

Chemical Analysis Report

CEN-DIST-2019-03-01-01

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

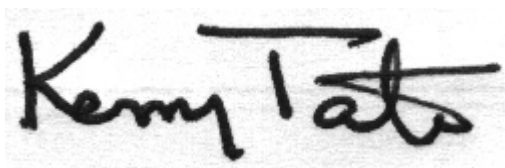
Event Description: **Tiger Creek + SCI**
Request ID: **RQ-2019-02-25-37**
Customer: **CEN-DIST**
Project ID: **SMP**

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

Date Certified: 21-MAR-2019 11:10

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: HOWELL CREEK @ US OF LAKE HOWELL LN Collection Date/Time: 02/28/2019 11:51

Field ID: G2CE0138

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066545	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P359780	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P360554	
		Sulfate	16		mg SO4/L	P360558	
	SM 2120 B	Color (true)	24	A	PCU	P359788	
	SM 2320 B-97	Total Alkalinity	52		mg CaCO3/L	P360181	
	SM 2540 C-97	TDS	119		mg/L	P360132	
	SM 2540 D-97	TSS	2	I	mg/L	P360070	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P360184	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.094		mg N/L	P360139	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P360065	
2066546	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P360104	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P359906	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P360398	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P359786	
	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P359705	
2066550		2,4-D	0.018		ug/L	P359745	
		AMPA**	0.19	IJ	ug/L	P359705	CCV, RPD
		Sucralose**	0.27		ug/L	P359705	
		Endothall**	0.25	U	ug/L	P359705	
		Acetaminophen**	0.0080	U	ug/L	P359745	
		Glufosinate**	0.10	U	ug/L	P359705	
		Glyphosate**	0.22	I	ug/L	P359705	
		Bentazon	0.074		ug/L	P359745	
		Carbamazepine**	8.0E-04	U	ug/L	P359745	
		Diuron	0.0028	IV	ug/L	P359745	
		Fenuron	0.016	U	ug/L	P359745	
		Fluridone**	0.019		ug/L	P359745	
		Imazapyr**	0.011	I	ug/L	P359745	
		Hydrocodone**	0.0020	U	ug/L	P359745	
		Ibuprofen**	0.020	U	ug/L	P359745	
		Imidacloprid	0.0038	I	ug/L	P359745	MS
		Linuron	0.0040	U	ug/L	P359745	
		MCPP	0.0020	U	ug/L	P359745	
		Naproxen**	0.0080	U	ug/L	P359745	
		Primidone**	0.0040	U	ug/L	P359745	
		Pyraclostrobin**	0.0020	U	ug/L	P359745	
		Triclopyr**	0.0040	U	ug/L	P359745	RPD
2066551	EPA 200.7 Rev. 4.4	Barium	11.2		ug/L	P360028	
		Calcium	24.4		mg/L	P360028	
		Iron	67	I	ug/L	P360028	
		Magnesium	3.53		mg/L	P360028	
		Potassium	1.9		mg/L	P360028	
		Sodium	14.6		mg/L	P360028	

Field ID: G2CE0138

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066551	EPA 200.7 Rev. 4.4	Zinc	5.0	U	ug/L	P360028	
		Aluminum	32		ug/L	P360028	
	EPA 200.8 Rev. 5.4	Antimony	0.26		ug/L	P360028	
		Arsenic	1.87		ug/L	P360028	
		Boron**	37.4		ug/L	P360028	
		Cadmium	0.020	U	ug/L	P360028	
		Chromium	0.40	U	ug/L	P360028	
		Copper	0.82		ug/L	P360028	
		Lead	0.20	U	ug/L	P360028	
		Nickel	0.50	U	ug/L	P360028	
		Selenium	0.20	U	ug/L	P360028	
		Silver	0.010	U	ug/L	P360028	
		Thallium	0.10	U	ug/L	P360028	
2066552	EPA 8270D	Acetochlor	0.25	U	ng/L	P359947	
		Alachlor	0.25	U	ng/L	P359947	
		Ametryn	0.61	U	ng/L	P359947	
		Atrazine	110		ng/L	P359947	
		Atrazine Desethyl	9.6		ng/L	P359947	
		Azinphos Methyl	5.1	U	ng/L	P359947	
		Bromacil	0.51	UJ	ng/L	P359947	RPD
		Butylate	0.40	UJ	ng/L	P359947	LCS
		Chlorpyrifos Ethyl	0.25	U	ng/L	P359947	
		Chlorpyrifos Methyl	0.10	U	ng/L	P359947	
		Cyanazine	3.3	U	ng/L	P359947	
		Demeton	7.1	U	ng/L	P359947	
		Diazinon	0.13	U	ng/L	P359947	
		Dimethenamid**	0.10	U	ng/L	P359947	
		Disulfoton	0.51	U	ng/L	P359947	
		Dithiopyr**	0.28	I	ng/L	P359947	
		EPTC	1.3	U	ng/L	P359947	RPD
		Ethion	0.15	U	ng/L	P359947	
		Ethoprop	0.10	U	ng/L	P359947	
		Fenamiphos	0.51	U	ng/L	P359947	
		Fipronil	0.42	I	ng/L	P359947	
		Fipronil Desulfinyl**	0.48	I	ng/L	P359947	
		Fipronil Sulfide	0.31	I	ng/L	P359947	
		Fipronil Sulfone	0.99		ng/L	P359947	
		Fonofos	0.20	U	ng/L	P359947	
		Hexazinone	0.51	U	ng/L	P359947	
		Malathion	0.49	I	ng/L	P359947	
		Metalaxyl	0.59	I	ng/L	P359947	
		Metolachlor	0.61	I	ng/L	P359947	
		Metribuzin	0.76	UJ	ng/L	P359947	RPD
		Mevinphos	0.51	U	ng/L	P359947	
		Molinate	0.30	U	ng/L	P359947	

Field ID: G2CE0138

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2066552	EPA 8270D	Norflurazon	0.51	U	ng/L	P359947	
		Oxadiazon**	0.55		ng/L	P359947	
		Parathion Ethyl	0.25	U	ng/L	P359947	
		Parathion Methyl	0.56	U	ng/L	P359947	
		Pendimethalin	2.1	I	ng/L	P359947	
		Phorate	0.25	U	ng/L	P359947	
		Prodiamine**	0.18	U	ng/L	P359947	
		Prometon	0.91	U	ng/L	P359947	
		Prometryn	0.20	U	ng/L	P359947	
		Simazine	2.0		ng/L	P359947	
		Tebuconazole**	2.1	J	ng/L	P359947	RPD
		Terbufos	0.10	U	ng/L	P359947	
		Terbutylazine	0.43	U	ng/L	P359947	

Ref. Method and Comment:

EPA 180.1 Rev. 2.0: The batch relative percent difference is unavailable because of low amount of analyte 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.

EPA 8321B: V - Due to detect in the extraction blank.

EPA 8270D: 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: P359780

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360028

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: P360028

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: P360554

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360558

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360139

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: P360065

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360104

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359906

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359786

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

Reference Method: EPA 8270D
Batch ID: P359947

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: P359947

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: P359705

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: P359745

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	0.0069	I	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
MCP	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: P359788

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P360181

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

Reference Method: SM 2540 C-97
Batch ID: P360132

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P360070

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P360184

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P360398

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: P360028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	104		P	85 - 115
Calcium	102		P	85 - 115
Iron	104		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	99.5		P	85 - 115
Sodium	107		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360028

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	99.0		P	85 - 115
Arsenic	103		P	85 - 115
Boron	102		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	101		P	85 - 115
Copper	102		P	85 - 115
Lead	102		P	85 - 115
Nickel	100		P	85 - 115
Selenium	100		P	85 - 115
Silver	99.5		P	85 - 115
Thallium	93.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360554

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360558

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360139

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: P360065

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: P360104

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: P359906

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359786

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

Reference Method: EPA 8270D
 Batch ID: P359947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	112	109	P/P	71 - 121
Alachlor	109	96.4	P/P	72 - 119
Ametryn	112	110	P/P	47 - 144
Atrazine	103	101	P/P	75 - 123
Atrazine Desethyl	98.8	89.1	P/P	45 - 133
Azinphos Methyl	96.2	110	P/P	66 - 165
Bromacil	108	55.0	P/P	43 - 123
Butylate	84.6	65.3	F/P	27 - 83.0
Chlorpyrifos Ethyl	93.8	95.0	P/P	70 - 117
Chlorpyrifos Methyl	84.6	94.8	P/P	71 - 120
Cyanazine	99.0	94.0	P/P	34 - 264
Demeton	80.6	86.5	P/P	41 - 122
Diazinon	110	98.6	P/P	70 - 127
Dimethenamid	112	101	P/P	60 - 130
Disulfoton	87.8	94.8	P/P	56 - 127
Dithiopyr	110	97.0	P/P	60 - 130
EPTC	81.0	72.2	P/P	24 - 84.0
Ethion	103	77.8	P/P	53 - 132
Ethoprop	104	90.7	P/P	57 - 117
Fenamiphos	94.6	86.1	P/P	55 - 136
Fipronil	108	84.0	P/P	64 - 126
Fipronil Desulfinyl	99.4	88.7	P/P	60 - 130
Fipronil Sulfide	102	82.0	P/P	57 - 120
Fipronil Sulfone	104	82.7	P/P	52 - 115
Fonofos	87.6	93.1	P/P	61 - 121
Hexazinone	130	96.6	P/P	62 - 131
Malathion	98.5	97.9	P/P	67 - 126
Metalaxyl	111	98.0	P/P	54 - 128
Metolachlor	112	103	P/P	71 - 118
Metribuzin	86.2	145	P/P	42 - 221
Mevinphos	94.7	88.9	P/P	45 - 114
Molinate	84.4	76.6	P/P	33 - 91.0
Norflurazon	105	85.6	P/P	60 - 123
Oxadiazon	113	95.8	P/P	60 - 130

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D

Batch ID: P359947

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	90.5	91.0	P/P	73 - 111
Parathion Methyl	96.6	117	P/P	74 - 126
Pendimethalin	88.6	93.6	P/P	63 - 131
Phorate	81.6	89.4	P/P	54 - 115
Prodiamine	93.6	91.8	P/P	60 - 130
Prometon	107	83.6	P/P	61 - 120
Prometryn	107	94.7	P/P	62 - 126
Simazine	101	105	P/P	75 - 126
Tebuconazole	100	73.9	P/P	30 - 100
Terbufos	89.7	91.5	P/P	65 - 116
Terbuthylazine	106	98.0	P/P	73 - 117

Reference Method: EPA 8321B

Batch ID: P359705

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	120		P	40 - 150
AMPA	87.3		P	40 - 150
Endothall	100		P	40 - 150
Glufosinate	135		P	40 - 150
Glyphosate	123		P	40 - 140
Sucralose	97.7		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P359745

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.8		P	40 - 150
Acetaminophen	106		P	30 - 150
Bentazon	118		P	30 - 150
Carbamazepine	91.4		P	40 - 150
Diuron	84.8		P	40 - 150
Fenuron	110		P	40 - 150
Fluridone	108		P	40 - 150
Hydrocodone	111		P	40 - 150
Ibuprofen	68.3		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	103		P	40 - 150
Linuron	79.7		P	40 - 150
MCPP	87.4		P	40 - 150
Naproxen	73.3		P	40 - 150
Primidone	92.9		P	40 - 150
Pyraclostrobin	72.5		P	40 - 150
Triclopyr	53.2		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P359788

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.5		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P360181

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

Reference Method: SM 4500 F-C-97
Batch ID: P360184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360398

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066498	Barium	103	104	P/P	80 - 120
2066498	Calcium	104		P	80 - 120
2066498	Iron	105	107	P/P	80 - 120
2066498	Magnesium	103		P	80 - 120
2066498	Potassium	99.9	101	P/P	80 - 120
2066498	Sodium	107	109	P/P	80 - 120
2066498	Zinc	101	101	P/P	80 - 120
2066551	Barium	101		P	80 - 120
2066551	Calcium	102		P	80 - 120
2066551	Iron	104		P	80 - 120
2066551	Magnesium	99.8		P	80 - 120
2066551	Potassium	95.3		P	80 - 120
2066551	Sodium	105		P	80 - 120
2066551	Zinc	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360028

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066498	Aluminum	98.5	101	P/P	80 - 120
2066498	Antimony	97.3	100	P/P	80 - 120
2066498	Arsenic	102	106	P/P	80 - 120
2066498	Boron	100	104	P/P	80 - 120
2066498	Cadmium	100	103	P/P	80 - 120
2066498	Chromium	100	104	P/P	80 - 120
2066498	Copper	98.1	101	P/P	80 - 120
2066498	Lead	100	103	P/P	80 - 120
2066498	Nickel	96.1	99.5	P/P	80 - 120
2066498	Selenium	97.8	101	P/P	80 - 120
2066498	Silver	101	100	P/P	80 - 120
2066498	Thallium	93.7	98.0	P/P	80 - 120
2066551	Aluminum	103		P	80 - 120
2066551	Antimony	103		P	80 - 120
2066551	Arsenic	109		P	80 - 120
2066551	Boron	105		P	80 - 120
2066551	Cadmium	105		P	80 - 120
2066551	Chromium	104		P	80 - 120
2066551	Copper	104		P	80 - 120
2066551	Lead	107		P	80 - 120
2066551	Nickel	104		P	80 - 120
2066551	Selenium	103		P	80 - 120
2066551	Silver	103		P	80 - 120
2066551	Thallium	99.6		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360554

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066485	Chloride	101		P	90 - 110
2066996	Chloride	98.2		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066485	Sulfate	101		P	90 - 110
2066996	Sulfate	99.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360139

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066907	Ammonia-N	102	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066546	Kjeldahl Nitrogen	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066546	NO2NO3-N	99.6	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359906

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066546	Total-P	96.2	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359786

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066547	O-Phosphate-P	94.8	95.2	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P359947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065382	Acetochlor	107	106	P/P	63 - 129
2065382	Alachlor	106	103	P/P	65 - 127
2065382	Ametryn	102	98.6	P/P	40 - 164
2065382	Atrazine	108	119	P/P	66 - 135
2065382	Atrazine Desethyl	89.1	77.1	P/P	14 - 157
2065382	Azinphos Methyl	133	124	P/P	49 - 180
2065382	Bromacil	91.8	88.4	P/P	48 - 130
2065382	Butylate	63.3	48.6	P/P	10 - 94.0
2065382	Chlorpyrifos Ethyl	88.6	99.9	P/P	58 - 123
2065382	Chlorpyrifos Methyl	92.5	95.3	P/P	58 - 125
2065382	Cyanazine	97.4	109	P/P	24 - 253
2065382	Demeton	89.6	90.9	P/P	25 - 149
2065382	Diazinon	101	102	P/P	59 - 144
2065382	Dimethenamid	103	108	P/P	60 - 130
2065382	Disulfoton	97.8	99.0	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P359947

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065382	Dithiopyr	100	101	P/P	60 - 130
2065382	EPTC	65.1	45.8	P/P	10 - 92.0
2065382	Ethion	49.7	60.1	P/P	30 - 148
2065382	Ethoprop	100	97.1	P/P	50 - 130
2065382	Fenamiphos	105	78.5	P/P	49 - 142
2065382	Fipronil	89.5	96.9	P/P	46 - 140
2065382	Fipronil Desulfinyl	73.0	76.3	P/P	60 - 130
2065382	Fipronil Sulfide	80.9	82.0	P/P	31 - 136
2065382	Fipronil Sulfone	81.5	92.3	P/P	16 - 136
2065382	Fonofos	96.1	100	P/P	55 - 129
2065382	Hexazinone	91.2	95.0	P/P	56 - 141
2065382	Malathion	92.5	96.9	P/P	56 - 135
2065382	Metalaxyl	97.4	98.1	P/P	54 - 135
2065382	Metolachlor	109	110	P/P	51 - 140
2065382	Metribuzin	149	150	P/P	45 - 254
2065382	Mevinphos	82.6	91.0	P/P	33 - 131
2065382	Molinate	85.2	75.0	P/P	14 - 98.0
2065382	Norflurazon	97.4	98.2	P/P	34 - 136
2065382	Oxadiazon	88.6	90.4	P/P	60 - 130
2065382	Parathion Ethyl	88.9	92.9	P/P	66 - 118
2065382	Parathion Methyl	120	124	P/P	64 - 136
2065382	Pendimethalin	71.9	71.8	P/P	59 - 144
2065382	Phorate	96.7	91.8	P/P	42 - 130
2065382	Prodiamine	89.6	80.9	P/P	60 - 130
2065382	Prometon	85.0	81.5	P/P	59 - 134
2065382	Prometryn	88.1	88.0	P/P	54 - 135
2065382	Simazine	105	111	P/P	53 - 156
2065382	Tebuconazole	64.3	72.1	P/P	30 - 100
2065382	Terbufos	99.4	99.0	P/P	57 - 131
2065382	Terbutylazine	96.9	98.5	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P359705

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065894	Acesulfame K	120	118	P/P	40 - 150
2065894	AMPA	99.1	67.4	P/P	40 - 150
2065894	Endothall	83.4	81.8	P/P	40 - 150
2065894	Glufosinate	119	99.7	P/P	40 - 150
2065894	Glyphosate	122	104	P/P	40 - 140
2065894	Sucralose	96.7	91.8	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066126	2,4-D	91.8	76.5	P/P	40 - 150
2066126	Acetaminophen	105	104	P/P	30 - 150
2066126	Bentazon	72.6	70.7	P/P	30 - 150
2066126	Carbamazepine	72.7	74.1	P/P	40 - 150
2066126	Diuron	64.4	61.0	P/P	40 - 150
2066126	Fenuron	94.1	94.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359745

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066126	Fluridone	96.3	90.0	P/P	40 - 150
2066126	Hydrocodone	103	95.5	P/P	40 - 150
2066126	Ibuprofen	64.4	63.1	P/P	40 - 150
2066126	Imazapyr	105	120	P/P	40 - 150
2066126	Imidacloprid	160	158	F/F	40 - 150
2066126	Linuron	70.6	65.9	P/P	40 - 150
2066126	MCP	117	106	P/P	40 - 150
2066126	Naproxen	70.4	58.7	P/P	40 - 150
2066126	Primidone	95.4	101	P/P	40 - 150
2066126	Pyraclostrobin	64.5	62.9	P/P	40 - 150
2066126	Triclopyr	63.0	45.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P360184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2067421	Fluoride	96.1	93.1	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P360398

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2066489	Organic Carbon	96.3	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P360028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066498	Barium	0.495	Spike	P	0 - 20
2066498	Calcium	0.663	Spike	P	0 - 20
2066498	Iron	2.02	Spike	P	0 - 20
2066498	Magnesium	0.964	Spike	P	0 - 20
2066498	Potassium	1.13	Spike	P	0 - 20
2066498	Sodium	0.898	Spike	P	0 - 20
2066498	Zinc	0.371	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P360028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066498	Aluminum	2.99	Spike	P	0 - 20
2066498	Antimony	3.18	Spike	P	0 - 20
2066498	Arsenic	3.61	Spike	P	0 - 20
2066498	Boron	3.35	Spike	P	0 - 20
2066498	Cadmium	2.24	Spike	P	0 - 20
2066498	Chromium	3.42	Spike	P	0 - 20
2066498	Copper	3.15	Spike	P	0 - 20
2066498	Lead	2.91	Spike	P	0 - 20
2066498	Nickel	3.47	Spike	P	0 - 20
2066498	Selenium	3.51	Spike	P	0 - 20
2066498	Silver	0.961	Spike	P	0 - 20
2066498	Thallium	4.54	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360554

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066485	Chloride	0.513	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P360558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066485	Sulfate	0.349	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P360139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066907	Ammonia-N	4.16	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P360065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066546	Kjeldahl Nitrogen	1.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P360104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066546	NO2NO3-N	0.709	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066546	Total-P	3.10	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066547	O-Phosphate-P	0.351	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065382	Acetochlor	1.28	Spike	P	0 - 30
2065382	Alachlor	3.28	Spike	P	0 - 30
2065382	Ametryn	3.84	Spike	P	0 - 30
2065382	Atrazine	10.1	Spike	P	0 - 30
2065382	Atrazine Desethyl	14.5	Spike	P	0 - 30
2065382	Azinphos Methyl	6.98	Spike	P	0 - 30
2065382	Bromacil	3.84	Spike	P	0 - 30
2065382	Butylate	26.3	Spike	P	0 - 30
2065382	Chlorpyrifos Ethyl	12.0	Spike	P	0 - 30
2065382	Chlorpyrifos Methyl	2.98	Spike	P	0 - 30
2065382	Cyanazine	11.2	Spike	P	0 - 30
2065382	Demeton	1.42	Spike	P	0 - 30
2065382	Diazinon	1.42	Spike	P	0 - 30
2065382	Dimethenamid	4.83	Spike	P	0 - 30
2065382	Disulfoton	1.27	Spike	P	0 - 30
2065382	Dithiopyr	1.14	Spike	P	0 - 30
2065382	EPTC	34.8	Spike	F	0 - 30
2065382	Ethion	19.0	Spike	P	0 - 30
2065382	Ethoprop	3.38	Spike	P	0 - 30
2065382	Fenamiphos	28.8	Spike	P	0 - 30
2065382	Fipronil	7.95	Spike	P	0 - 30
2065382	Fipronil Desulfinyl	4.40	Spike	P	0 - 30
2065382	Fipronil Sulfide	1.30	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270D

Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065382	Fipronil Sulfone	12.4	Spike	P	0 - 30
2065382	Fonofos	4.35	Spike	P	0 - 30
2065382	Hexazinone	4.02	Spike	P	0 - 30
2065382	Malathion	4.68	Spike	P	0 - 30
2065382	Metalaxyl	0.716	Spike	P	0 - 30
2065382	Metolachlor	1.24	Spike	P	0 - 30
2065382	Metribuzin	0.341	Spike	P	0 - 30
2065382	Mevinphos	9.75	Spike	P	0 - 30
2065382	Molinate	12.8	Spike	P	0 - 30
2065382	Norflurazon	0.794	Spike	P	0 - 30
2065382	Oxadiazon	2.01	Spike	P	0 - 30
2065382	Parathion Ethyl	4.37	Spike	P	0 - 30
2065382	Parathion Methyl	2.71	Spike	P	0 - 30
2065382	Pendimethalin	0.106	Spike	P	0 - 30
2065382	Phorate	5.18	Spike	P	0 - 30
2065382	Prodiamine	10.2	Spike	P	0 - 30
2065382	Prometon	4.14	Spike	P	0 - 30
2065382	Prometryn	0.0766	Spike	P	0 - 30
2065382	Simazine	6.05	Spike	P	0 - 30
2065382	Tebuconazole	11.4	Spike	P	0 - 30
2065382	Terbufos	0.389	Spike	P	0 - 30
2065382	Terbuthylazine	1.62	Spike	P	0 - 30
LFB	Acetochlor	2.61	LCS	P	0 - 30
LFB	Alachlor	12.0	LCS	P	0 - 30
LFB	Ametryn	1.53	LCS	P	0 - 30
LFB	Atrazine	1.95	LCS	P	0 - 30
LFB	Atrazine Desethyl	10.3	LCS	P	0 - 30
LFB	Azinphos Methyl	13.2	LCS	P	0 - 30
LFB	Bromacil	65.1	LCS	F	0 - 30
LFB	Butylate	25.8	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.25	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	11.3	LCS	P	0 - 30
LFB	Cyanazine	5.11	LCS	P	0 - 30
LFB	Demeton	7.02	LCS	P	0 - 30
LFB	Diazinon	11.1	LCS	P	0 - 30
LFB	Dimethenamid	10.5	LCS	P	0 - 30
LFB	Disulfoton	7.62	LCS	P	0 - 30
LFB	Dithiopyr	12.5	LCS	P	0 - 30
LFB	EPTC	11.5	LCS	P	0 - 30
LFB	Ethion	28.3	LCS	P	0 - 30
LFB	Ethoprop	13.4	LCS	P	0 - 30
LFB	Fenamiphos	9.40	LCS	P	0 - 30
LFB	Fipronil	25.4	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	11.4	LCS	P	0 - 30
LFB	Fipronil Sulfide	22.0	LCS	P	0 - 30
LFB	Fipronil Sulfone	23.0	LCS	P	0 - 30
LFB	Fonofos	6.10	LCS	P	0 - 30
LFB	Hexazinone	29.3	LCS	P	0 - 30
LFB	Malathion	0.580	LCS	P	0 - 30
LFB	Metalaxyl	12.6	LCS	P	0 - 30
LFB	Metolachlor	7.93	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D

Batch ID: P359947

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Metribuzin	51.1	LCS	F	0 - 30
LFB	Mevinphos	6.32	LCS	P	0 - 30
LFB	Molinate	9.68	LCS	P	0 - 30
LFB	Norflurazon	20.8	LCS	P	0 - 30
LFB	Oxadiazon	16.1	LCS	P	0 - 30
LFB	Parathion Ethyl	0.577	LCS	P	0 - 30
LFB	Parathion Methyl	18.7	LCS	P	0 - 30
LFB	Pendimethalin	5.45	LCS	P	0 - 30
LFB	Phorate	9.09	LCS	P	0 - 30
LFB	Prodiamine	1.90	LCS	P	0 - 30
LFB	Prometon	24.5	LCS	P	0 - 30
LFB	Prometryn	12.5	LCS	P	0 - 30
LFB	Simazine	4.64	LCS	P	0 - 30
LFB	Tebuconazole	30.1	LCS	F	0 - 30
LFB	Terbufos	2.01	LCS	P	0 - 30
LFB	Terbutylazine	7.93	LCS	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P359705

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065894	Acesulfame K	1.98	Spike	P	0 - 30
2065894	AMPA	38.1	Spike	F	0 - 30
2065894	Endothall	1.95	Spike	P	0 - 30
2065894	Glufosinate	17.5	Spike	P	0 - 30
2065894	Glyphosate	15.3	Spike	P	0 - 30
2065894	Sucralose	4.53	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P359745

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066126	2,4-D	13.8	Spike	P	0 - 30
2066126	Acetaminophen	1.65	Spike	P	0 - 30
2066126	Bentazon	1.34	Spike	P	0 - 30
2066126	Carbamazepine	1.65	Spike	P	0 - 30
2066126	Diuron	5.14	Spike	P	0 - 30
2066126	Fenuron	0.205	Spike	P	0 - 30
2066126	Fluridone	5.94	Spike	P	0 - 30
2066126	Hydrocodone	7.99	Spike	P	0 - 30
2066126	Ibuprofen	2.01	Spike	P	0 - 30
2066126	Imazapyr	5.68	Spike	P	0 - 30
2066126	Imidacloprid	1.18	Spike	P	0 - 30
2066126	Linuron	6.94	Spike	P	0 - 30
2066126	MCP	8.69	Spike	P	0 - 30
2066126	Naproxen	18.2	Spike	P	0 - 30
2066126	Primidone	5.75	Spike	P	0 - 30
2066126	Pyraclostrobin	2.60	Spike	P	0 - 30
2066126	Triclopyr	32.6	Spike	F	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
Batch ID: P359788

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066545	Color (true)	0.409	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P360181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067421	Total Alkalinity	0.273	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P360132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066373	TDS	5.97	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P360184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2067421	Fluoride	1.93	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P360398

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2066489	Organic Carbon	3.02	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: 2066550
Field Sample ID: G2CE0138

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	93.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	68.3	P	30 - 160
EPA 8321B	Diuron-d6	72.2	P	30 - 160
EPA 8321B	Endothall-d6	97.4	P	40 - 160
EPA 8321B	Endothall-d6	97.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.1	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	66.1	P	40 - 160
EPA 8321B	Ibuprofen-d3	62.5	P	30 - 160
EPA 8321B	Primidone-d5	92.5	P	30 - 160
EPA 8321B	Sucralose-d6	98.8	P	30 - 160
EPA 8321B	Sucralose-d6	98.8	P	30 - 160

Lab Sample ID: 2066552
Field Sample ID: G2CE0138

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	95.7	P	68 - 130
EPA 8270D	Terbufos-d10	82.4	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89747

Included Lab Sample IDs: 2066545

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89750

Included Lab Sample IDs: 2066547

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	95.7	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89752

Included Lab Sample IDs: 2066545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	98.9	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A89843

Included Lab Sample IDs: 2066550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	104	125	P/P	60 - 160
Endothall	98.1	115	P/P	60 - 160

Reference Method: EPA 8270D

Run ID: A89854

Included Lab Sample IDs: 2066552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.6		P	80 - 120
Alachlor	100		P	80 - 120
Ametryn	100		P	80 - 120
Atrazine Desethyl	97.7		P	80 - 120
Azinphos Methyl	103		P	80 - 120
Bromacil	98.4		P	80 - 120
Butylate	95.3		P	80 - 120
Chlorpyrifos Ethyl	98.3		P	80 - 120
Chlorpyrifos Methyl	101		P	80 - 120
Cyanazine	89.0		P	80 - 120
Demeton	97.4		P	80 - 120
Diazinon	93.0		P	80 - 120
Dimethenamid	97.8		P	80 - 120
Disulfoton	93.3		P	80 - 120
Dithiopyr	95.3		P	80 - 120
EPTC	96.4		P	80 - 120
Ethion	98.3		P	80 - 120
Ethoprop	100		P	80 - 120
Fenamiphos	94.3		P	80 - 120
Fipronil	95.6		P	80 - 120
Fipronil Desulfinyl	97.3		P	80 - 120
Fipronil Sulfide	96.3		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D

Run ID: A89854

Included Lab Sample IDs: 2066552

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fipronil Sulfone	98.3		P	80 - 120
Fonofos	98.1		P	80 - 120
Hexazinone	99.3		P	80 - 120
Malathion	97.1		P	80 - 120
Metalaxyl	98.3		P	80 - 120
Metolachlor	99.7		P	80 - 120
Metribuzin	86.8		P	80 - 120
Mevinphos	103		P	80 - 120
Molinate	95.9		P	80 - 120
Norflurazon	94.0		P	80 - 120
Oxadiazon	100		P	80 - 120
Parathion Ethyl	94.9		P	80 - 120
Parathion Methyl	97.5		P	80 - 120
Pendimethalin	93.0		P	80 - 120
Phorate	100		P	80 - 120
Prodiamine	97.9		P	80 - 120
Prometon	97.5		P	80 - 120
Prometryn	97.6		P	80 - 120
Simazine	102		P	80 - 120
Tebuconazole	95.8		P	80 - 120
Terbufos	99.1		P	80 - 120
Terbutylazine	98.7		P	80 - 120

Reference Method: EPA 8321B

Run ID: A89859

Included Lab Sample IDs: 2066550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	64.6	56.1*	P/F	60 - 160
Glufosinate	92.9	77.4	P/P	60 - 160
Glyphosate	96.3	78.1	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A89867

Included Lab Sample IDs: 2066550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	88.2	97.6	P/P	50 - 150
Acetaminophen	112	113	P/P	60 - 160
Bentazon	115	114	P/P	50 - 160
Carbamazepine	101	101	P/P	60 - 150
Diuron	108	103	P/P	60 - 150
Fenuron	102	102	P/P	60 - 150
Fluridone	102	104	P/P	60 - 160
Hydrocodone	104	107	P/P	60 - 150
Ibuprofen	115	100	P/P	50 - 160
Imazapyr	108	98.9	P/P	50 - 150
Imidacloprid	90.6	95.8	P/P	60 - 150
Linuron	95.7	95.6	P/P	60 - 150
MCPP	93.2	89.3	P/P	50 - 150
Naproxen	114	133	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89867
Included Lab Sample IDs: 2066550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Primidone	88.9	92.3	P/P	60 - 150
Pyraclostrobin	95.8	92.4	P/P	60 - 150
Triclopyr	90.7	87.7	P/P	50 - 150

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A89880
Included Lab Sample IDs: 2066551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	102	P/P	90 - 110
Calcium	101	100	P/P	90 - 110
Iron	101	100	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	99.2	99.1	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A89886
Included Lab Sample IDs: 2066546

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A89900
Included Lab Sample IDs: 2066546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A89901
Included Lab Sample IDs: 2066546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	107	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A89915
Included Lab Sample IDs: 2066545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A89915
Included Lab Sample IDs: 2066545

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89923

Included Lab Sample IDs: 2066551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.7	98.4	P/P	90 - 110
Antimony	95.7	95.1	P/P	90 - 110
Arsenic	99.7	98.5	P/P	90 - 110
Boron	103	103	P/P	90 - 110
Cadmium	96.8	96.6	P/P	90 - 110
Chromium	99.8	97.3	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Lead	102	102	P/P	90 - 110
Nickel	99.1	98.2	P/P	90 - 110
Selenium	97.5	96.4	P/P	90 - 110
Silver	95.5	96.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89963

Included Lab Sample IDs: 2066546

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

Reference Method: EPA 8270D

Run ID: A89972

Included Lab Sample IDs: 2066552

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89977

Included Lab Sample IDs: 2066551

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	94.3	94.0	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A89997

Included Lab Sample IDs: 2066546

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.4	92.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89999

Included Lab Sample IDs: 2066545

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A90049

Included Lab Sample IDs: 2066550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	95.9	96.5	P/P	60 - 160

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			LCS	Precision	MS
								SMP	
EPA 200.7 Rev. 4.4	Barium	104		103	104	101			0.495
	Calcium	102		104	102				0.663
	Iron	104		105	107	104			2.02
	Magnesium	102		103	99.8				0.964
	Potassium	99.5		99.9	101	95.3			1.13
	Sodium	107		107	109	105			0.898
	Zinc	102		101	101	101			0.371
EPA 200.8 Rev. 5.4	Aluminum	99.9		98.5	101	103			2.99
	Antimony	99.0		97.3	100	103			3.18
	Arsenic	103		102	106	109			3.61
	Boron	102		100	104	105			3.35
	Cadmium	102		100	103	105			2.24
	Chromium	101		100	104	104			3.42
	Copper	102		98.1	101	104			3.15
	Lead	102		100	103	107			2.91
	Nickel	100		96.1	99.5	104			3.47
	Selenium	100		97.8	101	103			3.51
	Silver	99.5		101	100	103			0.961
	Thallium	93.4		93.7	98.0	99.6			4.54
EPA 300.0 Rev. 2.1	Chloride	102		101	98.2			0.513	
	Sulfate	102		101	99.3			0.349	
EPA 350.1 Rev. 2.0	Ammonia-N	100		102	95.5				4.16
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		101	103				1.19
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5		99.6	101				0.709
EPA 365.1 Rev. 2.0	Total-P	104		96.2	99.5				3.10
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9		94.8	95.2				0.351
EPA 8270D	Acetochlor	112	109	107	106		2.61		1.28
	Alachlor	109	96.4	106	103		12.0		3.28
	Ametryn	112	110	102	98.6		1.53		3.84
	Atrazine	103	101	108	119		1.95		10.1
	Atrazine Desethyl	98.8	89.1	89.1	77.1		10.3		14.5
	Azinphos Methyl	96.2	110	133	124		13.2		6.98
	Bromacil	108	55.0	91.8	88.4		65.1		3.84
	Butylate	84.6	65.3	63.3	48.6		25.8		26.3
	Chlorpyrifos Ethyl	93.8	95.0	88.6	99.9		1.25		12.0
	Chlorpyrifos Methyl	84.6	94.8	92.5	95.3		11.3		2.98
	Cyanazine	99.0	94.0	97.4	109		5.11		11.2
	Demeton	80.6	86.5	89.6	90.9		7.02		1.42
	Diazinon	110	98.6	101	102		11.1		1.42
	Dimethenamid	112	101	103	108		10.5		4.83
	Disulfoton	87.8	94.8	97.8	99.0		7.62		1.27
	Dithiopyr	110	97.0	100	101		12.5		1.14
	EPTC	81.0	72.2	65.1	45.8		11.5		34.8
	Ethion	103	77.8	49.7	60.1		28.3		19.0
	Ethoprop	104	90.7	100	97.1		13.4		3.38
	Fenamiphos	94.6	86.1	105	78.5		9.40		28.8
	Fipronil	108	84.0	89.5	96.9		25.4		7.95
	Fipronil Desulfinyl	99.4	88.7	73.0	76.3		11.4		4.40
	Fipronil Sulfide	102	82.0	80.9	82.0		22.0		1.30
	Fipronil Sulfone	104	82.7	81.5	92.3		23.0		12.4
	Fonofos	87.6	93.1	96.1	100		6.10		4.35
	Hexazinone	130	96.6	91.2	95.0		29.3		4.02
	Malathion	98.5	97.9	92.5	96.9		0.580		4.68
	Metalaxyl	111	98.0	97.4	98.1		12.6		0.716

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metolachlor	112	103	109	110	7.93	1.24
	Metribuzin	86.2	145	149	150	51.1	0.341
	Mevinphos	94.7	88.9	82.6	91.0	6.32	9.75
	Molinate	84.4	76.6	85.2	75.0	9.68	12.8
	Norflurazon	105	85.6	97.4	98.2	20.8	0.794
	Oxadiazon	113	95.8	88.6	90.4	16.1	2.01
	Parathion Ethyl	90.5	91.0	88.9	92.9	0.577	4.37
	Parathion Methyl	96.6	117	120	124	18.7	2.71
	Pendimethalin	88.6	93.6	71.9	71.8	5.45	0.106
	Phorate	81.6	89.4	96.7	91.8	9.09	5.18
	Prodiamine	93.6	91.8	89.6	80.9	1.90	10.2
	Prometon	107	83.6	85.0	81.5	24.5	4.14
	Prometryn	107	94.7	88.1	88.0	12.5	0.0766
	Simazine	101	105	105	111	4.64	6.05
	Tebuconazole	100	73.9	64.3	72.1	30.1	11.4
	Terbufos	89.7	91.5	99.4	99.0	2.01	0.389
	Terbuthylazine	106	98.0	96.9	98.5	7.93	1.62
EPA 8321B	2,4-D	78.8		91.8	76.5		13.8
	Acesulfame K	120		120	118		1.98
	Acetaminophen	106		105	104		1.65
	AMPA	87.3		99.1	67.4		38.1
	Bentazon	118		72.6	70.7		1.34
	Carbamazepine	91.4		72.7	74.1		1.65
	Diuron	84.8		64.4	61.0		5.14
	Endothall	100		83.4	81.8		1.95
	Fenuron	110		94.1	94.3		0.205
	Fluridone	108		96.3	90.0		5.94
	Glufosinate	135		119	99.7		17.5
	Glyphosate	123		122	104		15.3
	Hydrocodone	111		103	95.5		7.99
	Ibuprofen	68.3		64.4	63.1		2.01
	Imazapyr	102		105	120		5.68
	Imidacloprid	103		160	158		1.18
	Linuron	79.7		70.6	65.9		6.94
	MCPP	87.4		117	106		8.69
	Naproxen	73.3		70.4	58.7		18.2
	Primidone	92.9		95.4	101		5.75
	Pyraclostrobin	72.5		64.5	62.9		2.60
	Sucralose	97.7		96.7	91.8		4.53
	Triclopyr	53.2		63.0	45.4		32.6
SM 2120 B	Color (true)	99.5				0.409	
SM 2320 B-97	Total Alkalinity	101				0.273	
SM 2540 C-97	TDS					5.97	
SM 4500 F-C-97	Fluoride	95.6		96.1	93.1		1.93
SM 5310 B-00	Organic Carbon	93.0		96.3	99.2		3.02

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2066545
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2066551

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2066551
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2066545
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2066545
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2066546
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2066546
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2066546
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2066546
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2066547
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2066552
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2066550
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2066550
SM 2120 B / E31780	True Color measured at 450 nm	2066545
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2066545
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2066545
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2066545
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2066545
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2066546

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	03/01/2019			03/01/2019 15:18	Adrian Shelby	2066545
EPA 200.7 Rev. 4.4	03/01/2019	03/06/2019 19:10	Elliott D. Healy	03/07/2019 17:18	Betina Topolski	2066551
EPA 200.8 Rev. 5.4	03/01/2019	03/06/2019 19:10	Elliott D. Healy	03/09/2019 03:29	Allison Taylor	2066551
	03/01/2019	03/06/2019 19:10	Elliott D. Healy	03/12/2019 14:03	Allison Taylor	2066551
EPA 300.0 Rev. 2.1	03/01/2019			03/15/2019 05:16	Lipi Saha	2066545
EPA 350.1 Rev. 2.0	03/01/2019			03/07/2019 14:48	Ping Hua	2066546
EPA 351.2 Rev. 2.0	03/01/2019	03/07/2019 12:30	Adrian Shelby	03/08/2019 11:36	Virginia P. Brown	2066546
EPA 353.2 Rev. 2.0	03/01/2019			03/07/2019 09:47	Beverly Y. Sanders	2066546
EPA 365.1 Rev. 2.0	03/01/2019	03/05/2019 13:25	Sima Feizi	03/12/2019 16:29	Rosalyn Ballman	2066546
EPA 365.1 Rev. 2.0 dissolved	03/01/2019			03/01/2019 15:33	Lipi Saha	2066547
EPA 8270D	03/01/2019	03/04/2019 08:30	Rasheda Ghaffari	03/06/2019 19:48	Vandana T. Nagar	2066552
	03/01/2019	03/04/2019 08:30	Rasheda Ghaffari	03/07/2019 14:07	Vandana T. Nagar	2066552
EPA 8321B	03/01/2019	03/04/2019 10:00	Rebecca Ware	03/04/2019 16:31	Rebecca Ware	2066550
	03/01/2019	03/04/2019 10:00	Rebecca Ware	03/05/2019 16:00	Rebecca Ware	2066550
	03/01/2019	03/04/2019 10:00	Rebecca Ware	03/12/2019 00:34	Rebecca Ware	2066550
	03/01/2019	03/06/2019 10:00	Hoor Shaik	03/07/2019 02:44	Juyoung Kim	2066550
SM 2120 B	03/01/2019			03/01/2019 16:09	Chelsea Hernandez	2066545
SM 2320 B-97	03/01/2019			03/09/2019 04:16	Lauren Lees	2066545
SM 2540 C-97	03/01/2019			03/05/2019 14:36	Yijie Li	2066545
SM 2540 D-97	03/01/2019			03/05/2019 14:36	Yijie Li	2066545
SM 4500 F-C-97	03/01/2019			03/09/2019 04:16	Lauren Lees	2066545
SM 5310 B-00	03/01/2019			03/12/2019 10:01	Chelsea Hernandez	2066546