

Chemical Analysis Report

NE-DIST-2019-03-12-02

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

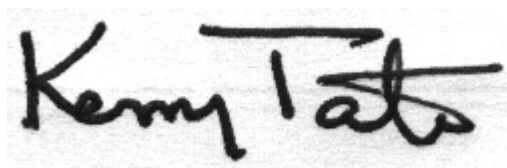
Event Description: **SCI 2525 Mccullough, 2247A SMR**
Request ID: **RQ-2019-03-04-17**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 04-APR-2019 12:52

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: LONG BR @ LIBERTY ST JAX

Collection Date/Time: 03/11/2019 09:50

Field ID: G2NE0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068861	EPA 180.1 Rev. 2.0	Turbidity	19		NTU	P360285	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P360813	
		Sulfate	45		mg SO4/L	P360720	
	SM 2120 B	Color (true)	17	A	PCU	P360327	
	SM 2320 B-97	Total Alkalinity	101		mg CaCO3/L	P360894	
	SM 2540 C-97	TDS	200		mg/L	P360683	
	SM 2540 D-97	TSS	3	I	mg/L	P360657	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P360901	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.12		mg N/L	P360586	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.47		mg N/L	P360466	
2068862	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P360495	
	EPA 365.1 Rev. 2.0	Total-P	0.057		mg P/L	P360529	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P360635	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P360298	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P360131	
2068881		Acesulfame K**	0.35	I	ug/L	P360251	MS
		AMPA**	0.10	U	ug/L	P360251	
		Sucralose**	0.23		ug/L	P360251	
		Acetaminophen**	0.020	I	ug/L	P360131	
		Endothall**	0.25	U	ug/L	P360251	
		Glufosinate**	0.10	U	ug/L	P360251	
		Bentazon	0.016		ug/L	P360131	
		Glyphosate**	0.10	U	ug/L	P360251	
		Carbamazepine**	0.0012	I	ug/L	P360131	
		Diuron	0.0020	U	ug/L	P360131	
		Fenuron	0.016	U	ug/L	P360131	
		Fluridone**	8.0E-04	U	ug/L	P360131	
		Imazapyr**	0.052		ug/L	P360131	
		Hydrocodone**	0.0020	U	ug/L	P360131	
		Ibuprofen**	0.020	U	ug/L	P360131	
		Imidacloprid	0.0092		ug/L	P360131	MS
		Linuron	0.0040	U	ug/L	P360131	
		MCPP	0.0027	I	ug/L	P360131	MS
		Naproxen**	0.0080	U	ug/L	P360131	
		Primidone**	0.0051	I	ug/L	P360131	
		Pyraclostrobin**	0.0020	U	ug/L	P360131	
		Triclopyr**	0.0040	U	ug/L	P360131	
2068882	EPA 200.7 Rev. 4.4	Barium	56.7		ug/L	P360395	
		Calcium	43.5		mg/L	P360395	
		Iron	2.39E+03		ug/L	P360395	
		Magnesium	7.93		mg/L	P360395	
		Potassium	2.5		mg/L	P360395	
		Sodium	13.3		mg/L	P360395	

Field ID: G2NE0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068882	EPA 200.7 Rev. 4.4	Zinc	6.5	I	ug/L	P360395	
	EPA 200.8 Rev. 5.4	Aluminum	58		ug/L	P360395	
		Antimony	0.13	I	ug/L	P360395	
		Arsenic	1.19		ug/L	P360395	
		Boron**	48.4		ug/L	P360395	
		Cadmium	0.020	U	ug/L	P360395	
		Chromium	0.49	I	ug/L	P360395	
		Copper	0.67	I	ug/L	P360395	
		Lead	0.31	I	ug/L	P360395	
		Nickel	0.53	I	ug/L	P360395	
		Selenium	0.27	I	ug/L	P360395	
		Silver	0.010	U	ug/L	P360395	
		Thallium	0.10	U	ug/L	P360395	
2068883	EPA 8270D	Acetochlor	0.27	U	ng/L	P360553	
		Alachlor	0.27	U	ng/L	P360553	
		Ametryn	0.64	U	ng/L	P360553	
		Atrazine	0.44	I	ng/L	P360553	
		Atrazine Desethyl	1.6	U	ng/L	P360553	
		Azinphos Methyl	5.4	UJ	ng/L	P360553	SUR
		Bromacil	180		ng/L	P360553	
		Butylate	0.43	U	ng/L	P360553	RPD
		Chlorpyrifos Ethyl	0.27	UJ	ng/L	P360553	SUR
		Chlorpyrifos Methyl	0.11	UJ	ng/L	P360553	SUR
		Cyanazine	3.5	U	ng/L	P360553	
		Demeton	7.5	UJ	ng/L	P360553	SUR
		Diazinon	0.13	UJ	ng/L	P360553	SUR
		Dimethenamid**	0.11	U	ng/L	P360553	
		Disulfoton	0.54	UJ	ng/L	P360553	SUR
		Dithiopyr**	0.11	U	ng/L	P360553	
		EPTC	1.3	U	ng/L	P360553	RPD
		Ethion	0.16	UJ	ng/L	P360553	SUR
		Ethoprop	0.11	UJ	ng/L	P360553	SUR
		Fenamiphos	0.54	UJ	ng/L	P360553	SUR
		Fipronil	1.1		ng/L	P360553	
		Fipronil Desulfinyl**	0.13	U	ng/L	P360553	
		Fipronil Sulfide	2.6		ng/L	P360553	
		Fipronil Sulfone	2.9		ng/L	P360553	
		Fonofos	0.21	UJ	ng/L	P360553	SUR
		Hexazinone	20		ng/L	P360553	
		Malathion	0.38	UJ	ng/L	P360553	SUR
		Metalaxyl	0.32	U	ng/L	P360553	
		Metolachlor	0.54	U	ng/L	P360553	
		Metribuzin	0.80	U	ng/L	P360553	
		Mevinphos	0.54	UJ	ng/L	P360553	SUR
		Molinate	0.32	U	ng/L	P360553	

Field ID: G2NE0165

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2068883	EPA 8270D	Norflurazon	0.54	U	ng/L	P360553	
		Oxadiazon**	0.31	I	ng/L	P360553	
		Parathion Ethyl	0.27	UJ	ng/L	P360553	SUR
		Parathion Methyl	0.59	UJ	ng/L	P360553	SUR
		Pendimethalin	1.1	U	ng/L	P360553	
		Phorate	0.27	UJ	ng/L	P360553	SUR
		Prodiamine**	0.19	UJ	ng/L	P360553	LCS
		Prometon	1.8	I	ng/L	P360553	
		Prometryn	0.21	U	ng/L	P360553	
		Simazine	0.54	U	ng/L	P360553	
		Tebuconazole**	0.54	UJ	ng/L	P360553	RPD
		Terbufos	0.11	UJ	ng/L	P360553	SUR
		Terbuthylazine	0.46	U	ng/L	P360553	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: 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 8270D: MS accuracies for atrazine, metalaxyl, oxidiazon, fipronil sulfide, fipronil sulfone, and fipronil not assessed due to high content of these parameters in the sample spiked. Refer to the narrative for an explanation of QC Codes. Some reported results are J qualified due to surrogate recovery exceeding control limits; the sample was re-extracted and re-analyzed beyond expiration with acceptable surrogate recovery and the same analytical results were obtained.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360285

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

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: P360395

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: P360720

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

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: P360466

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360298

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

Reference Method: EPA 8270D
Batch ID: P360553

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: P360553

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: P360131

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: P360251

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: P360327

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360894

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

Reference Method: SM 2540 C-97
Batch ID: P360683

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360657

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360901

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360635

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: P360395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	98.8		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Potassium	99.8		P	85 - 115
Sodium	103		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	107		P	85 - 115
Boron	102		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	105		P	85 - 115
Copper	103		P	85 - 115
Lead	103		P	85 - 115
Nickel	103		P	85 - 115
Selenium	105		P	85 - 115
Silver	100		P	85 - 115
Thallium	98.3		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360720

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

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: P360466

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	75.7	93.2	P/P	71 - 121
Alachlor	74.5	92.1	P/P	72 - 119
Ametryn	73.9	90.3	P/P	47 - 144
Atrazine	83.0	108	P/P	75 - 123
Atrazine Desethyl	84.0	101	P/P	45 - 133
Azinphos Methyl	104	125	P/P	66 - 165
Bromacil	72.8	95.9	P/P	43 - 123
Butylate	62.2	72.2	P/P	27 - 83.0
Chlorpyrifos Ethyl	86.3	98.7	P/P	70 - 117
Chlorpyrifos Methyl	85.5	100	P/P	71 - 120
Cyanazine	210	237	P/P	34 - 264
Demeton	69.6	73.1	P/P	41 - 122
Diazinon	79.1	99.9	P/P	70 - 127
Dimethenamid	72.6	88.1	P/P	60 - 130
Disulfoton	85.5	102	P/P	56 - 127
Dithiopyr	75.9	96.4	P/P	60 - 130
EPTC	63.7	73.5	P/P	24 - 84.0
Ethion	65.1	79.3	P/P	53 - 132
Ethoprop	87.0	95.9	P/P	57 - 117
Fenamiphos	81.5	97.6	P/P	55 - 136
Fipronil	70.5	91.3	P/P	64 - 126
Fipronil Desulfinyl	68.4	87.9	P/P	60 - 130
Fipronil Sulfide	73.9	86.1	P/P	57 - 120
Fipronil Sulfone	68.0	84.1	P/P	52 - 115
Fonofos	86.4	104	P/P	61 - 121
Hexazinone	83.5	104	P/P	62 - 131
Malathion	79.8	96.4	P/P	67 - 126
Metalaxyl	76.9	95.0	P/P	54 - 128
Metolachlor	75.2	92.0	P/P	71 - 118
Metribuzin	192	205	P/P	42 - 221
Mevinphos	75.0	96.7	P/P	45 - 114
Molinate	70.1	80.2	P/P	33 - 91.0
Norflurazon	78.1	97.0	P/P	60 - 123
Oxadiazon	77.0	95.8	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P360553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	81.1	94.8	P/P	73 - 111
Parathion Methyl	85.5	101	P/P	74 - 126
Pendimethalin	88.9	97.7	P/P	63 - 131
Phorate	80.3	93.8	P/P	54 - 115
Prodiamine	41.8	44.3	F/F	60 - 130
Prometon	66.2	81.2	P/P	61 - 120
Prometryn	68.4	84.7	P/P	62 - 126
Simazine	85.8	110	P/P	75 - 126
Tebuconazole	32.5	44.6	P/P	30 - 100
Terbufos	82.3	97.8	P/P	65 - 116
Terbuthylazine	81.9	98.8	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P360131

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	97.9		P	40 - 150
Acetaminophen	80.2		P	30 - 150
Bentazon	91.3		P	30 - 150
Carbamazepine	96.3		P	40 - 150
Diuron	72.2		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	115		P	40 - 150
Hydrocodone	119		P	40 - 150
Ibuprofen	82.7		P	40 - 150
Imazapyr	111		P	40 - 150
Imidacloprid	107		P	40 - 150
Linuron	77.4		P	40 - 150
MCPP	126		P	40 - 150
Naproxen	66.3		P	40 - 150
Primidone	111		P	40 - 150
Pyraclostrobin	67.2		P	40 - 150
Triclopyr	65.1		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.7		P	40 - 150
AMPA	92.5		P	40 - 150
Endothall	74.4		P	40 - 150
Glufosinate	123		P	40 - 150
Glyphosate	115		P	40 - 140
Sucralose	74.0		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360327

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: P360894

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P360901

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360635

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068882	Barium	104		P	80 - 120
2068882	Calcium	101		P	80 - 120
2068882	Iron	107		P	80 - 120
2068882	Magnesium	102		P	80 - 120
2068882	Potassium	99.5		P	80 - 120
2068882	Sodium	98.5		P	80 - 120
2068882	Zinc	104		P	80 - 120
2069070	Barium	103	101	P/P	80 - 120
2069070	Calcium	102		P	80 - 120
2069070	Iron	104	104	P/P	80 - 120
2069070	Magnesium	107	106	P/P	80 - 120
2069070	Potassium	98.3	96.9	P/P	80 - 120
2069070	Sodium	102	98.7	P/P	80 - 120
2069070	Zinc	105	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068882	Aluminum	101		P	80 - 120
2068882	Antimony	105		P	80 - 120
2068882	Arsenic	109		P	80 - 120
2068882	Boron	102		P	80 - 120
2068882	Cadmium	107		P	80 - 120
2068882	Chromium	102		P	80 - 120
2068882	Copper	100		P	80 - 120
2068882	Lead	103		P	80 - 120
2068882	Nickel	101		P	80 - 120
2068882	Selenium	105		P	80 - 120
2068882	Silver	100		P	80 - 120
2068882	Thallium	101		P	80 - 120
2069070	Aluminum	101	101	P/P	80 - 120
2069070	Antimony	103	103	P/P	80 - 120
2069070	Arsenic	108	107	P/P	80 - 120
2069070	Boron	106	101	P/P	80 - 120
2069070	Cadmium	105	105	P/P	80 - 120
2069070	Chromium	103	103	P/P	80 - 120
2069070	Copper	101	100	P/P	80 - 120
2069070	Lead	101	101	P/P	80 - 120
2069070	Nickel	101	101	P/P	80 - 120
2069070	Selenium	104	103	P/P	80 - 120
2069070	Silver	100	100	P/P	80 - 120
2069070	Thallium	97.6	99.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068543	Sulfate	102		P	90 - 110
2068727	Sulfate	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069257	Chloride	95.4		P	90 - 110
2069258	Chloride	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068846	Ammonia-N	98.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068842	Kjeldahl Nitrogen	93.2	91.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068698	NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068847	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068863	O-Phosphate-P	94.2	96.1	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P360553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068903	Acetochlor	75.7	89.8	P/P	63 - 129
2068903	Alachlor	75.1	88.3	P/P	65 - 127
2068903	Ametryn	90.6	110	P/P	40 - 164
2068903	Atrazine Desethyl	65.0	72.4	P/P	14 - 157
2068903	Azinphos Methyl	83.8	95.7	P/P	49 - 180
2068903	Bromacil	73.4	79.6	P/P	48 - 130
2068903	Butylate	39.4	27.8	P/P	10 - 94.0
2068903	Chlorpyrifos Ethyl	79.7	95.5	P/P	58 - 123
2068903	Chlorpyrifos Methyl	74.5	87.3	P/P	58 - 125
2068903	Cyanazine	111	129	P/P	24 - 253
2068903	Demeton	60.3	56.4	P/P	25 - 149
2068903	Diazinon	75.9	90.0	P/P	59 - 144
2068903	Dimethenamid	74.9	87.9	P/P	60 - 130
2068903	Disulfoton	71.4	84.1	P/P	54 - 132
2068903	Dithiopyr	75.0	88.6	P/P	60 - 130

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P360553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068903	EPTC	46.2	30.7	P/P	10 - 92.0
2068903	Ethion	80.6	101	P/P	30 - 148
2068903	Ethoprop	76.3	90.1	P/P	50 - 130
2068903	Fenamiphos	98.0	112	P/P	49 - 142
2068903	Fipronil Desulfinyl	79.3	81.3	P/P	60 - 130
2068903	Fonofos	74.9	90.5	P/P	55 - 129
2068903	Hexazinone	91.9	107	P/P	56 - 141
2068903	Malathion	79.7	93.0	P/P	56 - 135
2068903	Metolachlor	76.1	87.8	P/P	51 - 140
2068903	Metribuzin	175	207	P/P	45 - 254
2068903	Mevinphos	72.1	79.7	P/P	33 - 131
2068903	Molinate	56.0	55.9	P/P	14 - 98.0
2068903	Norflurazon	74.7	79.9	P/P	34 - 136
2068903	Parathion Ethyl	77.4	89.2	P/P	66 - 118
2068903	Parathion Methyl	78.8	93.3	P/P	64 - 136
2068903	Pendimethalin	93.5	112	P/P	59 - 144
2068903	Phorate	71.9	78.6	P/P	42 - 130
2068903	Prodiamine	94.8	98.9	P/P	60 - 130
2068903	Prometon	78.1	91.9	P/P	59 - 134
2068903	Prometryn	68.6	79.1	P/P	54 - 135
2068903	Simazine	86.0	95.9	P/P	53 - 156
2068903	Tebuconazole	52.6	59.1	P/P	30 - 100
2068903	Terbufos	73.3	87.4	P/P	57 - 131
2068903	Terbutylazine	78.1	91.7	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P360131

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069006	2,4-D	119	92.7	P/P	40 - 150
2069006	Acetaminophen	118	116	P/P	30 - 150
2069006	Bentazon	77.2	61.1	P/P	30 - 150
2069006	Carbamazepine	87.2	74.3	P/P	40 - 150
2069006	Diuron	62.3	58.5	P/P	40 - 150
2069006	Fenuron	123	118	P/P	40 - 150
2069006	Fluridone	124	111	P/P	40 - 150
2069006	Hydrocodone	117	118	P/P	40 - 150
2069006	Ibuprofen	78.8	69.2	P/P	40 - 150
2069006	Imazapyr	138	114	P/P	40 - 150
2069006	Imidacloprid	197	183	F/F	40 - 150
2069006	Linuron	72.6	73.4	P/P	40 - 150
2069006	MCP	162	142	F/P	40 - 150
2069006	Naproxen	85.7	74.9	P/P	40 - 150
2069006	Primidone	125	104	P/P	40 - 150
2069006	Pyraclostrobin	77.3	65.8	P/P	40 - 150
2069006	Triclopyr	88.4	72.6	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068775	Acesulfame K	158	178	F/F	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068775	AMPA	71.7	74.4	P/P	40 - 150
2068775	Endothall	76.9	76.7	P/P	40 - 150
2068775	Glufosinate	83.4	100	P/P	40 - 150
2068775	Glyphosate	104	106	P/P	40 - 140
2068775	Sucralose	101	101	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360901

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069322	Fluoride	96.4	95.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360635

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2068733	Organic Carbon	97.8	99.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068819	Turbidity	3.12	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069070	Barium	1.98	Spike	P	0 - 20
2069070	Calcium	0.247	Spike	P	0 - 20
2069070	Iron	0.156	Spike	P	0 - 20
2069070	Magnesium	0.780	Spike	P	0 - 20
2069070	Potassium	1.26	Spike	P	0 - 20
2069070	Sodium	1.98	Spike	P	0 - 20
2069070	Zinc	2.62	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360395

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069070	Aluminum	0.260	Spike	P	0 - 20
2069070	Antimony	0.174	Spike	P	0 - 20
2069070	Arsenic	0.365	Spike	P	0 - 20
2069070	Boron	4.92	Spike	P	0 - 20
2069070	Cadmium	0.0979	Spike	P	0 - 20
2069070	Chromium	0.535	Spike	P	0 - 20
2069070	Copper	0.356	Spike	P	0 - 20
2069070	Lead	0.134	Spike	P	0 - 20
2069070	Nickel	0.166	Spike	P	0 - 20
2069070	Selenium	0.437	Spike	P	0 - 20
2069070	Silver	0.401	Spike	P	0 - 20
2069070	Thallium	2.06	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360813

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069257	Chloride	1.36	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360586

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068846	Ammonia-N	0.309	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068842	Kjeldahl Nitrogen	1.81	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068698	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068847	Total-P	0.589	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068863	O-Phosphate-P	1.57	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068903	Acetochlor	17.1	Spike	P	0 - 30
2068903	Alachlor	16.2	Spike	P	0 - 30
2068903	Ametryn	19.5	Spike	P	0 - 30
2068903	Atrazine	12.9	Spike	P	0 - 30
2068903	Atrazine Desethyl	9.24	Spike	P	0 - 30
2068903	Azinphos Methyl	13.3	Spike	P	0 - 30
2068903	Bromacil	8.08	Spike	P	0 - 30
2068903	Butylate	34.5	Spike	F	0 - 30
2068903	Chlorpyrifos Ethyl	18.1	Spike	P	0 - 30
2068903	Chlorpyrifos Methyl	15.8	Spike	P	0 - 30
2068903	Cyanazine	15.0	Spike	P	0 - 30
2068903	Demeton	6.65	Spike	P	0 - 30
2068903	Diazinon	17.1	Spike	P	0 - 30
2068903	Dimethenamid	15.9	Spike	P	0 - 30
2068903	Disulfoton	16.4	Spike	P	0 - 30
2068903	Dithiopyr	10.4	Spike	P	0 - 30
2068903	EPTC	40.2	Spike	F	0 - 30
2068903	Ethion	22.8	Spike	P	0 - 30
2068903	Ethoprop	16.6	Spike	P	0 - 30
2068903	Fenamiphos	13.1	Spike	P	0 - 30
2068903	Fipronil	0.967	Spike	P	0 - 30
2068903	Fipronil Desulfinyl	1.81	Spike	P	0 - 30
2068903	Fipronil Sulfide	8.94	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068903	Fipronil Sulfone	12.5	Spike	P	0 - 30
2068903	Fonofos	18.9	Spike	P	0 - 30
2068903	Hexazinone	14.1	Spike	P	0 - 30
2068903	Malathion	15.4	Spike	P	0 - 30
2068903	Metalaxyl	17.0	Spike	P	0 - 30
2068903	Metolachlor	14.3	Spike	P	0 - 30
2068903	Metribuzin	2.85	Spike	P	0 - 30
2068903	Mevinphos	10.0	Spike	P	0 - 30
2068903	Molinate	0.305	Spike	P	0 - 30
2068903	Norflurazon	6.64	Spike	P	0 - 30
2068903	Oxadiazon	7.73	Spike	P	0 - 30
2068903	Parathion Ethyl	14.1	Spike	P	0 - 30
2068903	Parathion Methyl	16.9	Spike	P	0 - 30
2068903	Pendimethalin	17.9	Spike	P	0 - 30
2068903	Phorate	8.87	Spike	P	0 - 30
2068903	Prodiamine	3.94	Spike	P	0 - 30
2068903	Prometon	16.3	Spike	P	0 - 30
2068903	Prometryn	14.3	Spike	P	0 - 30
2068903	Simazine	10.8	Spike	P	0 - 30
2068903	Tebuconazole	11.6	Spike	P	0 - 30
2068903	Terbufos	17.5	Spike	P	0 - 30
2068903	Terbuthylazine	16.0	Spike	P	0 - 30
LFB	Acetochlor	20.6	LCS	P	0 - 30
LFB	Alachlor	21.2	LCS	P	0 - 30
LFB	Ametryn	20.0	LCS	P	0 - 30
LFB	Atrazine	26.1	LCS	P	0 - 30
LFB	Atrazine Desethyl	18.3	LCS	P	0 - 30
LFB	Azinphos Methyl	18.9	LCS	P	0 - 30
LFB	Bromacil	27.4	LCS	P	0 - 30
LFB	Butylate	14.9	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	13.3	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	16.0	LCS	P	0 - 30
LFB	Cyanazine	11.9	LCS	P	0 - 30
LFB	Demeton	4.90	LCS	P	0 - 30
LFB	Diazinon	23.3	LCS	P	0 - 30
LFB	Dimethenamid	19.3	LCS	P	0 - 30
LFB	Disulfoton	17.8	LCS	P	0 - 30
LFB	Dithiopyr	23.8	LCS	P	0 - 30
LFB	EPTC	14.3	LCS	P	0 - 30
LFB	Ethion	19.7	LCS	P	0 - 30
LFB	Ethoprop	9.74	LCS	P	0 - 30
LFB	Fenamiphos	18.0	LCS	P	0 - 30
LFB	Fipronil	25.7	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	24.8	LCS	P	0 - 30
LFB	Fipronil Sulfide	15.3	LCS	P	0 - 30
LFB	Fipronil Sulfone	21.1	LCS	P	0 - 30
LFB	Fonofos	18.8	LCS	P	0 - 30
LFB	Hexazinone	21.4	LCS	P	0 - 30
LFB	Malathion	18.9	LCS	P	0 - 30
LFB	Metalaxyl	21.1	LCS	P	0 - 30
LFB	Metolachlor	20.0	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P360553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Metribuzin	6.58	LCS	P	0 - 30
LFB	Mevinphos	25.4	LCS	P	0 - 30
LFB	Molinate	13.4	LCS	P	0 - 30
LFB	Norflurazon	21.5	LCS	P	0 - 30
LFB	Oxadiazon	21.8	LCS	P	0 - 30
LFB	Parathion Ethyl	15.6	LCS	P	0 - 30
LFB	Parathion Methyl	17.1	LCS	P	0 - 30
LFB	Pendimethalin	9.35	LCS	P	0 - 30
LFB	Phorate	15.5	LCS	P	0 - 30
LFB	Prodiamine	5.77	LCS	P	0 - 30
LFB	Prometon	20.4	LCS	P	0 - 30
LFB	Prometryn	21.4	LCS	P	0 - 30
LFB	Simazine	25.1	LCS	P	0 - 30
LFB	Tebuconazole	31.6	LCS	F	0 - 30
LFB	Terbufos	17.2	LCS	P	0 - 30
LFB	Terbutylazine	18.7	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360131

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069006	2,4-D	23.0	Spike	P	0 - 30
2069006	Acetaminophen	1.77	Spike	P	0 - 30
2069006	Bentazon	9.24	Spike	P	0 - 30
2069006	Carbamazepine	15.9	Spike	P	0 - 30
2069006	Diuron	3.15	Spike	P	0 - 30
2069006	Fenuron	4.26	Spike	P	0 - 30
2069006	Fluridone	6.68	Spike	P	0 - 30
2069006	Hydrocodone	1.12	Spike	P	0 - 30
2069006	Ibuprofen	13.0	Spike	P	0 - 30
2069006	Imazapyr	9.49	Spike	P	0 - 30
2069006	Imidacloprid	6.77	Spike	P	0 - 30
2069006	Linuron	1.17	Spike	P	0 - 30
2069006	MCPP	12.8	Spike	P	0 - 30
2069006	Naproxen	13.5	Spike	P	0 - 30
2069006	Primidone	18.2	Spike	P	0 - 30
2069006	Pyraclostrobin	15.3	Spike	P	0 - 30
2069006	Triclopyr	19.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068775	Acesulfame K	11.3	Spike	P	0 - 30
2068775	AMPA	2.75	Spike	P	0 - 30
2068775	Endothall	0.330	Spike	P	0 - 30
2068775	Glufosinate	18.2	Spike	P	0 - 30
2068775	Glyphosate	1.20	Spike	P	0 - 30
2068775	Sucralose	0.443	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P360327

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068861	Color (true)	4.67	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069322	Total Alkalinity	0.900	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360683

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068977	TDS	7.26	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360901

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069322	Fluoride	0.516	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360635

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2068733	Organic Carbon	1.21	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: 2068881
Field Sample ID: G2NE0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	73.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	95.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	77.2	P	30 - 160
EPA 8321B	Diuron-d6	66.7	P	30 - 160
EPA 8321B	Endothall-d6	68.5	P	30 - 160
EPA 8321B	Endothall-d6	68.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.9	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160
EPA 8321B	Sucralose-d6	107	P	30 - 160

Lab Sample ID: 2068883
Field Sample ID: G2NE0165

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	76.5	P	68 - 130
EPA 8270D	Terbufos-d10	112	P	61 - 136
EPA 8270D	Terbufos-d10	5.38	F	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89962

Included Lab Sample IDs: 2068861

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89964

Included Lab Sample IDs: 2068863

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

Reference Method: SM 2120 B

Run ID: A89978

Included Lab Sample IDs: 2068861

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

Reference Method: EPA 8321B

Run ID: A89982

Included Lab Sample IDs: 2068881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	73.9	84.8	P/P	60 - 160
Endothall	84.7	81.0	P/P	60 - 160
Sucralose	79.2	88.0	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89984

Included Lab Sample IDs: 2068881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	93.9	105	P/P	60 - 160
Glufosinate	128	128	P/P	60 - 160
Glyphosate	117	111	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90019

Included Lab Sample IDs: 2068882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.5	101	P/P	90 - 110
Calcium	98.7	102	P/P	90 - 110
Iron	101	104	P/P	90 - 110
Magnesium	99.9	103	P/P	90 - 110
Potassium	98.4	99.8	P/P	90 - 110
Sodium	99.3	101	P/P	90 - 110
Zinc	99.1	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90029

Included Lab Sample IDs: 2068862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90036

Included Lab Sample IDs: 2068862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	108	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90056

Included Lab Sample IDs: 2068862

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90063

Included Lab Sample IDs: 2068862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90071

Included Lab Sample IDs: 2068861

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.1	101	P/P	90 - 110
Sulfate	102	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90074

Included Lab Sample IDs: 2068882

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	100	P/P	90 - 110
Antimony	96.1	97.2	P/P	90 - 110
Arsenic	99.4	100	P/P	90 - 110
Boron	97.6	97.1	P/P	90 - 110
Cadmium	97.3	97.5	P/P	90 - 110
Chromium	99.4	98.8	P/P	90 - 110
Copper	98.8	99.7	P/P	90 - 110
Lead	98.5	99.5	P/P	90 - 110
Nickel	98.4	98.7	P/P	90 - 110
Selenium	98.9	98.9	P/P	90 - 110
Silver	94.3	95.0	P/P	90 - 110
Thallium	90.9	92.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A90082
Included Lab Sample IDs: 2068862

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.2	96.2	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90091
Included Lab Sample IDs: 2068881

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	73.2	P/P	50 - 150
Acetaminophen	102	113	P/P	60 - 160
Bentazon	95.7	90.1	P/P	50 - 160
Carbamazepine	108	101	P/P	60 - 150
Diuron	110	90.2	P/P	60 - 150
Fenuron	112	106	P/P	60 - 150
Fluridone	115	112	P/P	60 - 160
Hydrocodone	116	104	P/P	60 - 150
Ibuprofen	80.0	90.1	P/P	50 - 160
Imazapyr	88.4	90.4	P/P	50 - 150
Imidacloprid	109	89.9	P/P	60 - 150
Linuron	87.6	99.3	P/P	60 - 150
MCPP	92.4	81.8	P/P	50 - 150
Naproxen	97.7	91.9	P/P	50 - 160
Primidone	80.3	88.9	P/P	60 - 150
Pyraclostrobin	95.9	69.9	P/P	60 - 150
Triclopyr	98.7	96.2	P/P	50 - 150

Reference Method: SM 2320 B-97
Run ID: A90183
Included Lab Sample IDs: 2068861

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

Reference Method: SM 4500 F-C-97
Run ID: A90183
Included Lab Sample IDs: 2068861

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

Reference Method: EPA 8270D
Run ID: A90253
Included Lab Sample IDs: 2068883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	102		P	80 - 120
Alachlor	108		P	80 - 120
Ametryn	104		P	80 - 120
Atrazine	101		P	80 - 120
Atrazine Desethyl	92.9		P	80 - 120
Azinphos Methyl	100		P	80 - 120
Butylate	95.1		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A90253
Included Lab Sample IDs: 2068883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorpyrifos Ethyl	102		P	80 - 120
Chlorpyrifos Methyl	98.2		P	80 - 120
Cyanazine	91.6		P	80 - 120
Demeton	96.8		P	80 - 120
Diazinon	99.2		P	80 - 120
Dimethenamid	103		P	80 - 120
Disulfoton	95.5		P	80 - 120
Dithiopyr	104		P	80 - 120
EPTC	99.4		P	80 - 120
Ethion	98.8		P	80 - 120
Ethoprop	96.0		P	80 - 120
Fenamiphos	96.9		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	102		P	80 - 120
Fipronil Sulfide	95.7		P	80 - 120
Fipronil Sulfone	94.8		P	80 - 120
Fonofos	95.3		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	96.5		P	80 - 120
Metalaxyl	106		P	80 - 120
Metolachlor	109		P	80 - 120
Metribuzin	87.2		P	80 - 120
Mevinphos	98.7		P	80 - 120
Molinate	97.5		P	80 - 120
Norflurazon	101		P	80 - 120
Oxadiazon	106		P	80 - 120
Parathion Ethyl	96.5		P	80 - 120
Parathion Methyl	96.7		P	80 - 120
Pendimethalin	99.4		P	80 - 120
Phorate	92.3		P	80 - 120
Prodiamine	104		P	80 - 120
Prometon	103		P	80 - 120
Prometryn	103		P	80 - 120
Simazine	97.9		P	80 - 120
Tebuconazole	98.0		P	80 - 120
Terbufos	95.3		P	80 - 120
Terbutylazine	99.5		P	80 - 120

Reference Method: EPA 8270D
Run ID: A90284
Included Lab Sample IDs: 2068883

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromacil	104		P	80 - 120

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.12	
EPA 200.7 Rev. 4.4	Barium	104		104	103	101			1.98
	Calcium	98.8		101	102				0.247
	Iron	105		107	104	104			0.156
	Magnesium	107		102	107	106			0.780
	Potassium	99.8		99.5	98.3	96.9			1.26
	Sodium	103		98.5	102	98.7			1.98
	Zinc	102		104	105	102			2.62
EPA 200.8 Rev. 5.4	Aluminum	104		101	101	101			0.260
	Antimony	102		105	103	103			0.174
	Arsenic	107		109	108	107			0.365
	Boron	102		102	106	101			4.92
	Cadmium	104		107	105	105			0.0979
	Chromium	105		102	103	103			0.535
	Copper	103		100	101	100			0.356
	Lead	103		103	101	101			0.134
	Nickel	103		101	101	101			0.166
	Selenium	105		105	104	103			0.437
	Silver	100		100	100	100			0.401
	Thallium	98.3		101	97.6	99.6			2.06
EPA 300.0 Rev. 2.1	Chloride	99.5		95.4	103			1.36	
	Sulfate	102		102	102				
EPA 350.1 Rev. 2.0	Ammonia-N	100		98.8	99.3				0.309
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104		93.2	91.2				1.81
EPA 353.2 Rev. 2.0	NO2NO3-N	100		103	103				0.0
EPA 365.1 Rev. 2.0	Total-P	100		101	102				0.589
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3		94.2	96.1				1.57
EPA 8270D	Acetochlor	75.7	93.2	75.7	89.8		20.6		17.1
	Alachlor	74.5	92.1	75.1	88.3		21.2		16.2
	Ametryn	73.9	90.3	90.6	110		20.0		19.5
	Atrazine	83.0	108				26.1		12.9
	Atrazine Desethyl	84.0	101	65.0	72.4		18.3		9.24
	Azinphos Methyl	104	125	83.8	95.7		18.9		13.3
	Bromacil	72.8	95.9	73.4	79.6		27.4		8.08
	Butylate	62.2	72.2	39.4	27.8		14.9		34.5
	Chlorpyrifos Ethyl	86.3	98.7	79.7	95.5		13.3		18.1
	Chlorpyrifos Methyl	85.5	100	74.5	87.3		16.0		15.8
	Cyanazine	210	237	111	129		11.9		15.0
	Demeton	69.6	73.1	60.3	56.4		4.90		6.65
	Diazinon	79.1	99.9	75.9	90.0		23.3		17.1
	Dimethenamid	72.6	88.1	74.9	87.9		19.3		15.9
	Disulfoton	85.5	102	71.4	84.1		17.8		16.4
	Dithiopyr	75.9	96.4	75.0	88.6		23.8		10.4
	EPTC	63.7	73.5	46.2	30.7		14.3		40.2
	Ethion	65.1	79.3	80.6	101		19.7		22.8
	Ethoprop	87.0	95.9	76.3	90.1		9.74		16.6
	Fenamiphos	81.5	97.6	98.0	112		18.0		13.1
	Fipronil	70.5	91.3				25.7		0.967
	Fipronil Desulfinyl	68.4	87.9	79.3	81.3		24.8		1.81
	Fipronil Sulfide	73.9	86.1				15.3		8.94
	Fipronil Sulfone	68.0	84.1				21.1		12.5
	Fonofos	86.4	104	74.9	90.5		18.8		18.9
	Hexazinone	83.5	104	91.9	107		21.4		14.1
	Malathion	79.8	96.4	79.7	93.0		18.9		15.4

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	MS
						SMP	
		LCS		LCS			
EPA 8270D	Metalaxyl	76.9	95.0			21.1	17.0
	Metolachlor	75.2	92.0	76.1	87.8	20.0	14.3
	Metribuzin	192	205	175	207	6.58	2.85
	Mevinphos	75.0	96.7	72.1	79.7	25.4	10.0
	Molinate	70.1	80.2	56.0	55.9	13.4	0.305
	Norflurazon	78.1	97.0	74.7	79.9	21.5	6.64
	Oxadiazon	77.0	95.8			21.8	7.73
	Parathion Ethyl	81.1	94.8	77.4	89.2	15.6	14.1
	Parathion Methyl	85.5	101	78.8	93.3	17.1	16.9
	Pendimethalin	88.9	97.7	93.5	112	9.35	17.9
	Phorate	80.3	93.8	71.9	78.6	15.5	8.87
	Prodiamine	41.8	44.3	94.8	98.9	5.77	3.94
	Prometon	66.2	81.2	78.1	91.9	20.4	16.3
	Prometryn	68.4	84.7	68.6	79.1	21.4	14.3
	Simazine	85.8	110	86.0	95.9	25.1	10.8
	Tebuconazole	32.5	44.6	52.6	59.1	31.6	11.6
	Terbufos	82.3	97.8	73.3	87.4	17.2	17.5
	Terbuthylazine	81.9	98.8	78.1	91.7	18.7	16.0
EPA 8321B	2,4-D	97.9		119	92.7		23.0
	Acesulfame K	81.7		158	178		11.3
	Acetaminophen	80.2		118	116		1.77
	AMPA	92.5		71.7	74.4		2.75
	Bentazon	91.3		77.2	61.1		9.24
	Carbamazepine	96.3		87.2	74.3		15.9
	Diuron	72.2		62.3	58.5		3.15
	Endothall	74.4		76.9	76.7		0.330
	Fenuron	129		123	118		4.26
	Fluridone	115		124	111		6.68
	Glufosinate	123		83.4	100		18.2
	Glyphosate	115		104	106		1.20
	Hydrocodone	119		117	118		1.12
	Ibuprofen	82.7		78.8	69.2		13.0
	Imazapyr	111		138	114		9.49
	Imidacloprid	107		197	183		6.77
	Linuron	77.4		72.6	73.4		1.17
	MCPP	126		162	142		12.8
	Naproxen	66.3		85.7	74.9		13.5
	Primidone	111		125	104		18.2
	Pyraclostrobin	67.2		77.3	65.8		15.3
	Sucralose	74.0		101	101		0.443
	Triclopyr	65.1		88.4	72.6		19.7
SM 2120 B	Color (true)	104				4.67	
SM 2320 B-97	Total Alkalinity	101				0.900	
SM 2540 C-97	TDS					7.26	
SM 4500 F-C-97	Fluoride	96.2		96.4	95.8		0.516
SM 5310 B-00	Organic Carbon	97.6		97.8	99.1		1.21

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2068861

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	2068882
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2068882
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2068861
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2068861
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2068862
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2068862
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2068862
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2068862
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2068863
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2068883
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2068881
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2068881
SM 2120 B / E31780	True Color measured at 450 nm	2068861
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2068861
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2068861
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2068861
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2068861
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2068862

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	03/12/2019			03/12/2019 16:50	Adrian Shelby	2068861
EPA 200.7 Rev. 4.4	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/14/2019 14:59	Betina Topolski	2068882
EPA 200.8 Rev. 5.4	03/12/2019	03/13/2019 17:35	Elliott D. Healy	03/16/2019 09:38	Allison Taylor	2068882
EPA 300.0 Rev. 2.1	03/12/2019			03/20/2019 02:08	Lipi Saha	2068861
	03/12/2019			03/21/2019 00:22	Lipi Saha	2068861
EPA 350.1 Rev. 2.0	03/12/2019			03/15/2019 12:09	Ping Hua	2068862
EPA 351.2 Rev. 2.0	03/12/2019	03/14/2019 12:00	Adrian Shelby	03/15/2019 12:23	Joseph Suarez	2068862
EPA 353.2 Rev. 2.0	03/12/2019			03/15/2019 10:15	Beverly Y. Sanders	2068862
EPA 365.1 Rev. 2.0	03/12/2019	03/15/2019 14:20	Sima Feizi	03/18/2019 10:06	Beverly Y. Sanders	2068862
EPA 365.1 Rev. 2.0 dissolved	03/12/2019			03/12/2019 15:32	Jhamieka S. Greenwood	2068863
EPA 8270D	03/12/2019	03/18/2019 09:08	Dinesh Mishra	03/20/2019 15:24	Vandana T. Nagar	2068883
	03/12/2019	03/18/2019 09:08	Dinesh Mishra	03/21/2019 18:15	Vandana T. Nagar	2068883
EPA 8321B	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/12/2019 17:37	Juyoung Kim	2068881
	03/12/2019	03/12/2019 15:00	Hoor Shaik	03/13/2019 01:45	Juyoung Kim	2068881
	03/12/2019	03/13/2019 10:00	Hoor Shaik	03/16/2019 08:01	Juyoung Kim	2068881
SM 2120 B	03/12/2019			03/12/2019 16:28	Mariam Hanna	2068861
SM 2320 B-97	03/12/2019			03/21/2019 02:54	Dale L. Simmons	2068861
SM 2540 C-97	03/12/2019			03/13/2019 14:03	Yijie Li	2068861
SM 2540 D-97	03/12/2019			03/13/2019 14:03	Yijie Li	2068861
SM 4500 F-C-97	03/12/2019			03/21/2019 02:54	Dale L. Simmons	2068861
SM 5310 B-00	03/12/2019			03/18/2019 11:40	Julia Storbeck	2068862