

Chemical Analysis Report

TLH-ROC-2019-04-23-01

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

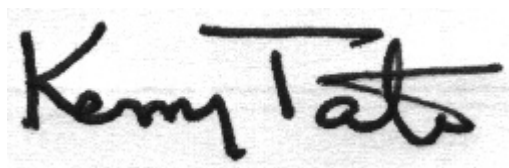
Event Description: **SCI Kits**
Request ID: **RQ-2019-02-18-31**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 15-MAY-2019 11:36

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: KENNEDY CREEK @ SR379

Collection Date/Time: 04/23/2019 11:00

Field ID: G2TLHR0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080207	EPA 180.1 Rev. 2.0	Turbidity	6.8		NTU	P362740	
	EPA 300.0 Rev. 2.1	Chloride	3.1		mg Cl/L	P362963	
		Sulfate	0.23	I	mg SO4/L	P362967	
	SM 2120 B	Color (true)	360		PCU	P362702	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P363244	
	SM 2540 C-97	TDS	45	A	mg/L	P363468	
	SM 2540 D-97	TSS	4	IA	mg/L	P363411	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P363250	
2080208	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P363033	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.76		mg N/L	P362992	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P363077	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P362935	
	SM 5310 B-00	Organic Carbon	19		mg C/L	P362922	
2080209	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P362735	
2080213	EPA 8321B	2,4-D	0.0020	U	ug/L	P362672	
		Acesulfame K**	0.10	U	ug/L	P362741	
		AMPA**	0.10	U	ug/L	P362741	
		Sucralose**	0.010	U	ug/L	P362741	
		Acetaminophen**	0.0080	U	ug/L	P362672	
		Endothall**	0.25	U	ug/L	P362741	
		Glufosinate**	0.10	U	ug/L	P362741	
		Bentazon	8.0E-04	U	ug/L	P362672	
		Glyphosate**	0.10	U	ug/L	P362741	
		Carbamazepine**	8.0E-04	U	ug/L	P362672	
		Diuron	0.0020	U	ug/L	P362672	
		Fenuron	0.016	U	ug/L	P362672	
		Fluridone**	8.0E-04	U	ug/L	P362672	
		Imazapyr**	0.0040	U	ug/L	P362672	
		Hydrocodone**	0.0020	U	ug/L	P362672	
		Ibuprofen**	0.020	U	ug/L	P362672	
		Imidacloprid	0.0020	U	ug/L	P362672	MS
		Linuron	0.0040	U	ug/L	P362672	
		MCPP	0.0020	U	ug/L	P362672	
		Naproxen**	0.0080	U	ug/L	P362672	
		Primidone**	0.0040	U	ug/L	P362672	
		Pyraclostrobin**	0.0020	U	ug/L	P362672	
		Triclopyr**	0.0040	U	ug/L	P362672	
2080214	EPA 200.7 Rev. 4.4	Barium	10.9		ug/L	P362689	
		Calcium	2.13		mg/L	P362689	
		Iron	720		ug/L	P362689	
		Magnesium	0.38		mg/L	P362689	
		Potassium	0.30	U	mg/L	P362689	
		Sodium	1.9	I	mg/L	P362689	

Field ID: G2TLHR0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080214	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P362689	
		Aluminum	401		ug/L	P362689	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P362689	
		Arsenic	0.16	I	ug/L	P362689	
		Boron**	8.1		ug/L	P362689	
		Cadmium	0.020	U	ug/L	P362689	
		Chromium	0.52	I	ug/L	P362689	
		Copper	0.40	U	ug/L	P362689	
		Lead	0.48		ug/L	P362689	
		Nickel	0.50	U	ug/L	P362689	
		Selenium	0.20	U	ug/L	P362689	
		Silver	0.010	U	ug/L	P362689	
		Thallium	0.10	U	ug/L	P362689	
2080215	EPA 8270D	Acetochlor	0.25	U	ng/L	P362885	
		Alachlor	0.25	U	ng/L	P362885	
		Ametryn	0.61	U	ng/L	P362885	
		Atrazine	0.54	I	ng/L	P362885	
		Atrazine Desethyl	1.5	U	ng/L	P362885	
		Azinphos Methyl	5.1	U	ng/L	P362885	
		Bromacil	0.51	U	ng/L	P362885	
		Butylate	0.40	U	ng/L	P362885	RPD
		Chlorpyrifos Ethyl	0.25	U	ng/L	P362885	
		Chlorpyrifos Methyl	0.10	U	ng/L	P362885	
		Cyanazine	3.3	U	ng/L	P362885	
		Demeton	7.1	U	ng/L	P362885	
		Diazinon	0.13	U	ng/L	P362885	
		Dimethenamid**	0.10	U	ng/L	P362885	
		Disulfoton	0.51	U	ng/L	P362885	
		Dithiopyr**	0.10	U	ng/L	P362885	
		EPTC	1.3	U	ng/L	P362885	
		Ethion	0.15	U	ng/L	P362885	
		Ethoprop	0.10	U	ng/L	P362885	
		Fenamiphos	0.51	UJ	ng/L	P362885	LCS, RPD
		Fipronil	0.25	U	ng/L	P362885	
		Fipronil Desulfinyl**	0.13	U	ng/L	P362885	
		Fipronil Sulfide	0.15	U	ng/L	P362885	
		Fipronil Sulfone	0.15	U	ng/L	P362885	
		Fonofos	0.20	U	ng/L	P362885	
		Hexazinone	4.2	J	ng/L	P362885	LCS, RPD
		Malathion	0.35	U	ng/L	P362885	
		Metalaxyl	0.30	UJ	ng/L	P362885	LCS
		Metolachlor	0.51	U	ng/L	P362885	
		Metribuzin	0.76	UJ	ng/L	P362885	CCV
		Mevinphos	0.51	U	ng/L	P362885	
		Molinate	0.30	UJ	ng/L	P362885	LCS

Field ID: G2TLHR0045

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2080215	EPA 8270D	Norflurazon	0.51	U	ng/L	P362885	
		Oxadiazon**	0.10	U	ng/L	P362885	
		Parathion Ethyl	0.25	U	ng/L	P362885	
		Parathion Methyl	0.56	U	ng/L	P362885	
		Pendimethalin	1.0	U	ng/L	P362885	
		Phorate	0.25	U	ng/L	P362885	
		Prodiamine**	0.18	U	ng/L	P362885	
		Prometon	0.91	U	ng/L	P362885	
		Prometryn	0.20	U	ng/L	P362885	
		Simazine	0.51	U	ng/L	P362885	
		Tebuconazole**	0.51	U	ng/L	P362885	
		Terbufos	0.10	U	ng/L	P362885	
		Terbutylazine	0.43	U	ng/L	P362885	

Ref. Method and Comment:

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

EPA 8270D: MS accuracy for hexazinone not assessed due to high content of this parameter 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: P362740

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362689

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: P362689

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: P362963

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363033

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: P362992

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P363077

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P362935

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P362735

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

Reference Method: EPA 8270D
Batch ID: P362885

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: P362885

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: P362672

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: P362741

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: P362702

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P363244

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

Reference Method: SM 2540 C-97
Batch ID: P363468

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P363411

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P362922

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: P362689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	96.5		P	85 - 115
Calcium	98.3		P	85 - 115
Iron	106		P	85 - 115
Magnesium	99.6		P	85 - 115
Potassium	104		P	85 - 115
Sodium	96.4		P	85 - 115
Zinc	99.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362689

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.7		P	85 - 115
Antimony	97.4		P	85 - 115
Arsenic	100		P	85 - 115
Boron	99.4		P	85 - 115
Cadmium	97.1		P	85 - 115
Chromium	92.2		P	85 - 115
Copper	98.3		P	85 - 115
Lead	93.2		P	85 - 115
Nickel	98.8		P	85 - 115
Selenium	102		P	85 - 115
Silver	101		P	85 - 115
Thallium	99.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363033

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: P362992

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P363077

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362935

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: P362735

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

Reference Method: EPA 8270D
 Batch ID: P362885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	112	103	P/P	71 - 121
Alachlor	110	102	P/P	72 - 119
Ametryn	107	95.6	P/P	47 - 144
Atrazine	106	107	P/P	75 - 123
Atrazine Desethyl	63.6	68.1	P/P	45 - 133
Azinphos Methyl	105	97.5	P/P	66 - 165
Bromacil	67.2	60.9	P/P	43 - 123
Butylate	69.4	70.3	P/P	27 - 83.0
Chlorpyrifos Ethyl	106	97.0	P/P	70 - 117
Chlorpyrifos Methyl	97.8	91.1	P/P	71 - 120
Cyanazine	85.2	87.0	P/P	34 - 264
Demeton	61.6	74.1	P/P	41 - 122
Diazinon	109	101	P/P	70 - 127
Dimethenamid	112	104	P/P	66 - 123
Disulfoton	73.1	80.9	P/P	56 - 127
Dithiopyr	114	104	P/P	67 - 125
EPTC	73.0	73.7	P/P	24 - 84.0
Ethion	109	101	P/P	53 - 132
Ethoprop	82.3	75.6	P/P	57 - 117
Fenamiphos	41.7	69.9	F/P	55 - 136
Fipronil	111	103	P/P	64 - 126
Fipronil Desulfinyl	103	96.7	P/P	47 - 114
Fipronil Sulfide	107	96.5	P/P	57 - 120
Fipronil Sulfone	107	98.1	P/P	52 - 115
Fonofos	97.9	89.9	P/P	61 - 121
Hexazinone	141	103	F/P	62 - 131
Malathion	106	97.4	P/P	67 - 126
Metalaxyl	49.8	40.3	F/F	54 - 128
Metolachlor	110	102	P/P	71 - 118
Metribuzin	79.4	88.3	P/P	42 - 221
Mevinphos	81.2	79.3	P/P	45 - 114
Molinate	83.7	91.2	P/F	33 - 91.0
Norflurazon	102	101	P/P	60 - 123
Oxadiazon	113	102	P/P	66 - 121

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P362885

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	88.5	92.8	P/P	73 - 111
Parathion Methyl	90.9	93.7	P/P	74 - 126
Pendimethalin	102	101	P/P	63 - 131
Phorate	71.1	84.0	P/P	54 - 115
Prodiamine	118	110	P/P	38 - 140
Prometon	94.4	90.3	P/P	61 - 120
Prometryn	103	93.5	P/P	62 - 126
Simazine	108	108	P/P	75 - 126
Tebuconazole	62.8	60.2	P/P	21 - 115
Terbufos	88.3	93.1	P/P	65 - 116
Terbuthylazine	106	101	P/P	73 - 117

Reference Method: EPA 8321B

Batch ID: P362672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	74.3		P	40 - 150
Acetaminophen	94.9		P	30 - 150
Bentazon	87.5		P	30 - 150
Carbamazepine	98.4		P	40 - 150
Diuron	88.9		P	40 - 150
Fenuron	114		P	40 - 150
Fluridone	107		P	40 - 150
Hydrocodone	107		P	40 - 150
Ibuprofen	64.7		P	40 - 150
Imazapyr	103		P	40 - 150
Imidacloprid	106		P	40 - 150
Linuron	78.2		P	40 - 150
MCPP	81.4		P	40 - 150
Naproxen	80.1		P	40 - 150
Primidone	63.3		P	40 - 150
Pyraclostrobin	69.5		P	40 - 150
Triclopyr	51.5		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P362741

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	131		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	125		P	40 - 150
Glyphosate	121		P	40 - 140
Sucralose	95.3		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P362702

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: P363244

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

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P362922

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P362689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080176	Barium	92.8	94.1	P/P	80 - 120
2080176	Calcium	98.2		P	80 - 120
2080176	Iron	103	106	P/P	80 - 120
2080176	Magnesium	99.7		P	80 - 120
2080176	Potassium	95.8	97.4	P/P	80 - 120
2080176	Sodium	94.1		P	80 - 120
2080176	Zinc	97.3	98.7	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P362689

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080176	Aluminum	98.1	97.0	P/P	80 - 120
2080176	Antimony	98.4	98.7	P/P	80 - 120
2080176	Arsenic	99.9	99.6	P/P	80 - 120
2080176	Boron	102	103	P/P	80 - 120
2080176	Cadmium	99.1	97.9	P/P	80 - 120
2080176	Chromium	92.5	91.6	P/P	80 - 120
2080176	Copper	95.0	95.0	P/P	80 - 120
2080176	Lead	94.1	94.9	P/P	80 - 120
2080176	Nickel	96.4	95.4	P/P	80 - 120
2080176	Selenium	98.4	97.5	P/P	80 - 120
2080176	Silver	99.6	97.8	P/P	80 - 120
2080176	Thallium	103	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080178	Chloride	103		P	90 - 110
2080307	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P362967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080178	Sulfate	104		P	90 - 110
2080307	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P363033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080237	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P362992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080173	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P363077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080131	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362935

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080266	Total-P	98.0	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P362735

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080057	O-Phosphate-P	97.2	98.3	P/P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P362885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080488	Acetochlor	103	89.2	P/P	63 - 129
2080488	Alachlor	101	91.0	P/P	65 - 127
2080488	Ametryn	109	95.8	P/P	40 - 164
2080488	Atrazine	101	92.0	P/P	66 - 135
2080488	Atrazine Desethyl	77.6	77.2	P/P	14 - 157
2080488	Azinphos Methyl	99.5	82.7	P/P	49 - 180
2080488	Bromacil	99.9	88.1	P/P	48 - 130
2080488	Butylate	49.4	25.9	P/P	10 - 94.0
2080488	Chlorpyrifos Ethyl	103	92.4	P/P	58 - 123
2080488	Chlorpyrifos Methyl	92.0	81.7	P/P	58 - 125
2080488	Cyanazine	104	110	P/P	24 - 253
2080488	Demeton	71.7	57.0	P/P	25 - 149
2080488	Diazinon	104	86.8	P/P	59 - 144
2080488	Dimethenamid	103	92.2	P/P	46 - 139
2080488	Disulfoton	76.0	62.3	P/P	54 - 132
2080488	Dithiopyr	106	93.3	P/P	64 - 130
2080488	EPTC	75.9	56.9	P/P	10 - 92.0
2080488	Ethion	103	96.6	P/P	30 - 148
2080488	Ethoprop	71.6	77.1	P/P	50 - 130
2080488	Fenamiphos	79.8	82.5	P/P	49 - 142
2080488	Fipronil	105	93.4	P/P	46 - 140
2080488	Fipronil Desulfinyl	101	85.9	P/P	30 - 121
2080488	Fipronil Sulfide	101	92.2	P/P	31 - 136
2080488	Fipronil Sulfone	102	91.6	P/P	16 - 136
2080488	Fonofos	92.1	79.4	P/P	55 - 129
2080488	Malathion	102	91.0	P/P	56 - 135
2080488	Metalaxyl	88.9	76.2	P/P	54 - 135
2080488	Metolachlor	98.5	90.1	P/P	51 - 140
2080488	Metribuzin	125	103	P/P	45 - 254
2080488	Mevinphos	91.5	72.7	P/P	33 - 131
2080488	Molinate	82.7	72.6	P/P	14 - 98.0
2080488	Norflurazon	101	91.3	P/P	34 - 136
2080488	Oxadiazon	104	94.7	P/P	67 - 116
2080488	Parathion Ethyl	90.9	84.5	P/P	66 - 118

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P362885

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080488	Parathion Methyl	92.5	83.2	P/P	64 - 136
2080488	Pendimethalin	106	94.7	P/P	59 - 144
2080488	Phorate	87.2	68.4	P/P	42 - 130
2080488	Prodiamine	124	112	P/P	42 - 148
2080488	Prometon	98.3	89.8	P/P	59 - 134
2080488	Prometryn	102	92.0	P/P	54 - 135
2080488	Simazine	104	87.3	P/P	53 - 156
2080488	Tebuconazole	63.3	59.8	P/P	10 - 131
2080488	Terbufos	95.8	78.4	P/P	57 - 131
2080488	Terbutylazine	103	91.7	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P362672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2079939	2,4-D	73.8	77.8	P/P	40 - 150
2079939	Acetaminophen	102	114	P/P	30 - 150
2079939	Bentazon	69.3	74.6	P/P	30 - 150
2079939	Carbamazepine	92.9	98.8	P/P	40 - 150
2079939	Diuron	68.7	68.0	P/P	40 - 150
2079939	Fenuron	121	142	P/P	40 - 150
2079939	Fluridone	137	147	P/P	40 - 150
2079939	Hydrocodone	94.6	102	P/P	40 - 150
2079939	Ibuprofen	55.1	66.7	P/P	40 - 150
2079939	Imazapyr	75.8	101	P/P	40 - 150
2079939	Imidacloprid	143	155	P/F	40 - 150
2079939	Linuron	61.6	59.2	P/P	40 - 150
2079939	MCPP	75.3	89.0	P/P	40 - 150
2079939	Naproxen	48.7	55.6	P/P	40 - 150
2079939	Primidone	88.5	81.7	P/P	40 - 150
2079939	Pyraclostrobin	75.5	81.7	P/P	40 - 150
2079939	Triclopyr	43.4	46.5	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P362741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080156	Acesulfame K	102	79.1	P/P	40 - 150
2080156	AMPA	61.2	66.5	P/P	40 - 150
2080156	Endothall	87.0	114	P/P	40 - 150
2080156	Glufosinate	95.6	97.2	P/P	40 - 150
2080156	Glyphosate	124	123	P/P	40 - 140
2080156	Sucralose	103	105	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080052	Fluoride	98.9	98.9	P/P	89 - 106

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P362922

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2080237	Organic Carbon	105	109	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P362740

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080179	Turbidity	1.27	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P362689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080176	Barium	1.41	Spike	P	0 - 20
2080176	Calcium	0.594	Spike	P	0 - 20
2080176	Iron	2.97	Spike	P	0 - 20
2080176	Magnesium	2.87	Spike	P	0 - 20
2080176	Potassium	1.05	Spike	P	0 - 20
2080176	Sodium	0.795	Spike	P	0 - 20
2080176	Zinc	1.42	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P362689

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080176	Aluminum	1.14	Spike	P	0 - 20
2080176	Antimony	0.275	Spike	P	0 - 20
2080176	Arsenic	0.266	Spike	P	0 - 20
2080176	Boron	0.630	Spike	P	0 - 20
2080176	Cadmium	1.25	Spike	P	0 - 20
2080176	Chromium	0.988	Spike	P	0 - 20
2080176	Copper	0.0130	Spike	P	0 - 20
2080176	Lead	0.809	Spike	P	0 - 20
2080176	Nickel	1.02	Spike	P	0 - 20
2080176	Selenium	0.962	Spike	P	0 - 20
2080176	Silver	1.75	Spike	P	0 - 20
2080176	Thallium	1.90	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P362963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080307	Chloride	1.59	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P362967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080307	Sulfate	1.92	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P363033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080237	Ammonia-N	0.0483	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P362992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080173	Kjeldahl Nitrogen	0.440	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P363077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080131	NO2NO3-N	0.404	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P362935

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080266	Total-P	5.38	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P362735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080057	O-Phosphate-P	1.13	Spike	P	0 - 20

Reference Method: EPA 8270D
 Batch ID: P362885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080488	Acetochlor	14.5	Spike	P	0 - 30
2080488	Alachlor	10.9	Spike	P	0 - 30
2080488	Ametryn	12.4	Spike	P	0 - 30
2080488	Atrazine	9.58	Spike	P	0 - 30
2080488	Atrazine Desethyl	0.592	Spike	P	0 - 30
2080488	Azinphos Methyl	18.4	Spike	P	0 - 30
2080488	Bromacil	12.5	Spike	P	0 - 30
2080488	Butylate	38.4	Spike	F	0 - 30
2080488	Chlorpyrifos Ethyl	10.5	Spike	P	0 - 30
2080488	Chlorpyrifos Methyl	11.8	Spike	P	0 - 30
2080488	Cyanazine	6.07	Spike	P	0 - 30
2080488	Demeton	22.8	Spike	P	0 - 30
2080488	Diazinon	18.0	Spike	P	0 - 30
2080488	Dimethenamid	10.9	Spike	P	0 - 30
2080488	Disulfoton	19.8	Spike	P	0 - 30
2080488	Dithiopyr	13.0	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P362885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080488	EPTC	28.6	Spike	P	0 - 30
2080488	Ethion	6.46	Spike	P	0 - 30
2080488	Ethoprop	7.40	Spike	P	0 - 30
2080488	Fenamiphos	3.36	Spike	P	0 - 30
2080488	Fipronil	11.6	Spike	P	0 - 30
2080488	Fipronil Desulfinyl	15.7	Spike	P	0 - 30
2080488	Fipronil Sulfide	9.30	Spike	P	0 - 30
2080488	Fipronil Sulfone	10.9	Spike	P	0 - 30
2080488	Fonofos	14.8	Spike	P	0 - 30
2080488	Hexazinone	19.9	Spike	P	0 - 30
2080488	Malathion	11.3	Spike	P	0 - 30
2080488	Metaxyl	15.3	Spike	P	0 - 30
2080488	Metolachlor	8.85	Spike	P	0 - 30
2080488	Metribuzin	19.3	Spike	P	0 - 30
2080488	Mevinphos	22.9	Spike	P	0 - 30
2080488	Molinate	13.0	Spike	P	0 - 30
2080488	Norflurazon	9.98	Spike	P	0 - 30
2080488	Oxadiazon	8.90	Spike	P	0 - 30
2080488	Parathion Ethyl	7.26	Spike	P	0 - 30
2080488	Parathion Methyl	10.5	Spike	P	0 - 30
2080488	Pendimethalin	11.4	Spike	P	0 - 30
2080488	Phorate	24.2	Spike	P	0 - 30
2080488	Prodiamine	10.8	Spike	P	0 - 30
2080488	Prometon	9.09	Spike	P	0 - 30
2080488	Prometryn	10.0	Spike	P	0 - 30
2080488	Simazine	17.6	Spike	P	0 - 30
2080488	Tebuconazole	5.62	Spike	P	0 - 30
2080488	Terbufos	20.0	Spike	P	0 - 30
2080488	Terbutylazine	12.0	Spike	P	0 - 30
LFB	Acetochlor	8.73	LCS	P	0 - 30
LFB	Alachlor	7.80	LCS	P	0 - 30
LFB	Ametryn	11.7	LCS	P	0 - 30
LFB	Atrazine	0.705	LCS	P	0 - 30
LFB	Atrazine Desethyl	6.77	LCS	P	0 - 30
LFB	Azinphos Methyl	7.10	LCS	P	0 - 30
LFB	Bromacil	9.85	LCS	P	0 - 30
LFB	Butylate	1.27	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	9.19	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	7.06	LCS	P	0 - 30
LFB	Cyanazine	2.08	LCS	P	0 - 30
LFB	Demeton	18.5	LCS	P	0 - 30
LFB	Diazinon	7.57	LCS	P	0 - 30
LFB	Dimethenamid	7.49	LCS	P	0 - 30
LFB	Disulfoton	10.1	LCS	P	0 - 30
LFB	Dithiopyr	9.24	LCS	P	0 - 30
LFB	EPTC	0.842	LCS	P	0 - 30
LFB	Ethion	7.43	LCS	P	0 - 30
LFB	Ethoprop	8.55	LCS	P	0 - 30
LFB	Fenamiphos	50.4	LCS	F	0 - 30
LFB	Fipronil	7.81	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	6.36	LCS	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P362885

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	10.4	LCS	P	0 - 30
LFB	Fipronil Sulfone	8.55	LCS	P	0 - 30
LFB	Fonofos	8.56	LCS	P	0 - 30
LFB	Hexazinone	31.6	LCS	F	0 - 30
LFB	Malathion	8.62	LCS	P	0 - 30
LFB	Metalaxyl	21.2	LCS	P	0 - 30
LFB	Metolachlor	6.96	LCS	P	0 - 30
LFB	Metribuzin	10.7	LCS	P	0 - 30
LFB	Mevinphos	2.38	LCS	P	0 - 30
LFB	Molinate	8.49	LCS	P	0 - 30
LFB	Norflurazon	0.574	LCS	P	0 - 30
LFB	Oxadiazon	10.0	LCS	P	0 - 30
LFB	Parathion Ethyl	4.85	LCS	P	0 - 30
LFB	Parathion Methyl	3.06	LCS	P	0 - 30
LFB	Pendimethalin	0.600	LCS	P	0 - 30
LFB	Phorate	16.6	LCS	P	0 - 30
LFB	Prodiamine	6.59	LCS	P	0 - 30
LFB	Prometon	4.41	LCS	P	0 - 30
LFB	Prometryn	10.1	LCS	P	0 - 30
LFB	Simazine	0.618	LCS	P	0 - 30
LFB	Tebuconazole	4.26	LCS	P	0 - 30
LFB	Terbufos	5.25	LCS	P	0 - 30
LFB	Terbuthylazine	4.94	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P362672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2079939	2,4-D	5.20	Spike	P	0 - 30
2079939	Acetaminophen	11.2	Spike	P	0 - 30
2079939	Bentazon	7.39	Spike	P	0 - 30
2079939	Carbamazepine	6.15	Spike	P	0 - 30
2079939	Diuron	0.993	Spike	P	0 - 30
2079939	Fenuron	16.2	Spike	P	0 - 30
2079939	Fluridone	7.34	Spike	P	0 - 30
2079939	Hydrocodone	7.27	Spike	P	0 - 30
2079939	Ibuprofen	18.0	Spike	P	0 - 30
2079939	Imazapyr	26.6	Spike	P	0 - 30
2079939	Imidacloprid	8.02	Spike	P	0 - 30
2079939	Linuron	3.96	Spike	P	0 - 30
2079939	MCP	16.6	Spike	P	0 - 30
2079939	Naproxen	13.3	Spike	P	0 - 30
2079939	Primidone	7.98	Spike	P	0 - 30
2079939	Pyraclostrobin	7.90	Spike	P	0 - 30
2079939	Triclopyr	7.05	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P362741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080156	Acesulfame K	25.0	Spike	P	0 - 30
2080156	AMPA	2.96	Spike	P	0 - 30
2080156	Endothall	26.8	Spike	P	0 - 30
2080156	Glufosinate	1.60	Spike	P	0 - 30
2080156	Glyphosate	0.186	Spike	P	0 - 30
2080156	Sucralose	2.19	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P362702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080124	Color (true)	1.07	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P363244

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Total Alkalinity	0.476	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P363468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080207	TDS	4.44	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P363250

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080052	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P362922

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2080237	Organic Carbon	2.85	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: 2080213

Field Sample ID: G2TLHR0045

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	71.7	P	30 - 160
EPA 8321B	Acetaminophen-d4	82.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	83.9	P	30 - 160
EPA 8321B	Diuron-d6	64.8	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	103	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.9	P	30 - 160
EPA 8321B	Primidone-d5	66.9	P	30 - 160
EPA 8321B	Sucralose-d6	78.5	P	30 - 160
EPA 8321B	Sucralose-d6	78.5	P	30 - 160

Lab Sample ID: 2080215

Field Sample ID: G2TLHR0045

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	107	P	68 - 130
EPA 8270D	Terbufos-d10	84.1	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B
Run ID: A90941
Included Lab Sample IDs: 2080207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	105	105	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A90950
Included Lab Sample IDs: 2080209

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	97.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A90951
Included Lab Sample IDs: 2080207

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A90983
Included Lab Sample IDs: 2080214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.2	99.4	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	102	103	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	98.6	98.7	P/P	90 - 110
Sodium	99.9	102	P/P	90 - 110
Zinc	101	101	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A90991
Included Lab Sample IDs: 2080213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	99.4	96.6	P/P	60 - 160

Reference Method: SM 5310 B-00
Run ID: A91035
Included Lab Sample IDs: 2080208

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A91050
Included Lab Sample IDs: 2080207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Sulfate	104	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A91070

Included Lab Sample IDs: 2080208

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: A91076

Included Lab Sample IDs: 2080208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	100	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A91087

Included Lab Sample IDs: 2080213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	102	61.1	P/P	60 - 160
Endothall	92.7	94.8	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A91088

Included Lab Sample IDs: 2080208

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

Reference Method: EPA 8321B

Run ID: A91091

Included Lab Sample IDs: 2080213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	82.9	121	P/P	60 - 160
Glufosinate	101	126	P/P	60 - 160
Glyphosate	83.6	120	P/P	60 - 160

Reference Method: EPA 8270D

Run ID: A91095

Included Lab Sample IDs: 2080215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	103		P	80 - 120
Alachlor	104		P	80 - 120
Ametryn	102		P	80 - 120
Atrazine	97.6		P	80 - 120
Atrazine Desethyl	90.6		P	80 - 120
Azinphos Methyl	95.9		P	80 - 120
Bromacil	101		P	80 - 120
Butylate	96.5		P	80 - 120
Chlorpyrifos Ethyl	99.5		P	80 - 120
Chlorpyrifos Methyl	96.9		P	80 - 120
Cyanazine	85.5		P	80 - 120
Demeton	99.4		P	80 - 120
Diazinon	103		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A91095
Included Lab Sample IDs: 2080215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dimethenamid	104		P	80 - 120
Disulfoton	95.5		P	80 - 120
Dithiopyr	106		P	80 - 120
EPTC	99.8		P	80 - 120
Ethion	97.5		P	80 - 120
Ethoprop	93.0		P	80 - 120
Fenamiphos	93.4		P	80 - 120
Fipronil	102		P	80 - 120
Fipronil Desulfinyl	101		P	80 - 120
Fipronil Sulfide	95.0		P	80 - 120
Fipronil Sulfone	96.3		P	80 - 120
Fonofos	97.5		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	94.9		P	80 - 120
Metaxyl	105		P	80 - 120
Metolachlor	108		P	80 - 120
Metribuzin	79.6*		F	80 - 120
Mevinphos	96.6		P	80 - 120
Molinate	99.4		P	80 - 120
Norflurazon	100		P	80 - 120
Oxadiazon	107		P	80 - 120
Parathion Ethyl	97.4		P	80 - 120
Parathion Methyl	97.4		P	80 - 120
Pendimethalin	98.1		P	80 - 120
Phorate	97.8		P	80 - 120
Prodiamine	101		P	80 - 120
Prometon	102		P	80 - 120
Prometryn	102		P	80 - 120
Simazine	96.9		P	80 - 120
Tebuconazole	100		P	80 - 120
Terbufos	96.7		P	80 - 120
Terbutylazine	99.5		P	80 - 120

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A91107
Included Lab Sample IDs: 2080208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A91110
Included Lab Sample IDs: 2080214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.6	99.2	P/P	90 - 110
Antimony	98.6	98.9	P/P	90 - 110
Arsenic	99.3	98.0	P/P	90 - 110
Boron	102	106	P/P	90 - 110
Cadmium	98.8	99.1	P/P	90 - 110
Chromium	99.6	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A91110

Included Lab Sample IDs: 2080214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	99.0	98.4	P/P	90 - 110
Lead	95.6	96.0	P/P	90 - 110
Nickel	99.4	98.0	P/P	90 - 110
Selenium	100	99.0	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	94.8	94.8	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A91158

Included Lab Sample IDs: 2080207

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.5	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A91158

Included Lab Sample IDs: 2080207

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

Reference Method: EPA 8321B

Run ID: A91231

Included Lab Sample IDs: 2080213

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.7	98.4	P/P	50 - 150
Acetaminophen	131	135	P/P	60 - 160
Bentazon	112	103	P/P	50 - 160
Carbamazepine	92.6	113	P/P	60 - 150
Diuron	111	119	P/P	60 - 150
Fenuron	105	107	P/P	60 - 150
Fluridone	82.4	113	P/P	60 - 160
Hydrocodone	101	113	P/P	60 - 150
Ibuprofen	76.0	70.6	P/P	50 - 160
Imazapyr	97.1	109	P/P	50 - 150
Imidacloprid	99.1	112	P/P	60 - 150
Linuron	90.2	79.8	P/P	60 - 150
MCP	94.9	96.3	P/P	50 - 150
Naproxen	63.5	77.5	P/P	50 - 160
Primidone	82.6	118	P/P	60 - 150
Pyraclostrobin	85.8	105	P/P	60 - 150
Triclopyr	95.7	96.9	P/P	50 - 150

* 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						1.27	
EPA 200.7 Rev. 4.4	Barium	96.5		92.8	94.1			1.41
	Calcium	98.3		98.2				0.594
	Iron	106		103	106			2.97
	Magnesium	99.6		99.7				2.87
	Potassium	104		95.8	97.4			1.05
	Sodium	96.4		94.1				0.795
	Zinc	99.0		97.3	98.7			1.42
EPA 200.8 Rev. 5.4	Aluminum	97.7		98.1	97.0			1.14
	Antimony	97.4		98.4	98.7			0.275
	Arsenic	100		99.9	99.6			0.266
	Boron	99.4		102	103			0.630
	Cadmium	97.1		99.1	97.9			1.25
	Chromium	92.2		92.5	91.6			0.988
	Copper	98.3		95.0	95.0			0.0130
	Lead	93.2		94.1	94.9			0.809
	Nickel	98.8		96.4	95.4			1.02
	Selenium	102		98.4	97.5			0.962
	Silver	101		99.6	97.8			1.75
	Thallium	99.2		103	105			1.90
EPA 300.0 Rev. 2.1	Chloride	103		104	103		1.59	
	Sulfate	103		103	104		1.92	
EPA 350.1 Rev. 2.0	Ammonia-N	100		101	101			0.0483
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106		103	104			0.440
EPA 353.2 Rev. 2.0	NO2NO3-N	102		102	102			0.404
EPA 365.1 Rev. 2.0	Total-P	101		98.0	105			5.38
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4		97.2	98.3			1.13
EPA 8270D	Acetochlor	112	103	103	89.2	8.73		14.5
	Alachlor	110	102	101	91.0	7.80		10.9
	Ametryn	107	95.6	109	95.8	11.7		12.4
	Atrazine	107	106	101	92.0	0.705		9.58
	Atrazine Desethyl	68.1	63.6	77.6	77.2	6.77		0.592
	Azinphos Methyl	97.5	105	99.5	82.7	7.10		18.4
	Bromacil	60.9	67.2	99.9	88.1	9.85		12.5
	Butylate	70.3	69.4	49.4	25.9	1.27		38.4
	Chlorpyrifos Ethyl	97.0	106	103	92.4	9.19		10.5
	Chlorpyrifos Methyl	97.8	91.1	92.0	81.7	7.06		11.8
	Cyanazine	85.2	87.0	104	110	2.08		6.07
	Demeton	61.6	74.1	71.7	57.0	18.5		22.8
	Diazinon	109	101	104	86.8	7.57		18.0
	Dimethenamid	112	104	103	92.2	7.49		10.9
	Disulfoton	73.1	80.9	76.0	62.3	10.1		19.8
	Dithiopyr	114	104	106	93.3	9.24		13.0
	EPTC	73.0	73.7	75.9	56.9	0.842		28.6
	Ethion	109	101	103	96.6	7.43		6.46
	Ethoprop	82.3	75.6	71.6	77.1	8.55		7.40
	Fenamiphos	41.7	69.9	79.8	82.5	50.4		3.36
	Fipronil	111	103	105	93.4	7.81		11.6
	Fipronil Desulfinyl	103	96.7	101	85.9	6.36		15.7
	Fipronil Sulfide	107	96.5	101	92.2	10.4		9.30
	Fipronil Sulfone	107	98.1	102	91.6	8.55		10.9
	Fonofos	97.9	89.9	92.1	79.4	8.56		14.8
	Hexazinone	141	103			31.6		19.9
	Malathion	106	97.4	102	91.0	8.62		11.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	49.8	40.3	88.9	76.2	21.2	15.3
	Metolachlor	110	102	98.5	90.1	6.96	8.85
	Metribuzin	79.4	88.3	125	103	10.7	19.3
	Mevinphos	81.2	79.3	91.5	72.7	2.38	22.9
	Molinate	83.7	91.2	82.7	72.6	8.49	13.0
	Norflurazon	102	101	101	91.3	0.574	9.98
	Oxadiazon	113	102	104	94.7	10.0	8.90
	Parathion Ethyl	88.5	92.8	90.9	84.5	4.85	7.26
	Parathion Methyl	93.7	90.9	92.5	83.2	3.06	10.5
	Pendimethalin	101	102	106	94.7	0.600	11.4
	Phorate	84.0	71.1	87.2	68.4	16.6	24.2
	Prodiamine	110	118	124	112	6.59	10.8
	Prometon	90.3	94.4	98.3	89.8	4.41	9.09
	Prometryn	93.5	103	102	92.0	10.1	10.0
	Simazine	108	108	104	87.3	0.618	17.6
	Tebuconazole	60.2	62.8	63.3	59.8	4.26	5.62
	Terbufos	93.1	88.3	95.8	78.4	5.25	20.0
	Terbuthylazine	101	106	103	91.7	4.94	12.0
EPA 8321B	2,4-D	74.3		73.8	77.8		5.20
	Acesulfame K	104		102	79.1		25.0
	Acetaminophen	94.9		102	114		11.2
	AMPA	131		61.2	66.5		2.96
	Bentazon	87.5		69.3	74.6		7.39
	Carbamazepine	98.4		92.9	98.8		6.15
	Diuron	88.9		68.7	68.0		0.993
	Endothall	107		87.0	114		26.8
	Fenuron	114		121	142		16.2
	Fluridone	107		137	147		7.34
	Glufosinate	125		95.6	97.2		1.60
	Glyphosate	121		124	123		0.186
	Hydrocodone	107		94.6	102		7.27
	Ibuprofen	64.7		55.1	66.7		18.0
	Imazapyr	103		75.8	101		26.6
	Imidacloprid	106		143	155		8.02
	Linuron	78.2		61.6	59.2		3.96
	MCPP	81.4		75.3	89.0		16.6
	Naproxen	80.1		48.7	55.6		13.3
	Primidone	63.3		88.5	81.7		7.98
	Pyraclostrobin	69.5		75.5	81.7		7.90
	Sucralose	95.3		103	105		2.19
	Triclopyr	51.5		43.4	46.5		7.05
SM 2120 B	Color (true)	104				1.07	
SM 2320 B-97	Total Alkalinity	101				0.476	
SM 2540 C-97	TDS					4.44	
SM 4500 F-C-97	Fluoride	97.2		98.9	98.9		0.0
SM 5310 B-00	Organic Carbon	103		105	109		2.85

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2080207

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	2080214
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2080214
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2080207
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2080207
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2080208
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2080208
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2080208
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2080208
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2080209
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2080215
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2080213
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2080213
SM 2120 B / E31780	True Color measured at 450 nm	2080207
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2080207
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2080207
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2080207
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2080207
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2080208

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	04/23/2019			04/23/2019 17:05	Adrian Shelby	2080207
EPA 200.7 Rev. 4.4	04/23/2019	04/23/2019 17:25	Elliott D. Healy	04/24/2019 20:03	Betina Topolski	2080214
EPA 200.8 Rev. 5.4	04/23/2019	04/23/2019 17:25	Elliott D. Healy	04/30/2019 17:12	Robert K Palmer	2080214
EPA 300.0 Rev. 2.1	04/23/2019			04/27/2019 03:25	Lipi Saha	2080207
EPA 350.1 Rev. 2.0	04/23/2019			04/26/2019 13:12	Ping Hua	2080208
EPA 351.2 Rev. 2.0	04/23/2019	04/29/2019 13:15	Adrian Shelby	04/30/2019 15:19	Joseph Suarez	2080208
EPA 353.2 Rev. 2.0	04/23/2019			04/30/2019 10:21	Beverly Y. Sanders	2080208
EPA 365.1 Rev. 2.0	04/23/2019	04/26/2019 14:10	Sima Feizi	04/29/2019 15:31	Rosalyn Ballman	2080208
EPA 365.1 Rev. 2.0 dissolved	04/23/2019			04/23/2019 16:30	Jhamieka S. Greenwood	2080209
EPA 8270D	04/23/2019	04/26/2019 08:30	Rasheda Ghaffari	04/29/2019 23:39	Vandana T. Nagar	2080215
EPA 8321B	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/25/2019 09:00	Rebecca Ware	2080213
	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 15:01	Rebecca Ware	2080213
	04/23/2019	04/24/2019 14:45	Rebecca Ware	04/26/2019 19:30	Rebecca Ware	2080213
	04/23/2019	04/29/2019 10:00	Hoor Shaik	05/02/2019 12:44	Juyoung Kim	2080213
SM 2120 B	04/23/2019			04/23/2019 16:33	Mariam Hanna	2080207
SM 2320 B-97	04/23/2019			05/02/2019 00:38	Dale L. Simmons	2080207
SM 2540 C-97	04/23/2019			04/26/2019 14:16	Yijie Li	2080207
SM 2540 D-97	04/23/2019			04/26/2019 14:16	Yijie Li	2080207
SM 4500 F-C-97	04/23/2019			05/02/2019 00:38	Dale L. Simmons	2080207
SM 5310 B-00	04/23/2019			04/26/2019 05:11	Julia Storbeck	2080208