

Chemical Analysis Report

SW-DIST-2019-06-07-01

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

Event Description: **SCI Kit**
Request ID: **RQ-2019-03-04-12**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 28-JUN-2019 07:39

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Blue Springs Run

Collection Date/Time: 06/06/2019 12:40

Field ID: G4SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2093206	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P365306	
	EPA 300.0 Rev. 2.1	Chloride	7.2	A	mg Cl/L	P365707	
		Sulfate	14	A	mg SO4/L	P365711	
	SM 2120 B	Color (true)	2.5	UA	PCU	P365305	
	SM 2320 B-97	Total Alkalinity	162		mg CaCO3/L	P366007	
	SM 2540 C-97	TDS	199		mg/L	P365539	
	SM 2540 D-97	TSS	4	I	mg/L	P365392	
	SM 4500 F-C-97	Fluoride	0.049	I	mg F/L	P365799	
2093207	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P365732	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P365648	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.70		mg N/L	P365653	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P365593	
	SM 5310 B-00	Organic Carbon	0.67	I	mg C/L	P365506	
2093208	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P365301	
2093211	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P365330	
		2,4-D	0.0020	UJ	ug/L	P365439	RPD
		AMPA**	0.10	U	ug/L	P365330	MS
		Sucralose**	0.027	I	ug/L	P365330	
		Endothall**	0.25	U	ug/L	P365330	
		Acetaminophen**	0.0080	UJ	ug/L	P365439	RPD
		Glufosinate**	0.10	U	ug/L	P365330	
		Glyphosate**	0.10	U	ug/L	P365330	
		Bentazon	8.0E-04	U	ug/L	P365439	
		Carbamazepine**	8.0E-04	U	ug/L	P365439	
		Diuron	0.0020	U	ug/L	P365439	
		Fenuron	0.016	U	ug/L	P365439	
		Fluridone**	8.0E-04	U	ug/L	P365439	
		Imazapyr**	0.0040	U	ug/L	P365439	
		Hydrocodone**	0.0020	UJ	ug/L	P365439	RPD
		Ibuprofen**	0.020	UJ	ug/L	P365439	MS, RPD, SUR
		Imidacloprid	0.0020	UJ	ug/L	P365439	RPD
		Linuron	0.0040	U	ug/L	P365439	
		MCPP	0.0020	U	ug/L	P365439	
		Naproxen**	0.0080	UJ	ug/L	P365439	MS, RPD, SUR
		Primidone**	0.0040	UJ	ug/L	P365439	RPD
		Pyraclostrobin**	0.0020	UJ	ug/L	P365439	MS
		Triclopyr**	0.0040	UJ	ug/L	P365439	MS, RPD
2093212	EPA 200.7 Rev. 4.4	Barium	4.0		ug/L	P365476	
		Calcium	71.5		mg/L	P365476	
		Iron	48	I	ug/L	P365476	
		Magnesium	3.24		mg/L	P365476	
		Potassium	0.30	I	mg/L	P365476	

Field ID: G4SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2093212	EPA 200.7 Rev. 4.4	Sodium	4.1		mg/L	P365476	
		Zinc	5.0	U	ug/L	P365476	
	EPA 200.8 Rev. 5.4	Aluminum	33		ug/L	P365476	
		Antimony	0.050	U	ug/L	P365476	
		Arsenic	0.50		ug/L	P365476	
		Boron**	12.4		ug/L	P365476	
		Cadmium	0.053	I	ug/L	P365476	
		Chromium	1.3	I	ug/L	P365476	
		Copper	0.40	U	ug/L	P365476	
		Lead	0.20	U	ug/L	P365476	
		Nickel	0.50	U	ug/L	P365476	
		Selenium	1.18		ug/L	P365476	
		Silver	0.010	U	ug/L	P365476	
		Thallium	0.10	U	ug/L	P365476	
2093213	EPA 8270E	Acetochlor	0.25	U	ng/L	P365463	
		Alachlor	0.25	U	ng/L	P365463	
		Ametryn	0.61	U	ng/L	P365463	
		Atrazine	0.25	U	ng/L	P365463	
		Atrazine Desethyl	1.5	U	ng/L	P365463	
		Azinphos Methyl	5.1	U	ng/L	P365463	
		Bromacil	0.51	U	ng/L	P365463	
		Butylate	0.41	U	ng/L	P365463	
		Chlorpyrifos Ethyl	0.25	U	ng/L	P365463	
		Chlorpyrifos Methyl	0.10	U	ng/L	P365463	
		Cyanazine	3.3	U	ng/L	P365463	
		Demeton	7.1	U	ng/L	P365463	
		Diazinon	0.13	U	ng/L	P365463	
		Dimethenamid**	0.10	U	ng/L	P365463	
		Disulfoton	0.51	U	ng/L	P365463	
		Dithiopyr**	0.10	U	ng/L	P365463	
		EPTC	1.3	U	ng/L	P365463	
		Ethion	0.15	U	ng/L	P365463	
		Ethoprop	0.10	U	ng/L	P365463	
		Fenamiphos	0.51	UJ	ng/L	P365463	RPD
		Fipronil	0.25	U	ng/L	P365463	
		Fipronil Desulfinyl**	0.13	U	ng/L	P365463	
		Fipronil Sulfide	0.15	U	ng/L	P365463	
		Fipronil Sulfone	0.15	U	ng/L	P365463	
		Fonofos	0.20	U	ng/L	P365463	
		Hexazinone	0.51	UJ	ng/L	P365463	LCS, MS, RPD
		Malathion	0.35	U	ng/L	P365463	
		Metaxyl	0.30	UJ	ng/L	P365463	LCS, MS, RPD
		Metolachlor	0.51	U	ng/L	P365463	
		Metribuzin	0.76	U	ng/L	P365463	

Field ID: G4SW0100

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2093213	EPA 8270E	Mevinphos	0.51	U	ng/L	P365463	
		Molinate	0.30	U	ng/L	P365463	
		Norflurazon	0.51	U	ng/L	P365463	
		Oxadiazon**	0.10	U	ng/L	P365463	
		Parathion Ethyl	0.25	U	ng/L	P365463	
		Parathion Methyl	0.56	U	ng/L	P365463	
		Pendimethalin	1.0	U	ng/L	P365463	
		Phorate	0.25	U	ng/L	P365463	
		Prodiamine**	0.18	U	ng/L	P365463	
		Prometon	0.91	U	ng/L	P365463	
		Prometryn	0.20	U	ng/L	P365463	
		Simazine	0.51	U	ng/L	P365463	
		Tebuconazole**	0.51	U	ng/L	P365463	
		Terbufos	0.10	U	ng/L	P365463	
		Terbuthylazine	0.43	U	ng/L	P365463	

Ref. Method and Comment:

SM 2120 B: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

EPA 8321B: Refer to the narrative for an explanation of QC Codes. Surrogate spike recovery exceeding the control limits. Results confirmed in duplicate matrix spikes. Matrix spike precision for pyraclostrobin is not available due to low analyte recoveries.

EPA 8270E: 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: P365306

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365476

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: P365476

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: P365707

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365711

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365732

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: P365648

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365653

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365593

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365301

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

Reference Method: EPA 8270E
Batch ID: P365463

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 8270E
Batch ID: P365463

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: P365330

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P365439

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P365305

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P366007

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

Reference Method: SM 2540 C-97
Batch ID: P365539

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P365392

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P365799

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P365506

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: P365476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.9		P	85 - 115
Calcium	105		P	85 - 115
Iron	106		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	102		P	85 - 115
Sodium	103		P	85 - 115
Zinc	98.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365476

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.5		P	85 - 115
Antimony	96.8		P	85 - 115
Arsenic	101		P	85 - 115
Boron	97.3		P	85 - 115
Cadmium	97.4		P	85 - 115
Chromium	97.3		P	85 - 115
Copper	98.5		P	85 - 115
Lead	96.6		P	85 - 115
Nickel	98.8		P	85 - 115
Selenium	99.3		P	85 - 115
Silver	96.7		P	85 - 115
Thallium	97.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365707

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365711

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365732

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365648

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: P365653

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365593

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365301

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

Reference Method: EPA 8270E
Batch ID: P365463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	107	104	P/P	69 - 122
Alachlor	106	101	P/P	71 - 120
Ametryn	93.1	84.6	P/P	47 - 138
Atrazine	117	109	P/P	74 - 124
Atrazine Desethyl	88.5	78.6	P/P	38 - 138
Azinphos Methyl	105	102	P/P	69 - 154
Bromacil	97.2	88.7	P/P	39 - 121
Butylate	76.0	83.5	P/P	27 - 87.0
Chlorpyrifos Ethyl	102	99.9	P/P	69 - 118
Chlorpyrifos Methyl	94.0	97.5	P/P	70 - 120
Cyanazine	104	98.2	P/P	20 - 250
Demeton	72.4	68.7	P/P	39 - 118
Diazinon	105	101	P/P	68 - 127
Dimethenamid	110	105	P/P	66 - 125
Disulfoton	72.4	68.5	P/P	52 - 126
Dithiopyr	107	101	P/P	67 - 127
EPTC	77.0	80.9	P/P	24 - 88.0
Ethion	109	109	P/P	51 - 132
Ethoprop	109	109	P/P	58 - 117
Fenamiphos	45.2	64.9	P/P	38 - 139
Fipronil	113	105	P/P	61 - 124
Fipronil Desulfinyl	108	98.0	P/P	47 - 120
Fipronil Sulfide	109	103	P/P	56 - 119
Fipronil Sulfone	114	102	P/P	50 - 117
Fonofos	91.2	92.2	P/P	60 - 121
Hexazinone	78.4	139	P/F	55 - 137
Malathion	108	113	P/P	66 - 126
Metalaxyl	11.1	58.0	F/P	33 - 140
Metolachlor	108	102	P/P	69 - 119
Metribuzin	84.2	83.0	P/P	31 - 238
Mevinphos	91.0	101	P/P	42 - 113
Molinate	85.7	90.1	P/P	32 - 96.0
Norflurazon	108	101	P/P	54 - 123
Oxadiazon	106	102	P/P	63 - 128

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P365463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	104	96.7	P/P	72 - 111
Parathion Methyl	106	98.7	P/P	74 - 126
Pendimethalin	92.6	90.5	P/P	61 - 131
Phorate	81.5	78.4	P/P	51 - 115
Prodiamine	104	110	P/P	38 - 144
Prometon	76.4	85.4	P/P	54 - 119
Prometryn	98.8	89.6	P/P	63 - 120
Simazine	113	111	P/P	75 - 126
Tebuconazole	66.6	71.7	P/P	20 - 119
Terbufos	91.3	91.0	P/P	64 - 116
Terbutylazine	113	106	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P365330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	92.3		P	40 - 150
AMPA	110		P	40 - 150
Endothall	125		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	114		P	40 - 140
Sucralose	98.0		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P365439

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	61.4		P	40 - 150
Acetaminophen	118		P	30 - 150
Bentazon	86.0		P	30 - 150
Carbamazepine	92.6		P	40 - 150
Diuron	81.4		P	40 - 150
Fenuron	117		P	40 - 150
Fluridone	64.4		P	40 - 150
Hydrocodone	104		P	40 - 150
Ibuprofen	33.7		P	30 - 150
Imazapyr	109		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	51.7		P	40 - 150
MCPP	84.6		P	40 - 150
Naproxen	60.8		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	32.2		P	30 - 150
Triclopyr	36.2		P	30 - 150

Reference Method: SM 2120 B
Batch ID: P365305

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P366007

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

Reference Method: SM 4500 F-C-97
Batch ID: P365799

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

Reference Method: SM 5310 B-00
Batch ID: P365506

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093212	Barium	97.2	99.2	P/P	80 - 120
2093212	Calcium	103		P	80 - 120
2093212	Iron	105	106	P/P	80 - 120
2093212	Magnesium	105	106	P/P	80 - 120
2093212	Potassium	102	103	P/P	80 - 120
2093212	Sodium	103		P	80 - 120
2093212	Zinc	96.5	96.9	P/P	80 - 120
2094119	Barium	98.9		P	80 - 120
2094119	Calcium	105		P	80 - 120
2094119	Iron	104		P	80 - 120
2094119	Magnesium	104		P	80 - 120
2094119	Potassium	100		P	80 - 120
2094119	Sodium	104		P	80 - 120
2094119	Zinc	97.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093212	Aluminum	96.1	96.3	P/P	80 - 120
2093212	Antimony	101	101	P/P	80 - 120
2093212	Arsenic	102	102	P/P	80 - 120
2093212	Boron	96.0	93.8	P/P	80 - 120
2093212	Cadmium	101	102	P/P	80 - 120
2093212	Chromium	97.7	97.0	P/P	80 - 120
2093212	Copper	94.6	93.8	P/P	80 - 120
2093212	Lead	98.6	98.5	P/P	80 - 120
2093212	Nickel	97.3	97.0	P/P	80 - 120
2093212	Selenium	102	101	P/P	80 - 120
2093212	Silver	99.0	98.6	P/P	80 - 120
2093212	Thallium	101	104	P/P	80 - 120
2094119	Aluminum	96.3		P	80 - 120
2094119	Antimony	98.4		P	80 - 120
2094119	Arsenic	101		P	80 - 120
2094119	Boron	95.9		P	80 - 120
2094119	Cadmium	100		P	80 - 120
2094119	Chromium	101		P	80 - 120
2094119	Copper	98.8		P	80 - 120
2094119	Lead	101		P	80 - 120
2094119	Nickel	98.8		P	80 - 120
2094119	Selenium	99.2		P	80 - 120
2094119	Silver	98.5		P	80 - 120
2094119	Thallium	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365707

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093206	Chloride	99.4		P	90 - 110
2094167	Chloride	100		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365711

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093206	Sulfate	99.5		P	90 - 110
2094167	Sulfate	99.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P365732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2092798	Ammonia-N	107	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P365648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093202	Kjeldahl Nitrogen	98.0	96.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P365653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093066	NO2NO3-N	95.5	95.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P365593

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093066	Total-P	98.9	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P365301

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093067	O-Phosphate-P	94.7	95.5	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P365463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093213	Acetochlor	99.7	106	P/P	63 - 129
2093213	Alachlor	99.3	103	P/P	65 - 127
2093213	Ametryn	93.5	103	P/P	40 - 164
2093213	Atrazine	106	122	P/P	66 - 135
2093213	Atrazine Desethyl	77.7	79.9	P/P	14 - 157
2093213	Azinphos Methyl	90.6	102	P/P	49 - 180
2093213	Bromacil	86.3	95.5	P/P	48 - 130
2093213	Butylate	76.4	75.5	P/P	10 - 94.0
2093213	Chlorpyrifos Ethyl	96.3	101	P/P	58 - 123
2093213	Chlorpyrifos Methyl	93.5	96.9	P/P	58 - 125
2093213	Cyanazine	98.2	103	P/P	24 - 253
2093213	Demeton	69.5	78.2	P/P	25 - 149
2093213	Diazinon	98.7	101	P/P	59 - 144
2093213	Dimethenamid	103	106	P/P	46 - 139
2093213	Disulfoton	66.9	78.1	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P365463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093213	Dithiopyr	101	104	P/P	64 - 130
2093213	EPTC	78.9	74.7	P/P	10 - 92.0
2093213	Ethion	103	111	P/P	30 - 148
2093213	Ethoprop	104	105	P/P	50 - 130
2093213	Fenamiphos	51.6	95.3	P/P	49 - 142
2093213	Fipronil	103	110	P/P	46 - 140
2093213	Fipronil Desulfinyl	93.9	97.3	P/P	30 - 121
2093213	Fipronil Sulfide	99.2	124	P/P	31 - 136
2093213	Fipronil Sulfone	100	110	P/P	16 - 136
2093213	Fonofos	92.3	86.9	P/P	55 - 129
2093213	Hexazinone	121	152	P/F	56 - 141
2093213	Malathion	105	113	P/P	56 - 135
2093213	Metalaxyl	21.1	66.5	F/P	54 - 135
2093213	Metolachlor	99.7	106	P/P	51 - 140
2093213	Metribuzin	91.2	95.9	P/P	45 - 254
2093213	Mevinphos	89.5	99.5	P/P	33 - 131
2093213	Molinate	85.3	83.5	P/P	14 - 98.0
2093213	Norflurazon	92.6	104	P/P	34 - 136
2093213	Oxadiazon	99.8	108	P/P	67 - 116
2093213	Parathion Ethyl	93.5	96.8	P/P	66 - 118
2093213	Parathion Methyl	93.9	100	P/P	64 - 136
2093213	Pendimethalin	92.0	99.4	P/P	59 - 144
2093213	Phorate	76.7	82.4	P/P	42 - 130
2093213	Prodiamine	119	124	P/P	42 - 148
2093213	Prometon	81.2	97.0	P/P	59 - 134
2093213	Prometryn	89.5	101	P/P	54 - 135
2093213	Simazine	118	122	P/P	53 - 156
2093213	Tebuconazole	70.0	91.4	P/P	10 - 131
2093213	Terbufos	90.3	92.9	P/P	57 - 131
2093213	Terbutylazine	99.6	110	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P365330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093139	Acesulfame K	71.1	69.3	P/P	40 - 150
2093139	AMPA	31.9	32.5	F/F	40 - 150
2093139	Endothall	75.3	76.9	P/P	40 - 150
2093139	Glufosinate	40.7	41.4	P/P	40 - 150
2093139	Glyphosate	41.6	50.0	P/P	40 - 140
2093139	Sucralose	77.1	63.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P365439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093211	2,4-D	40.1	63.1	P/P	40 - 150
2093211	Acetaminophen	138	68.0	P/P	30 - 150
2093211	Bentazon	64.9	67.4	P/P	30 - 150
2093211	Carbamazepine	83.9	81.5	P/P	40 - 150
2093211	Diuron	74.0	71.2	P/P	40 - 150
2093211	Fenuron	132	104	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P365439

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093211	Fluridone	56.8	45.9	P/P	40 - 150
2093211	Hydrocodone	124	78.5	P/P	40 - 150
2093211	Ibuprofen	8.76	34.3	F/P	30 - 150
2093211	Imazapyr	114	88.4	P/P	40 - 150
2093211	Imidacloprid	130	90.6	P/P	40 - 150
2093211	Linuron	47.5	41.1	P/P	40 - 150
2093211	MCP	48.8	65.8	P/P	40 - 150
2093211	Naproxen	12.9	59.7	F/P	40 - 150
2093211	Primidone	115	77.8	P/P	40 - 150
2093211	Pyraclostrobin	0.0216	20.1	F/F	30 - 150
2093211	Triclopyr	14.7	36.4	F/P	30 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P365799

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2094167	Fluoride	97.1	96.6	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P365506

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2093112	Organic Carbon	100		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P365306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093103	Turbidity	2.40	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P365476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093212	Barium	2.03	Spike	P	0 - 20
2093212	Calcium	1.34	Spike	P	0 - 20
2093212	Iron	1.06	Spike	P	0 - 20
2093212	Magnesium	0.869	Spike	P	0 - 20
2093212	Potassium	0.993	Spike	P	0 - 20
2093212	Sodium	0.918	Spike	P	0 - 20
2093212	Zinc	0.381	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P365476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093212	Aluminum	0.252	Spike	P	0 - 20
2093212	Antimony	0.133	Spike	P	0 - 20
2093212	Arsenic	0.324	Spike	P	0 - 20
2093212	Boron	2.11	Spike	P	0 - 20
2093212	Cadmium	0.899	Spike	P	0 - 20
2093212	Chromium	0.721	Spike	P	0 - 20
2093212	Copper	0.847	Spike	P	0 - 20
2093212	Lead	0.0323	Spike	P	0 - 20
2093212	Nickel	0.253	Spike	P	0 - 20
2093212	Selenium	1.00	Spike	P	0 - 20
2093212	Silver	0.424	Spike	P	0 - 20
2093212	Thallium	2.36	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365707

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093206	Chloride	0.369	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P365711

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093206	Sulfate	0.147	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P365732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2092798	Ammonia-N	1.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P365648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093202	Kjeldahl Nitrogen	0.954	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P365653

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093066	NO2NO3-N	0.525	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P365593

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093066	Total-P	2.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P365301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093067	O-Phosphate-P	0.841	Spike	P	0 - 20

Reference Method: EPA 8270E
 Batch ID: P365463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093213	Acetochlor	6.43	Spike	P	0 - 30
2093213	Alachlor	3.50	Spike	P	0 - 30
2093213	Ametryn	9.63	Spike	P	0 - 30
2093213	Atrazine	13.7	Spike	P	0 - 30
2093213	Atrazine Desethyl	2.80	Spike	P	0 - 30
2093213	Azinphos Methyl	12.1	Spike	P	0 - 30
2093213	Bromacil	10.1	Spike	P	0 - 30
2093213	Butylate	1.15	Spike	P	0 - 30
2093213	Chlorpyrifos Ethyl	5.28	Spike	P	0 - 30
2093213	Chlorpyrifos Methyl	3.64	Spike	P	0 - 30
2093213	Cyanazine	4.75	Spike	P	0 - 30
2093213	Demeton	11.8	Spike	P	0 - 30
2093213	Diazinon	2.11	Spike	P	0 - 30
2093213	Dimethenamid	2.84	Spike	P	0 - 30
2093213	Disulfoton	15.4	Spike	P	0 - 30
2093213	Dithiopyr	3.39	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P365463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093213	EPTC	5.47	Spike	P	0 - 30
2093213	Ethion	7.73	Spike	P	0 - 30
2093213	Ethoprop	1.06	Spike	P	0 - 30
2093213	Fenamiphos	59.5	Spike	F	0 - 30
2093213	Fipronil	5.99	Spike	P	0 - 30
2093213	Fipronil Desulfinyl	3.50	Spike	P	0 - 30
2093213	Fipronil Sulfide	22.5	Spike	P	0 - 30
2093213	Fipronil Sulfone	8.89	Spike	P	0 - 30
2093213	Fonofos	5.95	Spike	P	0 - 30
2093213	Hexazinone	22.1	Spike	P	0 - 30
2093213	Malathion	6.89	Spike	P	0 - 30
2093213	Metalaxyl	104	Spike	F	0 - 30
2093213	Metolachlor	6.38	Spike	P	0 - 30
2093213	Metribuzin	5.05	Spike	P	0 - 30
2093213	Mevinphos	10.5	Spike	P	0 - 30
2093213	Molinate	2.17	Spike	P	0 - 30
2093213	Norflurazon	11.2	Spike	P	0 - 30
2093213	Oxadiazon	7.65	Spike	P	0 - 30
2093213	Parathion Ethyl	3.46	Spike	P	0 - 30
2093213	Parathion Methyl	6.77	Spike	P	0 - 30
2093213	Pendimethalin	7.82	Spike	P	0 - 30
2093213	Phorate	7.10	Spike	P	0 - 30
2093213	Prodiamine	4.06	Spike	P	0 - 30
2093213	Prometon	17.7	Spike	P	0 - 30
2093213	Prometryn	12.4	Spike	P	0 - 30
2093213	Simazine	2.79	Spike	P	0 - 30
2093213	Tebuconazole	26.5	Spike	P	0 - 30
2093213	Terbufos	2.78	Spike	P	0 - 30
2093213	Terbutylazine	9.61	Spike	P	0 - 30
LFB	Acetochlor	2.71	LCS	P	0 - 30
LFB	Alachlor	4.49	LCS	P	0 - 30
LFB	Ametryn	9.49	LCS	P	0 - 30
LFB	Atrazine	6.84	LCS	P	0 - 30
LFB	Atrazine Desethyl	11.8	LCS	P	0 - 30
LFB	Azinphos Methyl	3.10	LCS	P	0 - 30
LFB	Bromacil	9.18	LCS	P	0 - 30
LFB	Butylate	9.32	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	2.50	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	3.74	LCS	P	0 - 30
LFB	Cyanazine	6.06	LCS	P	0 - 30
LFB	Demeton	5.25	LCS	P	0 - 30
LFB	Diazinon	4.58	LCS	P	0 - 30
LFB	Dimethenamid	5.03	LCS	P	0 - 30
LFB	Disulfoton	5.53	LCS	P	0 - 30
LFB	Dithiopyr	5.05	LCS	P	0 - 30
LFB	EPTC	5.00	LCS	P	0 - 30
LFB	Ethion	0.451	LCS	P	0 - 30
LFB	Ethoprop	0.171	LCS	P	0 - 30
LFB	Fenamiphos	35.8	LCS	F	0 - 30
LFB	Fipronil	7.16	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	9.45	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P365463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	6.10	LCS	P	0 - 30
LFB	Fipronil Sulfone	10.3	LCS	P	0 - 30
LFB	Fonofos	1.14	LCS	P	0 - 30
LFB	Hexazinone	55.7	LCS	F	0 - 30
LFB	Malathion	4.69	LCS	P	0 - 30
LFB	Metalaxyl	136	LCS	F	0 - 30
LFB	Metolachlor	6.36	LCS	P	0 - 30
LFB	Metribuzin	1.49	LCS	P	0 - 30
LFB	Mevinphos	9.99	LCS	P	0 - 30
LFB	Molinate	4.95	LCS	P	0 - 30
LFB	Norflurazon	7.49	LCS	P	0 - 30
LFB	Oxadiazon	3.42	LCS	P	0 - 30
LFB	Parathion Ethyl	7.15	LCS	P	0 - 30
LFB	Parathion Methyl	6.79	LCS	P	0 - 30
LFB	Pendimethalin	2.21	LCS	P	0 - 30
LFB	Phorate	3.81	LCS	P	0 - 30
LFB	Prodiamine	5.21	LCS	P	0 - 30
LFB	Prometon	11.1	LCS	P	0 - 30
LFB	Prometryn	9.85	LCS	P	0 - 30
LFB	Simazine	1.66	LCS	P	0 - 30
LFB	Tebuconazole	7.34	LCS	P	0 - 30
LFB	Terbufos	0.331	LCS	P	0 - 30
LFB	Terbuthylazine	6.29	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P365330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093139	Acesulfame K	2.56	Spike	P	0 - 30
2093139	AMPA	1.72	Spike	P	0 - 30
2093139	Endothall	2.06	Spike	P	0 - 30
2093139	Glufosinate	1.74	Spike	P	0 - 30
2093139	Glyphosate	13.4	Spike	P	0 - 30
2093139	Sucralose	18.8	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P365439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093211	2,4-D	44.5	Spike	F	0 - 30
2093211	Acetaminophen	67.8	Spike	F	0 - 30
2093211	Bentazon	3.66	Spike	P	0 - 30
2093211	Carbamazepine	2.95	Spike	P	0 - 30
2093211	Diuron	3.94	Spike	P	0 - 30
2093211	Fenuron	23.3	Spike	P	0 - 30
2093211	Fluridone	21.3	Spike	P	0 - 30
2093211	Hydrocodone	44.7	Spike	F	0 - 30
2093211	Ibuprofen	119	Spike	F	0 - 30
2093211	Imazapyr	25.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P365439

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093211	Imidacloprid	35.8	Spike	F	0 - 30
2093211	Linuron	14.3	Spike	P	0 - 30
2093211	MCP	29.7	Spike	P	0 - 30
2093211	Naproxen	129	Spike	F	0 - 30
2093211	Primidone	38.6	Spike	F	0 - 30
2093211	Triclopyr	84.6	Spike	F	0 - 30

Reference Method: SM 2320 B-97
Batch ID: P366007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094495	Total Alkalinity	0.644	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P365539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093109	TDS	0.396	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P365799

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2094167	Fluoride	0.479	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P365506

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2093112	Organic Carbon	0.416	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: 2093211
Field Sample ID: G4SW0100

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	55.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	87.3	P	30 - 160
EPA 8321B	Diuron-d6	60.3	P	30 - 160
EPA 8321B	Endothall-d6	86.3	P	30 - 160
EPA 8321B	Endothall-d6	86.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	19.7	F	30 - 160
EPA 8321B	Primidone-d5	93.9	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Lab Sample ID: 2093213
Field Sample ID: G4SW0100

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Simazine-d10	93.5	P	68 - 130
EPA 8270E	Terbufos-d10	93.1	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A91955

Included Lab Sample IDs: 2093208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.8	97.5	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A91956

Included Lab Sample IDs: 2093206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.7	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A91957

Included Lab Sample IDs: 2093206

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A92026

Included Lab Sample IDs: 2093206

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

Reference Method: EPA 8321B

Run ID: A92029

Included Lab Sample IDs: 2093211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.1	90.5	P/P	60 - 160
Endothall	127	129	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A92031

Included Lab Sample IDs: 2093211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	68.3	93.0	P/P	60 - 160
Glufosinate	93.4	104	P/P	60 - 160
Glyphosate	88.8	109	P/P	60 - 160

Reference Method: SM 5310 B-00

Run ID: A92051

Included Lab Sample IDs: 2093207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.8	96.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A92070
Included Lab Sample IDs: 2093211

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A92109
Included Lab Sample IDs: 2093207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A92126
Included Lab Sample IDs: 2093212

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	100	P/P	90 - 110
Calcium	104	104	P/P	90 - 110
Iron	105	104	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Potassium	103	103	P/P	90 - 110
Sodium	102	103	P/P	90 - 110
Zinc	104	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A92132
Included Lab Sample IDs: 2093207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	107	108	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A92135
Included Lab Sample IDs: 2093212

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.6	98.5	P/P	90 - 110
Antimony	96.4	101	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Cadmium	95.5	99.1	P/P	90 - 110
Chromium	99.5	101	P/P	90 - 110
Copper	100	98.8	P/P	90 - 110
Lead	98.2	100	P/P	90 - 110
Nickel	100	98.9	P/P	90 - 110
Selenium	98.8	101	P/P	90 - 110
Silver	96.2	98.2	P/P	90 - 110
Thallium	95.6	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A92147
Included Lab Sample IDs: 2093207

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A92147

Included Lab Sample IDs: 2093207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A92162

Included Lab Sample IDs: 2093207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A92164

Included Lab Sample IDs: 2093206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.1	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A92169

Included Lab Sample IDs: 2093212

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	98.7	96.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A92226

Included Lab Sample IDs: 2093211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	107	126	P/P	50 - 150
Acetaminophen	120	138	P/P	60 - 160
Bentazon	101	115	P/P	50 - 160
Carbamazepine	97.0	112	P/P	60 - 150
Diuron	103	111	P/P	60 - 150
Fenuron	109	110	P/P	60 - 150
Fluridone	79.3	83.2	P/P	60 - 160
Hydrocodone	103	116	P/P	60 - 150
Ibuprofen	72.0	74.4	P/P	50 - 160
Imazapyr	101	93.7	P/P	50 - 150
Imidacloprid	108	103	P/P	60 - 150
Linuron	101	114	P/P	60 - 150
MCP	103	115	P/P	50 - 150
Naproxen	106	147	P/P	50 - 160
Primidone	114	97.2	P/P	60 - 150
Pyraclostrobin	85.5	86.1	P/P	60 - 150
Triclopyr	113	129	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A92228

Included Lab Sample IDs: 2093206

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

Reference Method: SM 2320 B-97
 Run ID: A92228
 Included Lab Sample IDs: 2093206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: EPA 8270E
 Run ID: A92355
 Included Lab Sample IDs: 2093213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	99.1		P	80 - 120
Alachlor	101		P	80 - 120
Ametryn	97.1		P	80 - 120
Atrazine	106		P	80 - 120
Atrazine Desethyl	102		P	80 - 120
Azinphos Methyl	93.3		P	80 - 120
Bromacil	103		P	80 - 120
Butylate	101		P	80 - 120
Chlorpyrifos Ethyl	97.9		P	80 - 120
Chlorpyrifos Methyl	97.8		P	80 - 120
Cyanazine	99.8		P	80 - 120
Demeton	98.3		P	80 - 120
Diazinon	98.8		P	80 - 120
Dimethenamid	100		P	80 - 120
Disulfoton	99.0		P	80 - 120
Dithiopyr	101		P	80 - 120
EPTC	98.4		P	80 - 120
Ethion	97.9		P	80 - 120
Ethoprop	100		P	80 - 120
Fenamiphos	98.3		P	80 - 120
Fipronil	98.3		P	80 - 120
Fipronil Desulfinyl	101		P	80 - 120
Fipronil Sulfide	94.7		P	80 - 120
Fipronil Sulfone	101		P	80 - 120
Fonofos	99.1		P	80 - 120
Hexazinone	100		P	80 - 120
Malathion	100		P	80 - 120
Metaxyl	103		P	80 - 120
Metolachlor	103		P	80 - 120
Metribuzin	92.2		P	80 - 120
Mevinphos	96.1		P	80 - 120
Molinate	98.3		P	80 - 120
Norflurazon	96.9		P	80 - 120
Oxadiazon	105		P	80 - 120
Parathion Ethyl	93.6		P	80 - 120
Parathion Methyl	96.8		P	80 - 120
Pendimethalin	90.4		P	80 - 120
Phorate	99.6		P	80 - 120
Prodiamine	88.5		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	99.0		P	80 - 120
Simazine	106		P	80 - 120
Tebuconazole	101		P	80 - 120
Terbufos	96.8		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A92355

Included Lab Sample IDs: 2093213

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
EPA 180.1 Rev. 2.0	Turbidity							2.40	
EPA 200.7 Rev. 4.4	Barium	99.9		97.2	99.2	98.9			2.03
	Calcium	105		103	105				1.34
	Iron	106		105	106	104			1.06
	Magnesium	108		105	106	104			0.869
	Potassium	102		102	103	100			0.993
	Sodium	103		103	104				0.918
	Zinc	98.1		96.5	96.9	97.9			0.381
EPA 200.8 Rev. 5.4	Aluminum	95.5		96.1	96.3	96.3			0.252
	Antimony	96.8		101	101	98.4			0.133
	Arsenic	101		102	102	101			0.324
	Boron	97.3		96.0	93.8	95.9			2.11
	Cadmium	97.4		101	102	100			0.899
	Chromium	97.3		97.7	97.0	101			0.721
	Copper	98.5		94.6	93.8	98.8			0.847
	Lead	96.6		98.6	98.5	101			0.0323
	Nickel	98.8		97.3	97.0	98.8			0.253
	Selenium	99.3		102	101	99.2			1.00
	Silver	96.7		99.0	98.6	98.5			0.424
	Thallium	97.6		101	104	104			2.36
EPA 300.0 Rev. 2.1	Chloride	101		99.4	100			0.369	
	Sulfate	101		99.5	99.0			0.147	
EPA 350.1 Rev. 2.0	Ammonia-N	106		107	105				1.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		98.0	96.6				0.954
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	97.0		95.5	95.0				0.525
EPA 365.1 Rev. 2.0	Total-P	102		98.9	102				2.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2		94.7	95.5				0.841
EPA 8270E	Acetochlor	107	104	99.7	106		2.71		6.43
	Alachlor	106	101	99.3	103		4.49		3.50
	Ametryn	93.1	84.6	93.5	103		9.49		9.63
	Atrazine	117	109	106	122		6.84		13.7
	Atrazine Desethyl	88.5	78.6	79.9	77.7		11.8		2.80
	Azinphos Methyl	105	102	102	90.6		3.10		12.1
	Bromacil	97.2	88.7	95.5	86.3		9.18		10.1
	Butylate	76.0	83.5	75.5	76.4		9.32		1.15
	Chlorpyrifos Ethyl	102	99.9	101	96.3		2.50		5.28
	Chlorpyrifos Methyl	94.0	97.5	93.5	96.9		3.74		3.64
	Cyanazine	104	98.2	98.2	103		6.06		4.75
	Demeton	72.4	68.7	69.5	78.2		5.25		11.8
	Diazinon	105	101	98.7	101		4.58		2.11
	Dimethenamid	110	105	103	106		5.03		2.84
	Disulfoton	72.4	68.5	66.9	78.1		5.53		15.4
	Dithiopyr	107	101	101	104		5.05		3.39
	EPTC	77.0	80.9	78.9	74.7		5.00		5.47
	Ethion	109	109	103	111		0.451		7.73
	Ethoprop	109	109	104	105		0.171		1.06
	Fenamiphos	45.2	64.9	51.6	95.3		35.8		59.5
	Fipronil	113	105	103	110		7.16		5.99
	Fipronil Desulfanyl	108	98.0	93.9	97.3		9.45		3.50
	Fipronil Sulfide	109	103	99.2	124		6.10		22.5
	Fipronil Sulfone	114	102	100	110		10.3		8.89
	Fonofos	91.2	92.2	92.3	86.9		1.14		5.95
	Hexazinone	78.4	139	121	152		55.7		22.1
	Malathion	108	113	105	113		4.69		6.89

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270E	Metalaxyl	11.1	58.0	21.1	66.5	136	104
	Metolachlor	108	102	99.7	106	6.36	6.38
	Metribuzin	84.2	83.0	91.2	95.9	1.49	5.05
	Mevinphos	91.0	101	89.5	99.5	9.99	10.5
	Molinate	85.7	90.1	85.3	83.5	4.95	2.17
	Norflurazon	108	101	92.6	104	7.49	11.2
	Oxadiazon	106	102	99.8	108	3.42	7.65
	Parathion Ethyl	104	96.7	93.5	96.8	7.15	3.46
	Parathion Methyl	106	98.7	93.9	100	6.79	6.77
	Pendimethalin	92.6	90.5	92.0	99.4	2.21	7.82
	Phorate	81.5	78.4	76.7	82.4	3.81	7.10
	Prodiamine	104	110	119	124	5.21	4.06
	Prometon	76.4	85.4	81.2	97.0	11.1	17.7
	Prometryn	98.8	89.6	89.5	101	9.85	12.4
	Simazine	113	111	118	122	1.66	2.79
	Tebuconazole	66.6	71.7	70.0	91.4	7.34	26.5
	Terbufos	91.3	91.0	92.9	90.3	0.331	2.78
	Terbuthylazine	113	106	110	99.6	6.29	9.61
EPA 8321B	2,4-D	61.4		63.1	40.1		44.5
	Acesulfame K	92.3		71.1	69.3		2.56
	Acetaminophen	118		68.0	138		67.8
	AMPA	110		31.9	32.5		1.72
	Bentazon	86.0		67.4	64.9		3.66
	Carbamazepine	92.6		81.5	83.9		2.95
	Diuron	81.4		71.2	74.0		3.94
	Endothall	125		75.3	76.9		2.06
	Fenuron	117		104	132		23.3
	Fluridone	64.4		45.9	56.8		21.3
	Glufosinate	117		40.7	41.4		1.74
	Glyphosate	114		41.6	50.0		13.4
	Hydrocodone	104		78.5	124		44.7
	Ibuprofen	33.7		34.3	8.76		119
	Imazapyr	109		88.4	114		25.0
	Imidacloprid	101		90.6	130		35.8
	Linuron	51.7		41.1	47.5		14.3
	MCPP	84.6		65.8	48.8		29.7
	Naproxen	60.8		59.7	12.9		129
	Primidone	103		77.8	115		38.6
	Pyraclostrobin	32.2		20.1	0.0216		
	Sucralose	98.0		77.1	63.9		18.8
	Triclopyr	36.2		36.4	14.7		84.6
SM 2120 B	Color (true)	101					
SM 2320 B-97	Total Alkalinity	102				0.644	
SM 2540 C-97	TDS					0.396	
SM 4500 F-C-97	Fluoride	96.1		97.1	96.6		0.479
SM 5310 B-00	Organic Carbon	95.8		100			0.416

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2093206

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	2093212
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2093212
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2093206
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2093206
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2093207
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2093207
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2093207
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2093207
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2093208
EPA 8270E / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2093213
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2093211
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2093211
SM 2120 B / E31780	True Color measured at 450 nm	2093206
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2093206
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2093206
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2093206
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2093206
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2093207

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	06/07/2019			06/07/2019 16:01	Julia Storbeck	2093206
EPA 200.7 Rev. 4.4	06/07/2019	06/12/2019 15:00	Alexander Thompson	06/14/2019 14:06	Betina Topolski	2093212
EPA 200.8 Rev. 5.4	06/07/2019	06/12/2019 15:00	Alexander Thompson	06/13/2019 23:04	Robert K Palmer	2093212
	06/07/2019	06/12/2019 15:00	Alexander Thompson	06/18/2019 00:58	Martin Acosta	2093212
EPA 300.0 Rev. 2.1	06/07/2019			06/14/2019 13:40	Lipi Saha	2093206
EPA 350.1 Rev. 2.0	06/07/2019			06/13/2019 14:51	Ping Hua	2093207
EPA 351.2 Rev. 2.0	06/07/2019	06/14/2019 11:30	Adrian Shelby	06/18/2019 09:55	Joseph Suarez	2093207
EPA 353.2 Rev. 2.0	06/07/2019			06/14/2019 10:34	Beverly Y. Sanders	2093207
EPA 365.1 Rev. 2.0	06/07/2019	06/13/2019 13:10	Sima Feizi	06/17/2019 14:26	Julia Storbeck	2093207
EPA 365.1 Rev. 2.0 dissolved	06/07/2019			06/07/2019 16:01	Jhamieka S. Greenwood	2093208
EPA 8270E	06/07/2019	06/13/2019 08:30	Rasheda Ghaffari	06/14/2019 21:11	Vandana T. Nagar	2093213
EPA 8321B	06/07/2019	06/10/2019 14:00	Rebecca Ware	06/10/2019 17:58	Rebecca Ware	2093211
	06/07/2019	06/10/2019 14:00	Rebecca Ware	06/11/2019 12:10	Rebecca Ware	2093211
	06/07/2019	06/10/2019 14:00	Rebecca Ware	06/12/2019 09:45	Rebecca Ware	2093211
	06/07/2019	06/12/2019 14:00	Joshua Hartstein	06/13/2019 02:55	Juyoung Kim	2093211
SM 2120 B	06/07/2019			06/07/2019 16:13	Madeline Funaro	2093206
SM 2320 B-97	06/07/2019			06/19/2019 02:02	Dale L. Simmons	2093206
SM 2540 C-97	06/07/2019			06/10/2019 11:57	Mariam Hanna	2093206
SM 2540 D-97	06/07/2019			06/10/2019 13:30	Mariam Hanna	2093206
SM 4500 F-C-97	06/07/2019			06/17/2019 20:49	Dale L. Simmons	2093206
SM 5310 B-00	06/07/2019			06/12/2019 05:26	Madeline Funaro	2093207