	P361794	MS
		Linuron	0.0040	U	ug/L	P361794	
		MCPP	0.0020	U	ug/L	P361794	
		Naproxen**	0.0080	U	ug/L	P361794	
		Primidone**	0.028		ug/L	P361794	
		Pyraclostrobin**	0.0020	U	ug/L	P361794	
		Triclopyr**	0.0040	U	ug/L	P361794	
2076986	EPA 200.7 Rev. 4.4	Barium	2.4	I	ug/L	P362012	
		Calcium	45.5		mg/L	P362012	
		Iron	290		ug/L	P362012	
		Magnesium	12.5		mg/L	P362012	
		Potassium	3.9		mg/L	P362012	
		Sodium	36.4		mg/L	P362012	

Field ID: G2SW0090

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076986	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P362012	
		Aluminum	144		ug/L	P362012	
	EPA 200.8 Rev. 5.4	Antimony	0.14	I	ug/L	P362012	
		Arsenic	1.96		ug/L	P362012	
		Boron**	309		ug/L	P362012	
		Cadmium	0.027	I	ug/L	P362012	
		Chromium	0.68	I	ug/L	P362012	
		Copper	0.40	U	ug/L	P362012	
		Lead	0.20	U	ug/L	P362012	
		Nickel	2.2		ug/L	P362012	
		Selenium	0.26	I	ug/L	P362012	
		Silver	0.010	U	ug/L	P362012	
		Thallium	0.10	U	ug/L	P362012	
2076987	EPA 8270D	Acetochlor	0.24	U	ng/L	P362087	
		Alachlor	0.24	U	ng/L	P362087	
		Ametryn	0.59	U	ng/L	P362087	
		Atrazine	11		ng/L	P362087	
		Atrazine Desethyl	3.0	I	ng/L	P362087	
		Azinphos Methyl	4.9	U	ng/L	P362087	
		Bromacil	3.8		ng/L	P362087	
		Butylate	0.39	U	ng/L	P362087	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P362087	
		Chlorpyrifos Methyl	0.098	U	ng/L	P362087	
		Cyanazine	3.2	U	ng/L	P362087	
		Demeton	6.8	U	ng/L	P362087	
		Diazinon	0.12	U	ng/L	P362087	
		Dimethenamid**	0.098	U	ng/L	P362087	
		Disulfoton	0.49	U	ng/L	P362087	
		Dithiopyr**	0.098	U	ng/L	P362087	
		EPTC	1.2	U	ng/L	P362087	RPD
		Ethion	0.15	UJ	ng/L	P362087	LCS
		Ethoprop	0.098	U	ng/L	P362087	
		Fenamiphos	0.49	U	ng/L	P362087	
		Fipronil	0.24	U	ng/L	P362087	
		Fipronil Desulfinyl**	0.12	U	ng/L	P362087	
		Fipronil Sulfide	0.15	U	ng/L	P362087	
		Fipronil Sulfone	0.19	I	ng/L	P362087	
		Fonofos	0.20	U	ng/L	P362087	
		Hexazinone	2.3	J	ng/L	P362087	
		Malathion	0.34	U	ng/L	P362087	
		Metalaxyl	0.29	U	ng/L	P362087	
		Metolachlor	0.49	U	ng/L	P362087	
		Metribuzin	0.73	UJ	ng/L	P362087	LCS, MS
		Mevinphos	0.49	U	ng/L	P362087	
		Molinate	0.29	U	ng/L	P362087	

Field ID: G2SW0090

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2076987	EPA 8270D	Norflurazon	0.49	U	ng/L	P362087	
		Oxadiazon**	0.26	I	ng/L	P362087	
		Parathion Ethyl	0.24	U	ng/L	P362087	
		Parathion Methyl	0.54	U	ng/L	P362087	
		Pendimethalin	4.0		ng/L	P362087	MS
		Phorate	0.24	U	ng/L	P362087	
		Prodiamine**	0.17	UJ	ng/L	P362087	LCS, MS
		Prometon	0.88	U	ng/L	P362087	
		Prometryn	0.20	U	ng/L	P362087	
		Simazine	0.49	U	ng/L	P362087	
		Tebuconazole**	0.49	U	ng/L	P362087	
		Terbufos	0.098	U	ng/L	P362087	
		Terbutylazine	0.42	U	ng/L	P362087	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8270D: MS accuracy for metolachlor not assessed due to high content of this parameter in the sample spiked. Reported result qualified with J for hexazinone due to internal standard recovery outside control limits. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361923

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

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: P362012

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: P362269

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

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: P362340

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

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

Reference Method: EPA 8270D
Batch ID: P362087

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: P362087

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: P361794

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: P361901

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: P361955

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P362274

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

Reference Method: SM 2540 C-97
Batch ID: P362518

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P362235

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P362277

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362107

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: P362012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	98.9		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	92.3		P	85 - 115
Antimony	94.7		P	85 - 115
Arsenic	96.8		P	85 - 115
Boron	92.1		P	85 - 115
Cadmium	97.0		P	85 - 115
Chromium	88.5		P	85 - 115
Copper	102		P	85 - 115
Lead	99.0		P	85 - 115
Nickel	101		P	85 - 115
Selenium	101		P	85 - 115
Silver	110		P	85 - 115
Thallium	96.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P362416

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362246

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P361932

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

Reference Method: EPA 8270D
 Batch ID: P362087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	88.8	92.3	P/P	71 - 121
Alachlor	87.4	91.7	P/P	72 - 119
Ametryn	91.1	90.4	P/P	47 - 144
Atrazine	105	111	P/P	75 - 123
Atrazine Desethyl	112	111	P/P	45 - 133
Azinphos Methyl	93.4	93.9	P/P	66 - 165
Bromacil	73.8	74.0	P/P	43 - 123
Butylate	45.7	57.7	P/P	27 - 83.0
Chlorpyrifos Ethyl	87.8	86.0	P/P	70 - 117
Chlorpyrifos Methyl	90.9	90.9	P/P	71 - 120
Cyanazine	186	194	P/P	34 - 264
Demeton	78.2	76.1	P/P	41 - 122
Diazinon	95.7	102	P/P	70 - 127
Dimethenamid	81.6	84.2	P/P	60 - 130
Disulfoton	87.0	83.9	P/P	56 - 127
Dithiopyr	90.3	94.7	P/P	60 - 130
EPTC	48.7	63.1	P/P	24 - 84.0
Ethion	56.6	44.2	P/F	53 - 132
Ethoprop	92.5	95.0	P/P	57 - 117
Fenamiphos	94.2	82.8	P/P	55 - 136
Fipronil	88.8	93.1	P/P	64 - 126
Fipronil Desulfinyl	79.2	82.1	P/P	60 - 130
Fipronil Sulfide	87.1	87.8	P/P	57 - 120
Fipronil Sulfone	80.6	77.5	P/P	52 - 115
Fonofos	94.8	101	P/P	61 - 121
Hexazinone	91.5	92.4	P/P	62 - 131
Malathion	90.5	86.5	P/P	67 - 126
Metalaxyl	92.1	94.2	P/P	54 - 128
Metolachlor	86.7	90.2	P/P	71 - 118
Metribuzin	241	242	F/F	42 - 221
Mevinphos	85.3	86.7	P/P	45 - 114
Molinate	58.5	69.9	P/P	33 - 91.0
Norflurazon	89.7	89.7	P/P	60 - 123
Oxadiazon	91.7	90.8	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P362087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	86.7	88.7	P/P	73 - 111
Parathion Methyl	97.2	96.3	P/P	74 - 126
Pendimethalin	95.3	98.2	P/P	63 - 131
Phorate	90.0	93.9	P/P	54 - 115
Prodiamine	51.2	52.9	F/F	60 - 130
Prometon	85.0	87.4	P/P	61 - 120
Prometryn	85.4	89.9	P/P	62 - 126
Simazine	104	107	P/P	75 - 126
Tebuconazole	37.2	32.5	P/P	30 - 100
Terbufos	94.2	104	P/P	65 - 116
Terbuthylazine	92.3	100	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P361794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	72.6		P	40 - 150
Acetaminophen	82.7		P	30 - 150
Bentazon	86.7		P	30 - 150
Carbamazepine	81.0		P	40 - 150
Diuron	69.9		P	40 - 150
Fenuron	96.3		P	40 - 150
Fluridone	99.0		P	40 - 150
Hydrocodone	79.3		P	40 - 150
Ibuprofen	99.9		P	40 - 150
Imazapyr	84.3		P	40 - 150
Imidacloprid	87.5		P	40 - 150
Linuron	74.6		P	40 - 150
MCPP	86.7		P	40 - 150
Naproxen	61.3		P	40 - 150
Primidone	72.0		P	40 - 150
Pyraclostrobin	61.2		P	40 - 150
Triclopyr	51.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P361901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	117		P	40 - 150
AMPA	96.9		P	40 - 150
Endothall	113		P	40 - 150
Glufosinate	116		P	40 - 150
Glyphosate	83.8		P	40 - 140
Sucralose	108		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P361955

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P362274

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P362277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362107

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: P362012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077023	Barium	101		P	80 - 120
2077023	Calcium	101		P	80 - 120
2077023	Iron	102		P	80 - 120
2077023	Magnesium	102		P	80 - 120
2077023	Potassium	99.3		P	80 - 120
2077023	Sodium	100		P	80 - 120
2077023	Zinc	101		P	80 - 120
2077340	Barium	105	106	P/P	80 - 120
2077340	Calcium	103	104	P/P	80 - 120
2077340	Iron	112	106	P/P	80 - 120
2077340	Magnesium	106	106	P/P	80 - 120
2077340	Potassium	108	107	P/P	80 - 120
2077340	Sodium	105	103	P/P	80 - 120
2077340	Zinc	103	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077023	Aluminum	91.3		P	80 - 120
2077023	Antimony	95.3		P	80 - 120
2077023	Arsenic	97.1		P	80 - 120
2077023	Boron	92.7		P	80 - 120
2077023	Cadmium	96.8		P	80 - 120
2077023	Chromium	88.7		P	80 - 120
2077023	Copper	102		P	80 - 120
2077023	Lead	101		P	80 - 120
2077023	Nickel	98.1		P	80 - 120
2077023	Selenium	101		P	80 - 120
2077023	Silver	110		P	80 - 120
2077023	Thallium	96.3		P	80 - 120
2077340	Aluminum	94.8	96.8	P/P	80 - 120
2077340	Antimony	94.3	97.7	P/P	80 - 120
2077340	Arsenic	97.6	101	P/P	80 - 120
2077340	Boron	97.2	98.1	P/P	80 - 120
2077340	Cadmium	97.1	99.7	P/P	80 - 120
2077340	Chromium	90.4	93.0	P/P	80 - 120
2077340	Copper	107	110	P/P	80 - 120
2077340	Lead	101	108	P/P	80 - 120
2077340	Nickel	104	107	P/P	80 - 120
2077340	Selenium	99.4	103	P/P	80 - 120
2077340	Silver	111	111	P/P	80 - 120
2077340	Thallium	95.2	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076818	Chloride	107		P	90 - 110
2077011	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076818	Sulfate	107		P	90 - 110
2077011	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076991	Ammonia-N	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076931	Kjeldahl Nitrogen	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076924	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076991	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076992	O-Phosphate-P	97.4	99.8	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P362087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078075	Acetochlor	89.7	98.5	P/P	63 - 129
2078075	Alachlor	86.7	92.7	P/P	65 - 127
2078075	Ametryn	84.2	92.8	P/P	40 - 164
2078075	Atrazine	102	106	P/P	66 - 135
2078075	Atrazine Desethyl	110	120	P/P	14 - 157
2078075	Azinphos Methyl	86.8	91.5	P/P	49 - 180
2078075	Bromacil	92.6	104	P/P	48 - 130
2078075	Butylate	51.4	68.5	P/P	10 - 94.0
2078075	Chlorpyrifos Ethyl	83.9	91.3	P/P	58 - 123
2078075	Chlorpyrifos Methyl	87.8	93.2	P/P	58 - 125
2078075	Cyanazine	187	197	P/P	24 - 253
2078075	Demeton	73.1	87.9	P/P	25 - 149
2078075	Diazinon	95.9	102	P/P	59 - 144
2078075	Dimethenamid	72.4	77.3	P/P	60 - 130
2078075	Disulfoton	81.9	94.2	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P362087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2078075	Dithiopyr	89.4	97.4	P/P	60 - 130
2078075	EPTC	55.6	75.8	P/P	10 - 92.0
2078075	Ethion	43.2	53.6	P/P	30 - 148
2078075	Ethoprop	85.6	96.1	P/P	50 - 130
2078075	Fenamiphos	81.4	92.9	P/P	49 - 142
2078075	Fipronil	87.3	96.7	P/P	46 - 140
2078075	Fipronil Desulfinyl	77.6	84.1	P/P	60 - 130
2078075	Fipronil Sulfide	85.9	94.0	P/P	31 - 136
2078075	Fipronil Sulfone	77.2	85.2	P/P	16 - 136
2078075	Fonofos	96.9	104	P/P	55 - 129
2078075	Hexazinone	93.6	108	P/P	56 - 141
2078075	Malathion	87.8	95.1	P/P	56 - 135
2078075	Metalaxyl	89.6	98.0	P/P	54 - 135
2078075	Metribuzin	238	273	P/F	45 - 254
2078075	Mevinphos	82.8	89.8	P/P	33 - 131
2078075	Molinate	65.0	67.6	P/P	14 - 98.0
2078075	Norflurazon	80.0	94.3	P/P	34 - 136
2078075	Oxadiazon	87.4	96.6	P/P	60 - 130
2078075	Parathion Ethyl	86.7	93.9	P/P	66 - 118
2078075	Parathion Methyl	94.3	103	P/P	64 - 136
2078075	Pendimethalin	52.2	57.6	F/F	59 - 144
2078075	Phorate	86.2	94.7	P/P	42 - 130
2078075	Prodiamine	52.6	57.9	F/F	60 - 130
2078075	Prometon	86.0	94.8	P/P	59 - 134
2078075	Prometryn	84.8	93.1	P/P	54 - 135
2078075	Simazine	104	117	P/P	53 - 156
2078075	Tebuconazole	31.7	36.6	P/P	30 - 100
2078075	Terbufos	97.2	104	P/P	57 - 131
2078075	Terbutylazine	93.0	101	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P361794

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076485	2,4-D	66.0	72.2	P/P	40 - 150
2076485	Acetaminophen	77.8	82.4	P/P	30 - 150
2076485	Bentazon	91.4	122	P/P	30 - 150
2076485	Carbamazepine	78.0	87.7	P/P	40 - 150
2076485	Diuron	60.8	68.5	P/P	40 - 150
2076485	Fenuron	104	104	P/P	40 - 150
2076485	Fluridone	134	110	P/P	40 - 150
2076485	Hydrocodone	91.3	92.9	P/P	40 - 150
2076485	Ibuprofen	70.6	61.8	P/P	40 - 150
2076485	Imazapyr	74.4	72.7	P/P	40 - 150
2076485	Imidacloprid	136	162	P/F	40 - 150
2076485	Linuron	74.2	58.7	P/P	40 - 150
2076485	MCPP	92.8	105	P/P	40 - 150
2076485	Naproxen	57.9	69.1	P/P	40 - 150
2076485	Primidone	71.7	63.1	P/P	40 - 150
2076485	Pyraclostrobin	76.2	98.0	P/P	40 - 150
2076485	Triclopyr	46.6	55.9	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P361901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076373	Acesulfame K	178	234	F/F	40 - 150
2076373	AMPA	94.3	95.6	P/P	40 - 150
2076373	Endothall	76.1	77.6	P/P	40 - 150
2076373	Glufosinate	108	109	P/P	40 - 150
2076373	Glyphosate	145	151	F/F	40 - 140
2076373	Sucralose	95.1	97.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P362277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2077321	Fluoride	99.0	99.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P362107

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2076905	Organic Carbon	99.3	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P361923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076923	Turbidity	1.19	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077340	Barium	1.08	Spike	P	0 - 20
2077340	Calcium	0.416	Spike	P	0 - 20
2077340	Iron	6.20	Spike	P	0 - 20
2077340	Magnesium	0.596	Spike	P	0 - 20
2077340	Potassium	0.575	Spike	P	0 - 20
2077340	Sodium	1.08	Spike	P	0 - 20
2077340	Zinc	1.69	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362012

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077340	Aluminum	1.97	Spike	P	0 - 20
2077340	Antimony	3.57	Spike	P	0 - 20
2077340	Arsenic	3.11	Spike	P	0 - 20
2077340	Boron	0.784	Spike	P	0 - 20
2077340	Cadmium	2.60	Spike	P	0 - 20
2077340	Chromium	2.86	Spike	P	0 - 20
2077340	Copper	2.83	Spike	P	0 - 20
2077340	Lead	6.48	Spike	P	0 - 20
2077340	Nickel	3.36	Spike	P	0 - 20
2077340	Selenium	3.56	Spike	P	0 - 20
2077340	Silver	0.282	Spike	P	0 - 20
2077340	Thallium	6.24	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076818	Chloride	0.626	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362272

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076818	Sulfate	0.398	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P362292

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076991	Ammonia-N	1.66	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076931	Kjeldahl Nitrogen	0.574	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P362416

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076924	NO2NO3-N	0.382	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076991	Total-P	0.211	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P361932

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076992	O-Phosphate-P	2.43	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P362087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078075	Acetochlor	9.32	Spike	P	0 - 30
2078075	Alachlor	6.78	Spike	P	0 - 30
2078075	Ametryn	9.72	Spike	P	0 - 30
2078075	Atrazine	3.16	Spike	P	0 - 30
2078075	Atrazine Desethyl	8.75	Spike	P	0 - 30
2078075	Azinphos Methyl	5.34	Spike	P	0 - 30
2078075	Bromacil	12.0	Spike	P	0 - 30
2078075	Butylate	28.5	Spike	P	0 - 30
2078075	Chlorpyrifos Ethyl	8.48	Spike	P	0 - 30
2078075	Chlorpyrifos Methyl	5.96	Spike	P	0 - 30
2078075	Cyanazine	4.73	Spike	P	0 - 30
2078075	Demeton	18.4	Spike	P	0 - 30
2078075	Diazinon	6.38	Spike	P	0 - 30
2078075	Dimethenamid	5.92	Spike	P	0 - 30
2078075	Disulfoton	14.0	Spike	P	0 - 30
2078075	Dithiopyr	8.60	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P362087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2078075	EPTC	30.8	Spike	F	0 - 30
2078075	Ethion	21.5	Spike	P	0 - 30
2078075	Ethoprop	11.5	Spike	P	0 - 30
2078075	Fenamiphos	13.2	Spike	P	0 - 30
2078075	Fipronil	10.1	Spike	P	0 - 30
2078075	Fipronil Desulfinyl	7.93	Spike	P	0 - 30
2078075	Fipronil Sulfide	9.02	Spike	P	0 - 30
2078075	Fipronil Sulfone	9.89	Spike	P	0 - 30
2078075	Fonofos	6.89	Spike	P	0 - 30
2078075	Hexazinone	11.4	Spike	P	0 - 30
2078075	Malathion	7.94	Spike	P	0 - 30
2078075	Metalaxyl	8.14	Spike	P	0 - 30
2078075	Metolachlor	7.41	Spike	P	0 - 30
2078075	Metribuzin	12.8	Spike	P	0 - 30
2078075	Mevinphos	8.14	Spike	P	0 - 30
2078075	Molinate	3.90	Spike	P	0 - 30
2078075	Norflurazon	13.6	Spike	P	0 - 30
2078075	Oxadiazon	10.0	Spike	P	0 - 30
2078075	Parathion Ethyl	7.91	Spike	P	0 - 30
2078075	Parathion Methyl	9.22	Spike	P	0 - 30
2078075	Pendimethalin	5.39	Spike	P	0 - 30
2078075	Phorate	9.40	Spike	P	0 - 30
2078075	Prodiamine	9.62	Spike	P	0 - 30
2078075	Prometon	9.76	Spike	P	0 - 30
2078075	Prometryn	9.43	Spike	P	0 - 30
2078075	Simazine	11.4	Spike	P	0 - 30
2078075	Tebuconazole	14.5	Spike	P	0 - 30
2078075	Terbufos	7.15	Spike	P	0 - 30
2078075	Terbutylazine	8.10	Spike	P	0 - 30
LFB	Acetochlor	3.90	LCS	P	0 - 30
LFB	Alachlor	4.82	LCS	P	0 - 30
LFB	Ametryn	0.717	LCS	P	0 - 30
LFB	Atrazine	5.46	LCS	P	0 - 30
LFB	Atrazine Desethyl	1.14	LCS	P	0 - 30
LFB	Azinphos Methyl	0.529	LCS	P	0 - 30
LFB	Bromacil	0.194	LCS	P	0 - 30
LFB	Butylate	23.3	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	2.00	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	0.00138	LCS	P	0 - 30
LFB	Cyanazine	4.23	LCS	P	0 - 30
LFB	Demeton	2.71	LCS	P	0 - 30
LFB	Diazinon	6.84	LCS	P	0 - 30
LFB	Dimethenamid	3.07	LCS	P	0 - 30
LFB	Disulfoton	3.69	LCS	P	0 - 30
LFB	Dithiopyr	4.75	LCS	P	0 - 30
LFB	EPTC	25.7	LCS	P	0 - 30
LFB	Ethion	24.5	LCS	P	0 - 30
LFB	Ethoprop	2.71	LCS	P	0 - 30
LFB	Fenamiphos	12.9	LCS	P	0 - 30
LFB	Fipronil	4.73	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	3.57	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P362087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	0.850	LCS	P	0 - 30
LFB	Fipronil Sulfone	3.93	LCS	P	0 - 30
LFB	Fonofos	6.26	LCS	P	0 - 30
LFB	Hexazinone	0.933	LCS	P	0 - 30
LFB	Malathion	4.57	LCS	P	0 - 30
LFB	Metalaxyl	2.25	LCS	P	0 - 30
LFB	Metolachlor	4.00	LCS	P	0 - 30
LFB	Metribuzin	0.398	LCS	P	0 - 30
LFB	Mevinphos	1.67	LCS	P	0 - 30
LFB	Molinate	17.6	LCS	P	0 - 30
LFB	Norflurazon	0.0193	LCS	P	0 - 30
LFB	Oxadiazon	0.959	LCS	P	0 - 30
LFB	Parathion Ethyl	2.33	LCS	P	0 - 30
LFB	Parathion Methyl	0.880	LCS	P	0 - 30
LFB	Pendimethalin	3.03	LCS	P	0 - 30
LFB	Phorate	4.27	LCS	P	0 - 30
LFB	Prodiamine	3.16	LCS	P	0 - 30
LFB	Prometon	2.77	LCS	P	0 - 30
LFB	Prometryn	5.21	LCS	P	0 - 30
LFB	Simazine	2.83	LCS	P	0 - 30
LFB	Tebuconazole	13.7	LCS	P	0 - 30
LFB	Terbufos	9.93	LCS	P	0 - 30
LFB	Terbuthylazine	8.51	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P361794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076485	2,4-D	8.99	Spike	P	0 - 30
2076485	Acetaminophen	5.73	Spike	P	0 - 30
2076485	Bentazon	8.92	Spike	P	0 - 30
2076485	Carbamazepine	11.0	Spike	P	0 - 30
2076485	Diuron	11.9	Spike	P	0 - 30
2076485	Fenuron	0.624	Spike	P	0 - 30
2076485	Fluridone	9.07	Spike	P	0 - 30
2076485	Hydrocodone	1.75	Spike	P	0 - 30
2076485	Ibuprofen	13.2	Spike	P	0 - 30
2076485	Imazapyr	1.83	Spike	P	0 - 30
2076485	Imidacloprid	16.2	Spike	P	0 - 30
2076485	Linuron	23.3	Spike	P	0 - 30
2076485	MCP	12.3	Spike	P	0 - 30
2076485	Naproxen	17.6	Spike	P	0 - 30
2076485	Primidone	12.8	Spike	P	0 - 30
2076485	Pyraclostrobin	25.1	Spike	P	0 - 30
2076485	Triclopyr	18.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P361901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076373	Acesulfame K	27.0	Spike	P	0 - 30
2076373	AMPA	1.15	Spike	P	0 - 30
2076373	Endothall	2.04	Spike	P	0 - 30
2076373	Glufosinate	1.29	Spike	P	0 - 30
2076373	Glyphosate	4.32	Spike	P	0 - 30
2076373	Sucralose	2.34	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P361955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076979	Color (true)	1.48	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P362274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077321	Total Alkalinity	2.79	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P362518

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076979	TDS	5.48	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P362277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2077321	Fluoride	0.487	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P362107

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2076905	Organic Carbon	1.37	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: 2076985
Field Sample ID: G2SW0090

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.9	P	30 - 160
EPA 8321B	Diuron-d6	76.8	P	30 - 160
EPA 8321B	Endothall-d6	84.9	P	30 - 160
EPA 8321B	Endothall-d6	84.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	152	P	30 - 160
EPA 8321B	Ibuprofen-d3	92.2	P	30 - 160
EPA 8321B	Primidone-d5	66.8	P	30 - 160
EPA 8321B	Sucralose-d6	90.4	P	30 - 160
EPA 8321B	Sucralose-d6	90.4	P	30 - 160

Lab Sample ID: 2076987
Field Sample ID: G2SW0090

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	95.0	P	68 - 130
EPA 8270D	Terbufos-d10	99.8	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90588

Included Lab Sample IDs: 2076979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90589

Included Lab Sample IDs: 2076981

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.0	96.4	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90600

Included Lab Sample IDs: 2076979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A90662

Included Lab Sample IDs: 2076985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	117	112	P/P	60 - 160
Endothall	133	144	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A90675

Included Lab Sample IDs: 2076985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	111	104	P/P	60 - 160
Glufosinate	120	118	P/P	60 - 160
Glyphosate	122	113	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90680

Included Lab Sample IDs: 2076986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	103	P/P	90 - 110
Calcium	102	102	P/P	90 - 110
Iron	101	102	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Potassium	97.8	98.5	P/P	90 - 110
Sodium	99.1	100	P/P	90 - 110
Zinc	102	102	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90701

Included Lab Sample IDs: 2076980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A90701
Included Lab Sample IDs: 2076980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	98.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90706
Included Lab Sample IDs: 2076985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	91.4	89.2	P/P	60 - 160

Reference Method: SM 2320 B-97
Run ID: A90759
Included Lab Sample IDs: 2076979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.7	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A90759
Included Lab Sample IDs: 2076979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A90760
Included Lab Sample IDs: 2076979

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	101	P/P	90 - 110
Sulfate	105	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A90764
Included Lab Sample IDs: 2076980

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A90796
Included Lab Sample IDs: 2076980

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A90815
Included Lab Sample IDs: 2076980

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90817

Included Lab Sample IDs: 2076980

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.6	95.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90848

Included Lab Sample IDs: 2076985

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	95.6	86.2	P/P	50 - 150
Acetaminophen	112	113	P/P	60 - 160
Bentazon	98.7	114	P/P	50 - 160
Carbamazepine	86.3	105	P/P	60 - 150
Diuron	102	93.4	P/P	60 - 150
Fenuron	98.0	102	P/P	60 - 150
Fluridone	96.1	97.6	P/P	60 - 160
Hydrocodone	82.0	94.5	P/P	60 - 150
Ibuprofen	152	154	P/P	50 - 160
Imazapyr	103	70.8	P/P	50 - 150
Imidacloprid	94.0	101	P/P	60 - 150
Linuron	102	95.4	P/P	60 - 150
MCPP	94.4	93.9	P/P	50 - 150
Naproxen	88.0	69.2	P/P	50 - 160
Primidone	84.3	75.3	P/P	60 - 150
Pyraclostrobin	101	95.0	P/P	60 - 150
Triclopyr	100	85.6	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90862

Included Lab Sample IDs: 2076986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.2	96.2	P/P	90 - 110
Antimony	94.8	94.6	P/P	90 - 110
Arsenic	97.2	96.3	P/P	90 - 110
Boron	90.0	100	P/P	90 - 110
Cadmium	96.2	96.8	P/P	90 - 110
Chromium	93.1	94.9	P/P	90 - 110
Lead	102	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90943

Included Lab Sample IDs: 2076986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	95.0	94.4	P/P	90 - 110
Nickel	95.5	94.0	P/P	90 - 110
Selenium	95.4	94.0	P/P	90 - 110
Silver	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A90967
Included Lab Sample IDs: 2076987

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	107		P	80 - 120
Ametryn	105		P	80 - 120
Atrazine	96.4		P	80 - 120
Atrazine Desethyl	89.1		P	80 - 120
Azinphos Methyl	97.7		P	80 - 120
Bromacil	98.0		P	80 - 120
Butylate	95.1		P	80 - 120
Chlorpyrifos Ethyl	100		P	80 - 120
Chlorpyrifos Methyl	98.9		P	80 - 120
Cyanazine	95.0		P	80 - 120
Demeton	98.2		P	80 - 120
Diazinon	102		P	80 - 120
Dimethenamid	102		P	80 - 120
Disulfoton	94.6		P	80 - 120
Dithiopyr	104		P	80 - 120
EPTC	99.7		P	80 - 120
Ethion	96.4		P	80 - 120
Ethoprop	96.8		P	80 - 120
Fenamiphos	95.4		P	80 - 120
Fipronil	103		P	80 - 120
Fipronil Desulfinyl	102		P	80 - 120
Fipronil Sulfide	96.5		P	80 - 120
Fipronil Sulfone	98.3		P	80 - 120
Fonofos	99.3		P	80 - 120
Hexazinone	99.4		P	80 - 120
Malathion	97.4		P	80 - 120
Metalaxyl	105		P	80 - 120
Metolachlor	108		P	80 - 120
Metribuzin	89.7		P	80 - 120
Mevinphos	102		P	80 - 120
Molinate	98.8		P	80 - 120
Norflurazon	101		P	80 - 120
Oxadiazon	107		P	80 - 120
Parathion Ethyl	93.2		P	80 - 120
Parathion Methyl	94.1		P	80 - 120
Pendimethalin	99.4		P	80 - 120
Phorate	96.5		P	80 - 120
Prodiamine	102		P	80 - 120
Prometon	101		P	80 - 120
Prometryn	102		P	80 - 120
Simazine	97.1		P	80 - 120
Tebuconazole	102		P	80 - 120
Terbufos	96.9		P	80 - 120
Terbutylazine	100		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91043
Included Lab Sample IDs: 2076986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91043

Included Lab Sample IDs: 2076986

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	94.0	91.7	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							1.19	
EPA 200.7 Rev. 4.4	Barium	102		101	105	106			1.08
	Calcium	103		101	103	104			0.416
	Iron	103		102	112	106			6.20
	Magnesium	104		102	106	106			0.596
	Potassium	98.8		99.3	108	107			0.575
	Sodium	98.9		100	105	103			1.08
	Zinc	102		101	103	105			1.69
EPA 200.8 Rev. 5.4	Aluminum	92.3		91.3	94.8	96.8			1.97
	Antimony	94.7		95.3	94.3	97.7			3.57
	Arsenic	96.8		97.1	97.6	101			3.11
	Boron	92.1		92.7	97.2	98.1			0.784
	Cadmium	97.0		96.8	97.1	99.7			2.60
	Chromium	88.5		88.7	90.4	93.0			2.86
	Copper	102		102	107	110			2.83
	Lead	99.0		101	101	108			6.48
	Nickel	101		98.1	104	107			3.36
	Selenium	101		101	99.4	103			3.56
	Silver	110		110	111	111			0.282
	Thallium	96.8		96.3	95.2	101			6.24
EPA 300.0 Rev. 2.1	Chloride	106		107	106			0.626	
	Sulfate	108		107	107			0.398	
EPA 350.1 Rev. 2.0	Ammonia-N	100		100	102				1.66
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108		102	103				0.574
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5		99.5	100				0.382
EPA 365.1 Rev. 2.0	Total-P	101		102	103				0.211
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102		97.4	99.8				2.43
EPA 8270D	Acetochlor	88.8	92.3	89.7	98.5		3.90		9.32
	Alachlor	87.4	91.7	86.7	92.7		4.82		6.78
	Ametryn	91.1	90.4	92.8	84.2		0.717		9.72
	Atrazine	105	111	106	102		5.46		3.16
	Atrazine Desethyl	112	111	120	110		1.14		8.75
	Azinphos Methyl	93.4	93.9	91.5	86.8		0.529		5.34
	Bromacil	73.8	74.0	104	92.6		0.194		12.0
	Butylate	45.7	57.7	68.5	51.4		23.3		28.5
	Chlorpyrifos Ethyl	87.8	86.0	91.3	83.9		2.00		8.48
	Chlorpyrifos Methyl	90.9	90.9	87.8	93.2		0.0013		5.96
	Cyanazine	186	194	187	197		4.23		4.73
	Demeton	78.2	76.1	73.1	87.9		2.71		18.4
	Diazinon	95.7	102	95.9	102		6.84		6.38
	Dimethenamid	81.6	84.2	72.4	77.3		3.07		5.92
	Disulfoton	87.0	83.9	81.9	94.2		3.69		14.0
	Dithiopyr	90.3	94.7	89.4	97.4		4.75		8.60
	EPTC	48.7	63.1	55.6	75.8		25.7		30.8
	Ethion	56.6	44.2	43.2	53.6		24.5		21.5
	Ethoprop	92.5	95.0	85.6	96.1		2.71		11.5
	Fenamiphos	94.2	82.8	92.9	81.4		12.9		13.2
	Fipronil	88.8	93.1	96.7	87.3		4.73		10.1
	Fipronil Desulfinyl	79.2	82.1	84.1	77.6		3.57		7.93
	Fipronil Sulfide	87.1	87.8	94.0	85.9		0.850		9.02
	Fipronil Sulfone	80.6	77.5	85.2	77.2		3.93		9.89
	Fonofos	94.8	101	104	96.9		6.26		6.89
	Hexazinone	91.5	92.4	108	93.6		0.933		11.4
	Malathion	90.5	86.5	95.1	87.8		4.57		7.94

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	92.1	94.2	98.0	89.6	2.25	8.14
	Metolachlor	86.7	90.2			4.00	7.41
	Metribuzin	241	242	273	238	0.398	12.8
	Mevinphos	85.3	86.7	89.8	82.8	1.67	8.14
	Molinate	58.5	69.9	67.6	65.0	17.6	3.90
	Norflurazon	89.7	89.7	94.3	80.0	0.0193	13.6
	Oxadiazon	91.7	90.8	96.6	87.4	0.959	10.0
	Parathion Ethyl	86.7	88.7	93.9	86.7	2.33	7.91
	Parathion Methyl	97.2	96.3	103	94.3	0.880	9.22
	Pendimethalin	95.3	98.2	57.6	52.2	3.03	5.39
	Phorate	90.0	93.9	94.7	86.2	4.27	9.40
	Prodiamine	51.2	52.9	57.9	52.6	3.16	9.62
	Prometon	85.0	87.4	94.8	86.0	2.77	9.76
	Prometryn	85.4	89.9	93.1	84.8	5.21	9.43
	Simazine	104	107	117	104	2.83	11.4
	Tebuconazole	37.2	32.5	36.6	31.7	13.7	14.5
	Terbufos	94.2	104	104	97.2	9.93	7.15
	Terbuthylazine	92.3	100	101	93.0	8.51	8.10
EPA 8321B	2,4-D	72.6		66.0	72.2		8.99
	Acesulfame K	117		178	234		27.0
	Acetaminophen	82.7		77.8	82.4		5.73
	AMPA	96.9		94.3	95.6		1.15
	Bentazon	86.7		91.4	122		8.92
	Carbamazepine	81.0		78.0	87.7		11.0
	Diuron	69.9		60.8	68.5		11.9
	Endothall	113		76.1	77.6		2.04
	Fenuron	96.3		104	104		0.624
	Fluridone	99.0		134	110		9.07
	Glufosinate	116		108	109		1.29
	Glyphosate	83.8		145	151		4.32
	Hydrocodone	79.3		91.3	92.9		1.75
	Ibuprofen	99.9		70.6	61.8		13.2
	Imazapyr	84.3		74.4	72.7		1.83
	Imidacloprid	87.5		136	162		16.2
	Linuron	74.6		74.2	58.7		23.3
	MCPP	86.7		92.8	105		12.3
	Naproxen	61.3		57.9	69.1		17.6
	Primidone	72.0		71.7	63.1		12.8
	Pyraclostrobin	61.2		76.2	98.0		25.1
	Sucralose	108		95.1	97.4		2.34
	Triclopyr	51.1		46.6	55.9		18.1
SM 2120 B	Color (true)	104				1.48	
SM 2320 B-97	Total Alkalinity	101				2.79	
SM 2540 C-97	TDS					5.48	
SM 4500 F-C-97	Fluoride	96.1		99.0	99.5		0.487
SM 5310 B-00	Organic Carbon	99.6		99.3	102		1.37

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2076979

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	2076986
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2076986
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2076979
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2076979
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2076980
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2076980
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2076980
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2076980
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2076981
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2076987
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2076985
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2076985
SM 2120 B / E31780	True Color measured at 450 nm	2076979
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2076979
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2076979
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2076979
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2076979
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2076980

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	04/10/2019			04/10/2019 17:05	Adrian Shelby	2076979
EPA 200.7 Rev. 4.4	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/12/2019 13:45	Betina Topolski	2076986
EPA 200.8 Rev. 5.4	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/20/2019 01:59	Robert K Palmer	2076986
	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/23/2019 16:53	Robert K Palmer	2076986
	04/10/2019	04/11/2019 17:20	Elliott D. Healy	04/26/2019 16:11	Robert K Palmer	2076986
EPA 300.0 Rev. 2.1	04/10/2019			04/16/2019 10:18	Julia Storbeck	2076979
EPA 350.1 Rev. 2.0	04/10/2019			04/16/2019 13:59	Ping Hua	2076980
EPA 351.2 Rev. 2.0	04/10/2019	04/17/2019 12:45	Adrian Shelby	04/18/2019 12:38	Joseph Suarez	2076980
EPA 353.2 Rev. 2.0	04/10/2019			04/18/2019 10:30	Beverly Y. Sanders	2076980
EPA 365.1 Rev. 2.0	04/10/2019	04/16/2019 13:55	Sima Feizi	04/17/2019 16:37	Rosalyn Ballman	2076980
EPA 365.1 Rev. 2.0 dissolved	04/10/2019			04/10/2019 18:53	Jhamieka S. Greenwood	2076981
EPA 8270D	04/10/2019	04/15/2019 08:30	Rasheda Ghaffari	04/16/2019 22:01	Vandana T. Nagar	2076987
EPA 8321B	04/10/2019	04/10/2019 14:00	Hoor Shaik	04/20/2019 01:43	Juyoung Kim	2076985
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/11/2019 20:28	Rebecca Ware	2076985
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 14:43	Rebecca Ware	2076985
	04/10/2019	04/10/2019 15:30	Rebecca Ware	04/12/2019 20:25	Rebecca Ware	2076985
SM 2120 B	04/10/2019			04/10/2019 16:06	Mariam Hanna	2076979
SM 2320 B-97	04/10/2019			04/16/2019 03:02	Samantha Davila	2076979
SM 2540 C-97	04/10/2019			04/11/2019 16:14	Yijie Li	2076979
SM 2540 D-97	04/10/2019			04/11/2019 16:14	Yijie Li	2076979
SM 4500 F-C-97	04/10/2019			04/16/2019 03:02	Samantha Davila	2076979
SM 5310 B-00	04/10/2019			04/13/2019 06:46	Julia Storbeck	2076980