

Chemical Analysis Report

SW-DIST-2019-03-14-02

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-2019-03-11-32**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Colin Wright, Program Administrator

Date Certified: 05-APR-2019 12:23

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular background.

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: CARLTON BRANCH @ SR674

Collection Date/Time: 03/13/2019 11:30

Field ID: G2SW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070128	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P360457	
	EPA 300.0 Rev. 2.1	Chloride	18	A	mg Cl/L	P361008	
		Sulfate	66	A	mg SO4/L	P361013	
	SM 2120 B	Color (true)	28	A	PCU	P360502	
	SM 2320 B-97	Total Alkalinity	30		mg CaCO3/L	P361098	
	SM 2540 C-97	TDS	171		mg/L	P360949	
	SM 2540 D-97	TSS	6	I	mg/L	P360820	
	SM 4500 F-C-97	Fluoride	0.20		mg F/L	P360987	
2070129	EPA 350.1 Rev. 2.0	Ammonia-N	0.020		mg N/L	P360674	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P360870	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.97		mg N/L	P360780	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P360689	
	SM 5310 B-00	Organic Carbon	5.2		mg C/L	P360906	
2070130	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.072		mg P/L	P360485	
2070133	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P360421	
		2,4-D	0.0083		ug/L	P360490	
		AMPA**	0.17	I	ug/L	P360421	
		Acetaminophen**	0.0080	U	ug/L	P360490	
		Endothall**	0.25	UJ	ug/L	P360421	CCV
		Glufosinate**	0.10	U	ug/L	P360421	
		Glyphosate**	0.10	U	ug/L	P360421	
		Bentazon	8.0E-04	U	ug/L	P360490	
		Carbamazepine**	8.0E-04	U	ug/L	P360490	
		Sucralose**	0.022	I	ug/L	P360421	MS
		Diuron	0.0020	U	ug/L	P360490	
		Fenuron	0.016	U	ug/L	P360490	
		Fluridone**	8.0E-04	U	ug/L	P360490	
		Imazapyr**	0.010	I	ug/L	P360490	
		Hydrocodone**	0.0020	U	ug/L	P360490	
		Ibuprofen**	0.020	U	ug/L	P360490	
		Imidacloprid	0.10		ug/L	P360490	MS
		Linuron	0.0040	U	ug/L	P360490	
		MCP	0.0020	U	ug/L	P360490	
		Naproxen**	0.0080	U	ug/L	P360490	
		Primidone**	0.0040	U	ug/L	P360490	
		Pyraclostrobin**	0.0020	U	ug/L	P360490	
		Triclopyr**	0.0040	U	ug/L	P360490	
2070134	EPA 200.7 Rev. 4.4	Barium	19.1		ug/L	P360680	
		Calcium	23.9		mg/L	P360680	
		Iron	130		ug/L	P360680	
		Magnesium	11.4		mg/L	P360680	
		Potassium	7.3		mg/L	P360680	
		Sodium	8.8		mg/L	P360680	

Field ID: G2SW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070134	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P360680	
	EPA 200.8 Rev. 5.4	Aluminum	164		ug/L	P360680	
		Antimony	0.22		ug/L	P360680	
		Arsenic	0.50		ug/L	P360680	
		Boron**	31.8		ug/L	P360680	
		Cadmium	0.113		ug/L	P360680	
		Chromium	0.48	I	ug/L	P360680	
		Copper	1.56		ug/L	P360680	
		Lead	0.20	U	ug/L	P360680	
		Nickel	0.50	U	ug/L	P360680	
		Selenium	0.38	I	ug/L	P360680	MS
		Silver	0.010	U	ug/L	P360680	
		Thallium	0.10	U	ug/L	P360680	
2070135	EPA 8270D	Acetochlor	0.25	U	ng/L	P360553	
		Alachlor	0.25	U	ng/L	P360553	
		Ametryn	0.61	U	ng/L	P360553	
		Atrazine	0.42	I	ng/L	P360553	
		Atrazine Desethyl	1.5	U	ng/L	P360553	
		Azinphos Methyl	5.1	U	ng/L	P360553	
		Bromacil	160		ng/L	P360553	
		Butylate	0.41	U	ng/L	P360553	RPD
		Chlorpyrifos Ethyl	0.25	U	ng/L	P360553	
		Chlorpyrifos Methyl	0.10	U	ng/L	P360553	
		Cyanazine	3.3	U	ng/L	P360553	
		Demeton	7.1	U	ng/L	P360553	
		Diazinon	0.13	U	ng/L	P360553	
		Dimethenamid**	0.10	U	ng/L	P360553	
		Disulfoton	0.51	U	ng/L	P360553	
		Dithiopyr**	0.10	U	ng/L	P360553	
		EPTC	1.3	U	ng/L	P360553	RPD
		Ethion	0.15	U	ng/L	P360553	
		Ethoprop	0.10	U	ng/L	P360553	
		Fenamiphos	0.51	U	ng/L	P360553	
		Fipronil	0.25	U	ng/L	P360553	
		Fipronil Desulfinyl**	0.13	U	ng/L	P360553	
		Fipronil Sulfide	0.15	U	ng/L	P360553	
		Fipronil Sulfone	0.15	U	ng/L	P360553	
		Fonofos	0.20	U	ng/L	P360553	
		Hexazinone	0.51	U	ng/L	P360553	
		Malathion	0.36	U	ng/L	P360553	
		Metalaxyl	17		ng/L	P360553	
		Metolachlor	13		ng/L	P360553	
		Metribuzin	52		ng/L	P360553	
		Mevinphos	0.51	U	ng/L	P360553	
		Molinate	0.31	U	ng/L	P360553	

Field ID: G2SW0099

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2070135	EPA 8270D	Norflurazon	25		ng/L	P360553	
		Oxadiazon**	0.10	U	ng/L	P360553	
		Parathion Ethyl	0.25	U	ng/L	P360553	
		Parathion Methyl	0.56	U	ng/L	P360553	
		Pendimethalin	1.0	U	ng/L	P360553	
		Phorate	0.25	U	ng/L	P360553	
		Prodiamine**	0.18	UJ	ng/L	P360553	LCS
		Prometon	0.92	U	ng/L	P360553	
		Prometryn	0.20	U	ng/L	P360553	
		Simazine	0.51	U	ng/L	P360553	
		Tebuconazole**	1.0	IJ	ng/L	P360553	RPD
		Terbufos	0.10	U	ng/L	P360553	
		Terbutylazine	0.43	U	ng/L	P360553	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high 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. Results confirmed in re-extraction.

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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360457

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360680

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: P360680

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: P361008

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361013

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360674

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: P360870

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360780

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360689

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360485

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: P360421

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: P360490

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: P360502

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P361098

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

Reference Method: SM 2540 C-97
Batch ID: P360949

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360820

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360987

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360906

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: P360680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	99.7		P	85 - 115
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	109		P	85 - 115
Potassium	107		P	85 - 115
Sodium	102		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	93.8		P	85 - 115
Antimony	95.1		P	85 - 115
Arsenic	98.7		P	85 - 115
Boron	101		P	85 - 115
Cadmium	93.8		P	85 - 115
Chromium	89.1		P	85 - 115
Copper	101		P	85 - 115
Lead	92.1		P	85 - 115
Nickel	102		P	85 - 115
Selenium	96.0		P	85 - 115
Silver	100		P	85 - 115
Thallium	94.9		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361008

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361013

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360674

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360870

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360780

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360689

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360485

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.4		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: P360421

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	87.5		P	40 - 150
AMPA	89.7		P	40 - 150
Endothall	85.7		P	40 - 150
Glufosinate	91.4		P	40 - 150
Glyphosate	79.4		P	40 - 140
Sucralose	54.7		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P360490

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	75.9		P	40 - 150
Acetaminophen	111		P	30 - 150
Bentazon	129		P	30 - 150
Carbamazepine	111		P	40 - 150
Diuron	120		P	40 - 150
Fenuron	127		P	40 - 150
Fluridone	127		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	76.0		P	40 - 150
Imazapyr	99.5		P	40 - 150
Imidacloprid	102		P	40 - 150
Linuron	103		P	40 - 150
MCPP	82.2		P	40 - 150
Naproxen	87.3		P	40 - 150
Primidone	119		P	40 - 150
Pyraclostrobin	82.3		P	40 - 150
Triclopyr	53.8		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P360502

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: P361098

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

Reference Method: SM 4500 F-C-97
Batch ID: P360987

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070118	Barium	102	101	P/P	80 - 120
2070118	Calcium	102		P	80 - 120
2070118	Iron	110	106	P/P	80 - 120
2070118	Magnesium	112	108	P/P	80 - 120
2070118	Potassium	108	108	P/P	80 - 120
2070118	Sodium	102		P	80 - 120
2070118	Zinc	102	101	P/P	80 - 120
2070228	Barium	101		P	80 - 120
2070228	Calcium	100		P	80 - 120
2070228	Iron	108		P	80 - 120
2070228	Magnesium	99.7		P	80 - 120
2070228	Potassium	103		P	80 - 120
2070228	Sodium	103		P	80 - 120
2070228	Zinc	98.9		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070118	Aluminum	93.5	92.6	P/P	80 - 120
2070118	Antimony	94.7	94.4	P/P	80 - 120
2070118	Arsenic	94.8	94.3	P/P	80 - 120
2070118	Boron	93.2	93.3	P/P	80 - 120
2070118	Cadmium	96.8	94.3	P/P	80 - 120
2070118	Chromium	89.1	88.6	P/P	80 - 120
2070118	Copper	98.8	97.9	P/P	80 - 120
2070118	Lead	92.6	90.6	P/P	80 - 120
2070118	Nickel	99.1	100	P/P	80 - 120
2070118	Selenium	93.7	93.4	P/P	80 - 120
2070118	Silver	99.0	98.8	P/P	80 - 120
2070118	Thallium	96.8	95.0	P/P	80 - 120
2070228	Aluminum	92.4		P	80 - 120
2070228	Antimony	94.8		P	80 - 120
2070228	Arsenic	96.5		P	80 - 120
2070228	Boron	93.5		P	80 - 120
2070228	Cadmium	94.8		P	80 - 120
2070228	Chromium	88.3		P	80 - 120
2070228	Copper	94.1		P	80 - 120
2070228	Lead	92.2		P	80 - 120
2070228	Nickel	95.4		P	80 - 120
2070228	Selenium	73.0		F	80 - 120
2070228	Silver	98.7		P	80 - 120
2070228	Thallium	96.0		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361008

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070128	Chloride	105		P	90 - 110
2070399	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361013

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070399	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360674

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070066	Ammonia-N	101	93.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070114	Kjeldahl Nitrogen	104	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070065	NO2NO3-N	94.8	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070129	Total-P	98.2	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360485

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070043	O-Phosphate-P	97.7	99.5	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
2068903	EPTC	46.2	30.7	P/P	10 - 92.0

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	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: P360421

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069913	Acesulfame K	103	129	P/P	40 - 150
2069913	AMPA	78.4	83.1	P/P	40 - 150
2069913	Endothall	84.4	94.8	P/P	40 - 150
2069913	Glufosinate	68.3	58.8	P/P	40 - 150
2069913	Glyphosate	74.3	70.7	P/P	40 - 140
2069913	Sucralose	12.2	11.8	F/F	40 - 150

Reference Method: EPA 8321B
Batch ID: P360490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069849	2,4-D	94.4	96.9	P/P	40 - 150
2069849	Acetaminophen	103	90.8	P/P	30 - 150
2069849	Bentazon	78.8	75.9	P/P	30 - 150
2069849	Carbamazepine	102	92.4	P/P	40 - 150
2069849	Diuron	92.1	86.4	P/P	40 - 150
2069849	Fenuron	127	128	P/P	40 - 150
2069849	Fluridone	135	107	P/P	40 - 150
2069849	Hydrocodone	94.9	95.5	P/P	40 - 150
2069849	Ibuprofen	78.9	64.6	P/P	40 - 150
2069849	Imazapyr	65.2	55.8	P/P	40 - 150
2069849	Imidacloprid	183	169	F/F	40 - 150
2069849	Linuron	87.4	86.8	P/P	40 - 150
2069849	MCP	124	110	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P360490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2069849	Naproxen	75.2	85.0	P/P	40 - 150
2069849	Primidone	114	102	P/P	40 - 150
2069849	Pyraclostrobin	79.7	67.5	P/P	40 - 150
2069849	Triclopyr	85.9	70.6	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360987

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070301	Fluoride	97.3	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2070129	Organic Carbon	96.8	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P360457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070051	Turbidity	1.25	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070118	Barium	1.30	Spike	P	0 - 20
2070118	Calcium	0.00327	Spike	P	0 - 20
2070118	Iron	2.94	Spike	P	0 - 20
2070118	Magnesium	2.29	Spike	P	0 - 20
2070118	Potassium	0.464	Spike	P	0 - 20
2070118	Sodium	0.471	Spike	P	0 - 20
2070118	Zinc	1.47	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070118	Aluminum	0.843	Spike	P	0 - 20
2070118	Antimony	0.359	Spike	P	0 - 20
2070118	Arsenic	0.569	Spike	P	0 - 20
2070118	Boron	0.135	Spike	P	0 - 20
2070118	Cadmium	2.62	Spike	P	0 - 20
2070118	Chromium	0.495	Spike	P	0 - 20
2070118	Copper	0.859	Spike	P	0 - 20
2070118	Lead	2.15	Spike	P	0 - 20
2070118	Nickel	0.938	Spike	P	0 - 20
2070118	Selenium	0.307	Spike	P	0 - 20
2070118	Silver	0.287	Spike	P	0 - 20
2070118	Thallium	1.90	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070128	Chloride	1.03	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P361013

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070128	Sulfate	1.27	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360674

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070066	Ammonia-N	6.04	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070114	Kjeldahl Nitrogen	3.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070065	NO2NO3-N	0.917	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P360689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070129	Total-P	3.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P360485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070043	O-Phosphate-P	1.83	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

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	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
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	Metaxyl	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	Terbutylazine	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

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	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
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	Terbuthylazine	18.7	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360421

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069913	Acesulfame K	22.4	Spike	P	0 - 30
2069913	AMPA	5.79	Spike	P	0 - 30
2069913	Endothall	11.7	Spike	P	0 - 30
2069913	Glufosinate	15.0	Spike	P	0 - 30
2069913	Glyphosate	4.87	Spike	P	0 - 30
2069913	Sucralose	2.41	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	2,4-D	2.59	Spike	P	0 - 30
2069849	Acetaminophen	12.8	Spike	P	0 - 30
2069849	Bentazon	3.26	Spike	P	0 - 30
2069849	Carbamazepine	9.88	Spike	P	0 - 30
2069849	Diuron	6.16	Spike	P	0 - 30
2069849	Fenuron	0.378	Spike	P	0 - 30
2069849	Fluridone	19.7	Spike	P	0 - 30
2069849	Hydrocodone	0.577	Spike	P	0 - 30
2069849	Ibuprofen	19.9	Spike	P	0 - 30
2069849	Imazapyr	10.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P360490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2069849	Imidacloprid	6.91	Spike	P	0 - 30
2069849	Linuron	0.770	Spike	P	0 - 30
2069849	MCP	11.7	Spike	P	0 - 30
2069849	Naproxen	12.1	Spike	P	0 - 30
2069849	Primidone	11.2	Spike	P	0 - 30
2069849	Pyraclostrobin	16.7	Spike	P	0 - 30
2069849	Triclopyr	19.6	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P360502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070128	Color (true)	3.42	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P361098

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070301	Total Alkalinity	0.430	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P360949

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070015	TDS	0.601	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P360987

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070301	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P360906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2070129	Organic Carbon	0.0813	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: 2070133
Field Sample ID: G2SW0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	61.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	80.3	P	30 - 160
EPA 8321B	Diuron-d6	82.4	P	30 - 160
EPA 8321B	Endothall-d6	105	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	78.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.9	P	30 - 160
EPA 8321B	Primidone-d5	88.2	P	30 - 160
EPA 8321B	Sucralose-d6	75.2	P	30 - 160

Lab Sample ID: 2070135
Field Sample ID: G2SW0099

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	83.6	P	68 - 130
EPA 8270D	Terbufos-d10	80.9	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A90017

Included Lab Sample IDs: 2070128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A90024

Included Lab Sample IDs: 2070130

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A90035

Included Lab Sample IDs: 2070128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A90071

Included Lab Sample IDs: 2070128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	94.0	P/P	90 - 110
Sulfate	103	94.7	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A90083

Included Lab Sample IDs: 2070133

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	160	121	P/P	60 - 160
Endothall	240*	250*	F/F	60 - 160
Sucralose	106	89.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A90093

Included Lab Sample IDs: 2070133

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	106	98.7	P/P	60 - 160
Glufosinate	95.8	86.9	P/P	60 - 160
Glyphosate	96.3	87.4	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A90097

Included Lab Sample IDs: 2070129

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A90128

Included Lab Sample IDs: 2070129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A90140

Included Lab Sample IDs: 2070134

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A90158

Included Lab Sample IDs: 2070129

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90170

Included Lab Sample IDs: 2070134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.2	95.1	P/P	90 - 110
Arsenic	93.9	95.2	P/P	90 - 110
Boron	94.3	93.2	P/P	90 - 110
Chromium	94.6	95.4	P/P	90 - 110
Lead	94.0	94.0	P/P	90 - 110
Selenium	95.3	93.3	P/P	90 - 110
Silver	101	100	P/P	90 - 110
Thallium	92.6	90.7	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A90186

Included Lab Sample IDs: 2070129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	95.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A90190

Included Lab Sample IDs: 2070129

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.7	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90207

Included Lab Sample IDs: 2070134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	93.9	93.5	P/P	90 - 110
Nickel	94.2	93.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A90218

Included Lab Sample IDs: 2070128

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A90224

Included Lab Sample IDs: 2070134

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	99.7	98.6	P/P	90 - 110
Cadmium	99.6	98.6	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A90248

Included Lab Sample IDs: 2070128

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	99.5	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A90253

Included Lab Sample IDs: 2070135

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
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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A90253

Included Lab Sample IDs: 2070135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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 8321B

Run ID: A90274

Included Lab Sample IDs: 2070133

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	93.3	98.8	P/P	50 - 150
Acetaminophen	122	111	P/P	60 - 160
Bentazon	89.8	87.5	P/P	50 - 160
Carbamazepine	100	109	P/P	60 - 150
Diuron	114	108	P/P	60 - 150
Fenuron	113	110	P/P	60 - 150
Fluridone	66.0	104	P/P	60 - 160
Hydrocodone	121	115	P/P	60 - 150
Ibuprofen	92.7	109	P/P	50 - 160
Imazapyr	100	97.6	P/P	50 - 150
Imidacloprid	105	113	P/P	60 - 150
Linuron	99.7	94.0	P/P	60 - 150
MCP	91.5	87.7	P/P	50 - 150
Naproxen	106	89.5	P/P	50 - 160
Primidone	138	92.5	P/P	60 - 150
Pyraclostrobin	82.5	118	P/P	60 - 150
Triclopyr	96.1	95.4	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A90284

Included Lab Sample IDs: 2070135

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							1.25	
EPA 200.7 Rev. 4.4	Barium	99.7		102	101	101			1.30
	Calcium	102		102	100				0.0032
	Iron	104		110	106	108			2.94
	Magnesium	109		112	108	99.7			2.29
	Potassium	107		108	108	103			0.464
	Sodium	102		102	103				0.471
	Zinc	98.9		102	101	98.9			1.47
EPA 200.8 Rev. 5.4	Aluminum	93.8		93.5	92.6	92.4			0.843
	Antimony	95.1		94.7	94.4	94.8			0.359
	Arsenic	98.7		94.8	94.3	96.5			0.569
	Boron	101		93.2	93.3	93.5			0.135
	Cadmium	93.8		96.8	94.3	94.8			2.62
	Chromium	89.1		89.1	88.6	88.3			0.495
	Copper	101		98.8	97.9	94.1			0.859
	Lead	92.1		92.2	92.6	90.6			2.15
	Nickel	102		99.1	100	95.4			0.938
	Selenium	96.0		93.7	93.4	73.0			0.307
	Silver	100		99.0	98.8	98.7			0.287
	Thallium	94.9		96.8	95.0	96.0			1.90
EPA 300.0 Rev. 2.1	Chloride	106		105	102			1.03	
	Sulfate	106		107				1.27	
EPA 350.1 Rev. 2.0	Ammonia-N	101		101	93.4				6.04
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		104	99.5				3.66
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5		94.8	95.8				0.917
EPA 365.1 Rev. 2.0	Total-P	101		98.2	103				3.48
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.4		97.7	99.5				1.83
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		LCS	Precision	MS
							SMP	
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	75.9		94.4	96.9			2.59
	Acesulfame K	87.5		103	129			22.4
	Acetaminophen	111		103	90.8			12.8
	AMPA	89.7		78.4	83.1			5.79
	Bentazon	129		78.8	75.9			3.26
	Carbamazepine	111		102	92.4			9.88
	Diuron	120		92.1	86.4			6.16
	Endothall	85.7		84.4	94.8			11.7
	Fenuron	127		127	128			0.378
	Fluridone	127		135	107			19.7
	Glufosinate	91.4		68.3	58.8			15.0
	Glyphosate	79.4		74.3	70.7			4.87
	Hydrocodone	98.2		94.9	95.5			0.577
	Ibuprofen	76.0		78.9	64.6			19.9
	Imazapyr	99.5		65.2	55.8			10.1
	Imidacloprid	102		183	169			6.91
	Linuron	103		87.4	86.8			0.770
	MCPP	82.2		124	110			11.7
	Naproxen	87.3		75.2	85.0			12.1
	Primidone	119		114	102			11.2
SM 2120 B SM 2320 B-97 SM 2540 C-97 SM 4500 F-C-97 SM 5310 B-00	Pyraclostrobin	82.3		79.7	67.5			16.7
	Sucralose	54.7		12.2	11.8			2.41
	Triclopyr	53.8		85.9	70.6			19.6
	Color (true)	101					3.42	
	Total Alkalinity	101					0.430	
	TDS						0.601	
	Fluoride	97.8		97.3	97.3			0.0
	Organic Carbon	95.0		96.8	96.9			0.0813

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2070128

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	2070134
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2070134
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2070128
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2070128
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2070129
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2070129
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2070129
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2070129
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2070130
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2070135
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2070133
SM 2120 B / E31780	True Color measured at 450 nm	2070128
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2070128
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2070128
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2070128
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2070128
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2070129

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	03/14/2019			03/14/2019 17:11	Adrian Shelby	2070128
EPA 200.7 Rev. 4.4	03/14/2019	03/19/2019 15:45	Elliott D. Healy	03/20/2019 19:00	Vijayalakshmi Reddy	2070134
EPA 200.8 Rev. 5.4	03/14/2019	03/19/2019 15:45	Elliott D. Healy	03/21/2019 22:06	Robert K Palmer	2070134
	03/14/2019	03/19/2019 15:45	Elliott D. Healy	03/22/2019 16:21	Robert K Palmer	2070134
	03/14/2019	03/19/2019 15:45	Elliott D. Healy	03/25/2019 17:22	Robert K Palmer	2070134
EPA 300.0 Rev. 2.1	03/14/2019			03/22/2019 05:21	Lipi Saha	2070128
EPA 350.1 Rev. 2.0	03/14/2019			03/19/2019 12:06	Ping Hua	2070129
EPA 351.2 Rev. 2.0	03/14/2019	03/21/2019 11:45	Adrian Shelby	03/22/2019 10:19	Joseph Suarez	2070129
EPA 353.2 Rev. 2.0	03/14/2019			03/20/2019 14:16	Lauren Lees	2070129
EPA 365.1 Rev. 2.0	03/14/2019	03/19/2019 13:40	Sima Feizi	03/20/2019 11:04	Beverly Y. Sanders	2070129
EPA 365.1 Rev. 2.0 dissolved	03/14/2019			03/14/2019 17:08	Jhamieka S. Greenwood	2070130
EPA 8270D	03/14/2019	03/18/2019 09:08	Dinesh Mishra	03/20/2019 20:11	Vandana T. Nagar	2070135
	03/14/2019	03/18/2019 09:08	Dinesh Mishra	03/21/2019 18:39	Vandana T. Nagar	2070135
EPA 8321B	03/14/2019	03/18/2019 12:00	Hoor Shaik	03/18/2019 21:02	Juyoung Kim	2070133
	03/14/2019	03/18/2019 12:00	Hoor Shaik	03/19/2019 16:16	Juyoung Kim	2070133
	03/14/2019	03/19/2019 10:00	Hoor Shaik	03/26/2019 10:34	Juyoung Kim	2070133
SM 2120 B	03/14/2019			03/14/2019 17:34	Chelsea Hernandez	2070128
SM 2320 B-97	03/14/2019			03/26/2019 18:50	Dale L. Simmons	2070128
SM 2540 C-97	03/14/2019			03/18/2019 15:10	Mariam Hanna	2070128
SM 2540 D-97	03/14/2019			03/18/2019 14:45	Mariam Hanna	2070128
SM 4500 F-C-97	03/14/2019			03/25/2019 04:41	Dale L. Simmons	2070128
SM 5310 B-00	03/14/2019			03/21/2019 10:45	Julia Storbeck	2070129