

Chemical Analysis Report

NE-DIST-2019-02-20-03

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

Event Description: **SCI Daughtery and Ryal Swamp**

Request ID: **RQ-2019-02-18-11**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 11-MAR-2019 14:07

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: Rushing Creek 250m Downstream of Holstein Dr. **Collection Date/Time: 02/20/2019 10:10**

Field ID: G2NE1189

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064237	EPA 180.1 Rev. 2.0	Turbidity	4.6		NTU	P359316	
	EPA 300.0 Rev. 2.1	Chloride	29		mg Cl/L	P359886	
		Sulfate	22		mg SO4/L	P359887	
	SM 2120 B	Color (true)	65	A	PCU	P359324	
	SM 2320 B-97	Total Alkalinity	80		mg CaCO3/L	P359597	
	SM 2540 C-97	TDS	187		mg/L	P359701	
	SM 2540 D-97	TSS	3	I	mg/L	P359469	
2064238	SM 4500 F-C-97	Fluoride	0.096	I	mg F/L	P359601	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.15		mg N/L	P359556	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P359523	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P359520	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P359391	
2064239	SM 5310 B-00	Organic Carbon	10		mg C/L	P359684	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.061		mg P/L	P359323	
2064243	EPA 8321B	Acesulfame K**	0.10	U	ug/L	P359225	
		2,4-D	0.0027	I	ug/L	P359229	
		AMPA**	0.18	I	ug/L	P359225	
		Sucralose**	0.13		ug/L	P359225	
		Endothall**	0.25	U	ug/L	P359225	
		Acetaminophen**	0.0080	U	ug/L	P359229	
		Glufosinate**	0.10	U	ug/L	P359225	
		Glyphosate**	0.14	I	ug/L	P359225	
		Bentazon	0.026		ug/L	P359229	
		Carbamazepine**	8.0E-04	U	ug/L	P359229	
		Diuron	0.0020	U	ug/L	P359229	
		Fenuron	0.016	U	ug/L	P359229	
		Fluridone**	0.0041		ug/L	P359229	
		Imazapyr**	0.047		ug/L	P359229	
		Hydrocodone**	0.0020	U	ug/L	P359229	
		Ibuprofen**	0.020	U	ug/L	P359229	
		Imidacloprid	0.0092		ug/L	P359229	MS
		Linuron	0.0040	U	ug/L	P359229	
		MCP	0.0020	U	ug/L	P359229	
		Naproxen**	0.0080	U	ug/L	P359229	
		Primidone**	0.0040	U	ug/L	P359229	
		Pyraclostrobin**	0.0020	U	ug/L	P359229	
		Triclopyr**	0.0040	U	ug/L	P359229	
2064244	EPA 200.7 Rev. 4.4	Calcium	34.2		mg/L	P359691	
		Iron	1.21E+03		ug/L	P359691	
		Magnesium	6.47		mg/L	P359691	
		Potassium	2.3		mg/L	P359691	
		Sodium	16.6		mg/L	P359691	

Field ID: G2NE1189

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064244	EPA 200.8 Rev. 5.4	Aluminum	121		ug/L	P359328	
		Antimony	0.063	I	ug/L	P359328	
		Arsenic	0.69		ug/L	P359328	
		Barium	27.6		ug/L	P359328	
		Boron**	32.3		ug/L	P359328	
		Cadmium	0.020	U	ug/L	P359328	
		Chromium	0.40	I	ug/L	P359328	
		Copper	5.88		ug/L	P359328	
		Lead	0.42		ug/L	P359328	
		Nickel	0.51	I	ug/L	P359328	
		Selenium	0.20	U	ug/L	P359328	
		Silver	0.010	U	ug/L	P359328	
		Thallium	0.10	U	ug/L	P359328	
		Zinc	3.8	I	ug/L	P359328	
2064245	EPA 8270D	Acetochlor	0.24	U	ng/L	P359412	
		Alachlor	0.24	U	ng/L	P359412	
		Ametryn	0.57	U	ng/L	P359412	
		Atrazine	24		ng/L	P359412	
		Atrazine Desethyl	1.9	I	ng/L	P359412	
		Azinphos Methyl	2.2	U	ng/L	P359412	
		Bromacil	5.4		ng/L	P359412	
		Butylate	0.38	U	ng/L	P359412	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P359412	
		Chlorpyrifos Methyl	0.096	U	ng/L	P359412	
		Cyanazine	3.1	U	ng/L	P359412	
		Demeton	6.7	U	ng/L	P359412	
		Diazinon	0.12	U	ng/L	P359412	
		Dimethenamid**	0.096	U	ng/L	P359412	
		Disulfoton	0.48	U	ng/L	P359412	
		Dithiopyr**	0.18	I	ng/L	P359412	
		EPTC	1.2	U	ng/L	P359412	
		Ethion	0.14	U	ng/L	P359412	
		Ethoprop	0.096	U	ng/L	P359412	
		Fenamiphos	0.48	U	ng/L	P359412	
		Fipronil	0.95	I	ng/L	P359412	
		Fipronil Desulfinyl**	2.7	J	ng/L	P359412	LCS
		Fipronil Sulfide	0.82		ng/L	P359412	
		Fipronil Sulfone	1.1		ng/L	P359412	
		Fonofos	0.19	U	ng/L	P359412	
		Hexazinone	0.48	U	ng/L	P359412	
		Malathion	0.33	U	ng/L	P359412	
		Metalaxyl	0.29	U	ng/L	P359412	
		Metolachlor	1.1	I	ng/L	P359412	
		Metribuzin	0.72	U	ng/L	P359412	
		Mevinphos	0.48	U	ng/L	P359412	

Field ID: G2NE1189

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2064245	EPA 8270D	Molinate	0.29	U	ng/L	P359412	
		Norflurazon	0.48	U	ng/L	P359412	
		Oxadiazon**	3.2		ng/L	P359412	
		Parathion Ethyl	0.24	U	ng/L	P359412	
		Parathion Methyl	0.53	U	ng/L	P359412	
		Pendimethalin	0.96	U	ng/L	P359412	
		Phorate	0.24	U	ng/L	P359412	
		Prodiamine**	0.17	U	ng/L	P359412	
		Prometon	0.86	U	ng/L	P359412	
		Prometryn	0.19	U	ng/L	P359412	
		Simazine	36		ng/L	P359412	
		Tebuconazole**	0.48	U	ng/L	P359412	
		Terbufos	0.096	U	ng/L	P359412	
		Terbuthylazine	0.41	U	ng/L	P359412	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for glyphosate could not be assessed due to high concentration of parameter in the spiked sample.
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: P359316

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Component	Result	Code	Units
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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	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
Zinc	2.0	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359886

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359887

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359556

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: P359523

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359520

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359391

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

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

Reference Method: EPA 8270D
Batch ID: P359412

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	2.2	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: P359412

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: P359225

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: P359229

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P359324

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 2540 C-97
Batch ID: P359701

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P359469

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P359684

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: P359691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.1		P	85 - 115
Sodium	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	103		P	80 - 120
Arsenic	108		P	80 - 120
Barium	106		P	80 - 120
Boron	110		P	80 - 120
Cadmium	108		P	80 - 120
Chromium	109		P	80 - 120
Copper	110		P	80 - 120
Lead	107		P	80 - 120
Nickel	108		P	80 - 120
Selenium	103		P	80 - 120
Silver	104		P	80 - 120
Thallium	108		P	80 - 120
Zinc	108		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359886

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359887

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359556

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: P359523

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P359520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P359391

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P359323

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	96.7		P	90 - 110

Reference Method: EPA 8270D
 Batch ID: P359412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	90.6	100	P/P	71 - 121
Alachlor	89.4	98.0	P/P	72 - 119
Ametryn	86.7	101	P/P	47 - 144
Atrazine	88.1	91.4	P/P	75 - 123
Atrazine Desethyl	77.8	78.0	P/P	45 - 133
Azinphos Methyl	109	115	P/P	66 - 165
Bromacil	71.3	79.9	P/P	43 - 123
Butylate	52.2	59.7	P/P	27 - 83.0
Chlorpyrifos Ethyl	91.8	103	P/P	70 - 117
Chlorpyrifos Methyl	88.6	98.2	P/P	71 - 120
Cyanazine	93.1	96.6	P/P	34 - 264
Demeton	81.5	91.7	P/P	41 - 122
Diazinon	87.5	97.2	P/P	70 - 127
Dimethenamid	90.2	99.6	P/P	60 - 130
Disulfoton	84.3	104	P/P	56 - 127
Dithiopyr	87.0	98.2	P/P	60 - 130
EPTC	51.0	60.2	P/P	24 - 84.0
Ethion	81.9	92.7	P/P	53 - 132
Ethoprop	84.8	95.0	P/P	57 - 117
Fenamiphos	75.0	82.2	P/P	55 - 136
Fipronil	71.4	74.5	P/P	64 - 126
Fipronil Desulfinyl	59.3	63.6	F/P	60 - 130
Fipronil Sulfide	59.7	65.5	P/P	57 - 120
Fipronil Sulfone	66.0	74.0	P/P	52 - 115
Fonofos	82.1	95.2	P/P	61 - 121
Hexazinone	90.0	99.9	P/P	62 - 131
Malathion	91.6	103	P/P	67 - 126
Metalaxyl	86.6	95.3	P/P	54 - 128
Metolachlor	89.2	98.7	P/P	71 - 118
Metribuzin	151	163	P/P	42 - 221
Mevinphos	75.7	86.2	P/P	45 - 114
Molinate	67.6	76.3	P/P	33 - 91.0
Norflurazon	79.4	84.2	P/P	60 - 123
Oxadiazon	78.2	89.1	P/P	60 - 130

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P359412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Parathion Ethyl	83.6	90.9	P/P	73 - 111
Parathion Methyl	96.6	110	P/P	74 - 126
Pendimethalin	80.9	94.6	P/P	63 - 131
Phorate	94.5	107	P/P	54 - 115
Prodiamine	77.0	86.6	P/P	60 - 130
Prometon	76.7	81.4	P/P	61 - 120
Prometryn	77.4	86.7	P/P	62 - 126
Simazine	106	120	P/P	75 - 126
Tebuconazole	66.5	70.0	P/P	30 - 100
Terbufos	84.8	98.1	P/P	65 - 116
Terbuthylazine	85.9	98.4	P/P	73 - 117

Reference Method: EPA 8321B
Batch ID: P359225

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	113		P	40 - 150
AMPA	64.7		P	40 - 150
Endothall	93.1		P	40 - 150
Glufosinate	89.0		P	40 - 150
Glyphosate	91.9		P	40 - 140
Sucralose	98.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359229

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.2		P	40 - 150
Acetaminophen	94.8		P	30 - 150
Bentazon	112		P	30 - 150
Carbamazepine	89.6		P	40 - 150
Diuron	83.6		P	40 - 150
Fenuron	129		P	40 - 150
Fluridone	114		P	40 - 150
Hydrocodone	115		P	40 - 150
Ibuprofen	78.0		P	40 - 150
Imazapyr	102		P	40 - 150
Imidacloprid	104		P	40 - 150
Linuron	82.6		P	40 - 150
MCPP	97.3		P	40 - 150
Naproxen	75.3		P	40 - 150
Primidone	103		P	40 - 150
Pyraclostrobin	69.3		P	40 - 150
Triclopyr	56.7		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P359324

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.9		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P359597

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

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359684

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063940	Calcium	103	105	P/P	80 - 120
2063940	Iron	103	104	P/P	80 - 120
2063940	Magnesium	103	104	P/P	80 - 120
2063940	Potassium	101	102	P/P	80 - 120
2063940	Sodium	98.6	101	P/P	80 - 120
2064291	Calcium	102		P	80 - 120
2064291	Iron	103		P	80 - 120
2064291	Magnesium	102		P	80 - 120
2064291	Potassium	99.3		P	80 - 120
2064291	Sodium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063939	Aluminum	98.2		P	80 - 120
2063939	Antimony	101		P	80 - 120
2063939	Arsenic	106		P	80 - 120
2063939	Barium	104		P	80 - 120
2063939	Boron	102		P	80 - 120
2063939	Cadmium	107		P	80 - 120
2063939	Chromium	106		P	80 - 120
2063939	Copper	109		P	80 - 120
2063939	Lead	106		P	80 - 120
2063939	Nickel	105		P	80 - 120
2063939	Selenium	99.4		P	80 - 120
2063939	Silver	102		P	80 - 120
2063939	Thallium	108		P	80 - 120
2063939	Zinc	105		P	80 - 120
2063961	Aluminum	98.3	98.7	P/P	80 - 120
2063961	Antimony	105	105	P/P	80 - 120
2063961	Arsenic	110	110	P/P	80 - 120
2063961	Barium	107	107	P/P	80 - 120
2063961	Boron	104	105	P/P	80 - 120
2063961	Cadmium	110	109	P/P	80 - 120
2063961	Chromium	110	110	P/P	80 - 120
2063961	Copper	110	110	P/P	80 - 120
2063961	Lead	109	108	P/P	80 - 120
2063961	Nickel	106	106	P/P	80 - 120
2063961	Selenium	101	102	P/P	80 - 120
2063961	Silver	105	105	P/P	80 - 120
2063961	Thallium	110	111	P/P	80 - 120
2063961	Zinc	106	106	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064199	Chloride	101		P	90 - 110
2064252	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359887

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064199	Sulfate	101		P	90 - 110
2064252	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064253	Ammonia-N	100	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359523

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064285	Kjeldahl Nitrogen	101	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064227	NO2NO3-N	96.0	95.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359391

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064257	Total-P	100	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064286	O-Phosphate-P	94.9	96.8	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P359412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063768	Acetochlor	97.2	108	P/P	63 - 129
2063768	Alachlor	86.9	93.6	P/P	65 - 127
2063768	Ametryn	96.4	108	P/P	40 - 164
2063768	Atrazine	93.5	104	P/P	66 - 135
2063768	Atrazine Desethyl	76.9	74.5	P/P	14 - 157
2063768	Azinphos Methyl	107	116	P/P	49 - 180
2063768	Bromacil	77.3	83.4	P/P	48 - 130
2063768	Butylate	52.0	44.7	P/P	10 - 94.0
2063768	Chlorpyrifos Ethyl	96.5	103	P/P	58 - 123
2063768	Chlorpyrifos Methyl	84.5	93.9	P/P	58 - 125
2063768	Cyanazine	79.3	88.3	P/P	24 - 253
2063768	Demeton	47.5	48.7	P/P	25 - 149
2063768	Diazinon	86.3	90.6	P/P	59 - 144
2063768	Dimethenamid	88.5	97.7	P/P	60 - 130
2063768	Disulfoton	87.1	95.4	P/P	54 - 132

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P359412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063768	Dithiopyr	86.5	91.2	P/P	60 - 130
2063768	EPTC	43.4	37.9	P/P	10 - 92.0
2063768	Ethion	92.2	101	P/P	30 - 148
2063768	Ethoprop	88.7	97.5	P/P	50 - 130
2063768	Fenamiphos	77.5	82.0	P/P	49 - 142
2063768	Fipronil	79.5	86.0	P/P	46 - 140
2063768	Fipronil Desulfinyl	66.2	69.0	P/P	60 - 130
2063768	Fipronil Sulfide	78.7	80.2	P/P	31 - 136
2063768	Fipronil Sulfone	82.5	75.3	P/P	16 - 136
2063768	Fonofos	84.8	96.0	P/P	55 - 129
2063768	Hexazinone	97.0	107	P/P	56 - 141
2063768	Malathion	101	108	P/P	56 - 135
2063768	Metalaxyl	87.4	93.7	P/P	54 - 135
2063768	Metolachlor	90.5	97.8	P/P	51 - 140
2063768	Metribuzin	153	166	P/P	45 - 254
2063768	Mevinphos	84.7	96.0	P/P	33 - 131
2063768	Molinate	70.3	71.0	P/P	14 - 98.0
2063768	Norflurazon	84.5	88.7	P/P	34 - 136
2063768	Oxadiazon	84.7	95.8	P/P	60 - 130
2063768	Parathion Ethyl	82.2	89.8	P/P	66 - 118
2063768	Parathion Methyl	101	109	P/P	64 - 136
2063768	Pendimethalin	91.8	94.0	P/P	59 - 144
2063768	Phorate	78.2	81.9	P/P	42 - 130
2063768	Prodiamine	87.6	101	P/P	60 - 130
2063768	Prometon	82.1	88.3	P/P	59 - 134
2063768	Prometryn	80.9	93.4	P/P	54 - 135
2063768	Simazine	99.5	112	P/P	53 - 156
2063768	Tebuconazole	92.6	96.6	P/P	30 - 100
2063768	Terbufos	84.3	95.3	P/P	57 - 131
2063768	Terbutylazine	85.9	96.9	P/P	68 - 125

Reference Method: EPA 8321B
Batch ID: P359225

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2063987	Acesulfame K	90.0	87.7	P/P	40 - 150
2063987	AMPA	53.0	62.5	P/P	40 - 150
2063987	Endothall	128	119	P/P	40 - 150
2063987	Glufosinate	87.4	95.8	P/P	40 - 150
2063987	Sucralose	104	105	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P359229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065167	2,4-D	107	100	P/P	40 - 150
2065167	Acetaminophen	103	103	P/P	30 - 150
2065167	Bentazon	90.7	73.0	P/P	30 - 150
2065167	Carbamazepine	79.7	79.0	P/P	40 - 150
2065167	Diuron	74.6	72.4	P/P	40 - 150
2065167	Fenuron	111	105	P/P	40 - 150
2065167	Fluridone	117	111	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P359229

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2065167	Hydrocodone	124	123	P/P	40 - 150
2065167	Ibuprofen	83.8	77.5	P/P	40 - 150
2065167	Imazapyr	111	99.2	P/P	40 - 150
2065167	Imidacloprid	194	192	F/F	40 - 150
2065167	Linuron	78.0	71.2	P/P	40 - 150
2065167	MCPP	123	113	P/P	40 - 150
2065167	Naproxen	71.6	67.4	P/P	40 - 150
2065167	Primidone	119	116	P/P	40 - 150
2065167	Pyraclostrobin	86.3	81.4	P/P	40 - 150
2065167	Triclopyr	67.3	59.4	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P359601

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064733	Fluoride	98.0	97.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P359684

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2064201	Organic Carbon	96.4	96.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P359316

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064215	Turbidity	6.54	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P359691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063940	Calcium	1.96	Spike	P	0 - 20
2063940	Iron	0.563	Spike	P	0 - 20
2063940	Magnesium	0.339	Spike	P	0 - 20
2063940	Potassium	0.756	Spike	P	0 - 20
2063940	Sodium	2.27	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P359328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063961	Aluminum	0.444	Spike	P	0 - 20
2063961	Antimony	0.247	Spike	P	0 - 20
2063961	Arsenic	0.172	Spike	P	0 - 20
2063961	Barium	0.0607	Spike	P	0 - 20
2063961	Boron	0.852	Spike	P	0 - 20
2063961	Cadmium	0.623	Spike	P	0 - 20
2063961	Chromium	0.546	Spike	P	0 - 20
2063961	Copper	0.395	Spike	P	0 - 20
2063961	Lead	0.303	Spike	P	0 - 20
2063961	Nickel	0.254	Spike	P	0 - 20
2063961	Selenium	0.444	Spike	P	0 - 20
2063961	Silver	0.179	Spike	P	0 - 20
2063961	Thallium	1.32	Spike	P	0 - 20
2063961	Zinc	0.376	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064199	Chloride	0.464	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P359887

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064199	Sulfate	0.529	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P359556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064253	Ammonia-N	0.00642	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P359523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064285	Kjeldahl Nitrogen	0.260	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P359520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064227	NO2NO3-N	0.275	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P359391

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064257	Total-P	1.30	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P359323

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064286	O-Phosphate-P	1.50	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063768	Acetochlor	8.86	Spike	P	0 - 30
2063768	Alachlor	7.40	Spike	P	0 - 30
2063768	Ametryn	11.6	Spike	P	0 - 30
2063768	Atrazine	11.0	Spike	P	0 - 30
2063768	Atrazine Desethyl	3.15	Spike	P	0 - 30
2063768	Azinphos Methyl	7.88	Spike	P	0 - 30
2063768	Bromacil	7.65	Spike	P	0 - 30
2063768	Butylate	15.0	Spike	P	0 - 30
2063768	Chlorpyrifos Ethyl	6.78	Spike	P	0 - 30
2063768	Chlorpyrifos Methyl	10.5	Spike	P	0 - 30
2063768	Cyanazine	10.8	Spike	P	0 - 30
2063768	Demeton	2.53	Spike	P	0 - 30
2063768	Diazinon	4.95	Spike	P	0 - 30
2063768	Dimethenamid	9.89	Spike	P	0 - 30
2063768	Disulfoton	9.06	Spike	P	0 - 30
2063768	Dithiopyr	5.27	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063768	EPTC	13.6	Spike	P	0 - 30
2063768	Ethion	9.53	Spike	P	0 - 30
2063768	Ethoprop	9.35	Spike	P	0 - 30
2063768	Fenamiphos	5.68	Spike	P	0 - 30
2063768	Fipronil	7.77	Spike	P	0 - 30
2063768	Fipronil Desulfinyl	4.05	Spike	P	0 - 30
2063768	Fipronil Sulfide	1.95	Spike	P	0 - 30
2063768	Fipronil Sulfone	9.08	Spike	P	0 - 30
2063768	Fonofos	12.4	Spike	P	0 - 30
2063768	Hexazinone	8.83	Spike	P	0 - 30
2063768	Malathion	6.85	Spike	P	0 - 30
2063768	Metaxyl	6.99	Spike	P	0 - 30
2063768	Metolachlor	7.13	Spike	P	0 - 30
2063768	Metribuzin	7.86	Spike	P	0 - 30
2063768	Mevinphos	12.6	Spike	P	0 - 30
2063768	Molinate	1.06	Spike	P	0 - 30
2063768	Norflurazon	4.90	Spike	P	0 - 30
2063768	Oxadiazon	12.3	Spike	P	0 - 30
2063768	Parathion Ethyl	8.83	Spike	P	0 - 30
2063768	Parathion Methyl	7.52	Spike	P	0 - 30
2063768	Pendimethalin	2.40	Spike	P	0 - 30
2063768	Phorate	4.66	Spike	P	0 - 30
2063768	Prodiamine	14.2	Spike	P	0 - 30
2063768	Prometon	7.27	Spike	P	0 - 30
2063768	Prometryn	14.4	Spike	P	0 - 30
2063768	Simazine	11.4	Spike	P	0 - 30
2063768	Tebuconazole	2.99	Spike	P	0 - 30
2063768	Terbufos	12.2	Spike	P	0 - 30
2063768	Terbutylazine	12.0	Spike	P	0 - 30
LFB	Acetochlor	10.0	LCS	P	0 - 30
LFB	Alachlor	9.12	LCS	P	0 - 30
LFB	Ametryn	15.0	LCS	P	0 - 30
LFB	Atrazine	3.69	LCS	P	0 - 30
LFB	Atrazine Desethyl	0.324	LCS	P	0 - 30
LFB	Azinphos Methyl	4.94	LCS	P	0 - 30
LFB	Bromacil	11.5	LCS	P	0 - 30
LFB	Butylate	13.4	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	11.4	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	10.3	LCS	P	0 - 30
LFB	Cyanazine	3.75	LCS	P	0 - 30
LFB	Demeton	11.8	LCS	P	0 - 30
LFB	Diazinon	10.4	LCS	P	0 - 30
LFB	Dimethenamid	9.87	LCS	P	0 - 30
LFB	Disulfoton	21.2	LCS	P	0 - 30
LFB	Dithiopyr	12.0	LCS	P	0 - 30
LFB	EPTC	16.6	LCS	P	0 - 30
LFB	Ethion	12.3	LCS	P	0 - 30
LFB	Ethoprop	11.3	LCS	P	0 - 30
LFB	Fenamiphos	9.07	LCS	P	0 - 30
LFB	Fipronil	4.21	LCS	P	0 - 30
LFB	Fipronil Desulfinyl	7.04	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P359412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Fipronil Sulfide	9.15	LCS	P	0 - 30
LFB	Fipronil Sulfone	11.5	LCS	P	0 - 30
LFB	Fonofos	14.7	LCS	P	0 - 30
LFB	Hexazinone	10.4	LCS	P	0 - 30
LFB	Malathion	12.2	LCS	P	0 - 30
LFB	Metalaxyl	9.52	LCS	P	0 - 30
LFB	Metolachlor	10.0	LCS	P	0 - 30
LFB	Metribuzin	7.38	LCS	P	0 - 30
LFB	Mevinphos	13.0	LCS	P	0 - 30
LFB	Molinate	12.2	LCS	P	0 - 30
LFB	Norflurazon	5.90	LCS	P	0 - 30
LFB	Oxadiazon	13.1	LCS	P	0 - 30
LFB	Parathion Ethyl	8.45	LCS	P	0 - 30
LFB	Parathion Methyl	13.2	LCS	P	0 - 30
LFB	Pendimethalin	15.6	LCS	P	0 - 30
LFB	Phorate	12.2	LCS	P	0 - 30
LFB	Prodiamine	11.8	LCS	P	0 - 30
LFB	Prometon	5.99	LCS	P	0 - 30
LFB	Prometryn	11.3	LCS	P	0 - 30
LFB	Simazine	12.5	LCS	P	0 - 30
LFB	Tebuconazole	5.18	LCS	P	0 - 30
LFB	Terbufos	14.5	LCS	P	0 - 30
LFB	Terbuthylazine	13.5	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359225

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2063987	Acesulfame K	2.48	Spike	P	0 - 30
2063987	AMPA	9.77	Spike	P	0 - 30
2063987	Endothall	7.35	Spike	P	0 - 30
2063987	Glufosinate	9.20	Spike	P	0 - 30
2063987	Glyphosate	8.75	Spike	P	0 - 30
2063987	Sucralose	0.796	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P359229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065167	2,4-D	6.48	Spike	P	0 - 30
2065167	Acetaminophen	0.828	Spike	P	0 - 30
2065167	Bentazon	6.36	Spike	P	0 - 30
2065167	Carbamazepine	0.809	Spike	P	0 - 30
2065167	Diuron	3.06	Spike	P	0 - 30
2065167	Fenuron	5.16	Spike	P	0 - 30
2065167	Fluridone	4.45	Spike	P	0 - 30
2065167	Hydrocodone	0.752	Spike	P	0 - 30
2065167	Ibuprofen	7.83	Spike	P	0 - 30
2065167	Imazapyr	4.88	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P359229

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2065167	Imidacloprid	0.779	Spike	P	0 - 30
2065167	Linuron	9.10	Spike	P	0 - 30
2065167	MCP	8.15	Spike	P	0 - 30
2065167	Naproxen	6.05	Spike	P	0 - 30
2065167	Primidone	2.81	Spike	P	0 - 30
2065167	Pyraclostrobin	5.86	Spike	P	0 - 30
2065167	Triclopyr	12.4	Spike	P	0 - 30

Reference Method: SM 2120 B
 Batch ID: P359324

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064237	Color (true)	0.828	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P359597

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Total Alkalinity	0.126	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P359701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064199	TDS	1.90	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P359601

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064733	Fluoride	0.470	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P359684

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2064201	Organic Carbon	0.423	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: 2064243
Field Sample ID: G2NE1189

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	95.9	P	30 - 160
EPA 8321B	Acetaminophen-d4	99.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.3	P	30 - 160
EPA 8321B	Diuron-d6	61.4	P	30 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Endothall-d6	107	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.8	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	82.8	P	40 - 160
EPA 8321B	Ibuprofen-d3	84.7	P	30 - 160
EPA 8321B	Primidone-d5	95.7	P	30 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160
EPA 8321B	Sucralose-d6	104	P	40 - 160

Lab Sample ID: 2064245
Field Sample ID: G2NE1189

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Simazine-d10	79.6	P	68 - 130
EPA 8270D	Terbufos-d10	75.0	P	61 - 136

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89562

Included Lab Sample IDs: 2064237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	96.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89564

Included Lab Sample IDs: 2064239

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.9	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A89565

Included Lab Sample IDs: 2064237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.4	97.5	P/P	85 - 115

Reference Method: EPA 8321B

Run ID: A89599

Included Lab Sample IDs: 2064243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.1	104	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89630

Included Lab Sample IDs: 2064238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.7	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A89648

Included Lab Sample IDs: 2064244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.0	97.2	P/P	90 - 110
Antimony	98.4	100	P/P	90 - 110
Arsenic	104	104	P/P	90 - 110
Barium	102	104	P/P	90 - 110
Boron	105	103	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Chromium	107	108	P/P	90 - 110
Copper	110	109	P/P	90 - 110
Lead	104	104	P/P	90 - 110
Nickel	105	106	P/P	90 - 110
Silver	98.5	99.7	P/P	90 - 110
Thallium	99.9	101	P/P	90 - 110
Zinc	105	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89651

Included Lab Sample IDs: 2064238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89670

Included Lab Sample IDs: 2064238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89680

Included Lab Sample IDs: 2064237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.7	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A89680

Included Lab Sample IDs: 2064237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.6	100	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A89684

Included Lab Sample IDs: 2064245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	97.3		P	80 - 120
Alachlor	97.6		P	80 - 120
Ametryn	102		P	80 - 120
Atrazine	91.2		P	80 - 120
Atrazine Desethyl	97.0		P	80 - 120
Azinphos Methyl	106		P	80 - 120
Bromacil	96.6		P	80 - 120
Butylate	97.1		P	80 - 120
Chlorpyrifos Ethyl	101		P	80 - 120
Chlorpyrifos Methyl	98.0		P	80 - 120
Cyanazine	96.4		P	80 - 120
Demeton	100		P	80 - 120
Diazinon	99.1		P	80 - 120
Dimethenamid	98.4		P	80 - 120
Disulfoton	98.6		P	80 - 120
Dithiopyr	97.4		P	80 - 120
EPTC	99.5		P	80 - 120
Ethion	98.2		P	80 - 120
Ethoprop	99.9		P	80 - 120
Fenamiphos	96.9		P	80 - 120
Fipronil	96.4		P	80 - 120
Fipronil Desulfinyl	99.2		P	80 - 120
Fipronil Sulfide	92.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A89684
Included Lab Sample IDs: 2064245

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fipronil Sulfone	97.7		P	80 - 120
Fonofos	94.9		P	80 - 120
Hexazinone	98.8		P	80 - 120
Malathion	97.6		P	80 - 120
Metalaxyl	100		P	80 - 120
Metolachlor	100		P	80 - 120
Metribuzin	87.2		P	80 - 120
Mevinphos	101		P	80 - 120
Molinate	96.0		P	80 - 120
Norflurazon	96.0		P	80 - 120
Oxadiazon	99.8		P	80 - 120
Parathion Ethyl	95.8		P	80 - 120
Parathion Methyl	96.8		P	80 - 120
Pendimethalin	95.0		P	80 - 120
Phorate	96.1		P	80 - 120
Prodiamine	98.3		P	80 - 120
Prometon	95.4		P	80 - 120
Prometryn	96.7		P	80 - 120
Simazine	107		P	80 - 120
Tebuconazole	96.4		P	80 - 120
Terbufos	98.6		P	80 - 120
Terbutylazine	97.1		P	80 - 120

Reference Method: EPA 8321B
Run ID: A89706
Included Lab Sample IDs: 2064243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	114	87.9	P/P	60 - 160
Endothall	103	112	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A89708
Included Lab Sample IDs: 2064243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	70.4	71.5	P/P	60 - 160
Glufosinate	112	111	P/P	60 - 160
Glyphosate	122	110	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A89713
Included Lab Sample IDs: 2064244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	97.4	98.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A89717
Included Lab Sample IDs: 2064243

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	107	P/P	50 - 150
Acetaminophen	113	112	P/P	60 - 160
Bentazon	125	118	P/P	50 - 160
Carbamazepine	105	106	P/P	60 - 150
Diuron	113	111	P/P	60 - 150
Fenuron	105	109	P/P	60 - 150
Fluridone	106	109	P/P	60 - 160
Hydrocodone	107	110	P/P	60 - 150
Ibuprofen	94.0	106	P/P	50 - 160
Imazapyr	97.6	101	P/P	50 - 150
Imidacloprid	97.6	100	P/P	60 - 150
Linuron	107	110	P/P	60 - 150
MCPP	98.7	87.3	P/P	50 - 150
Naproxen	113	107	P/P	50 - 160
Primidone	105	104	P/P	60 - 150
Pyraclostrobin	107	101	P/P	60 - 150
Triclopyr	103	86.8	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A89719
Included Lab Sample IDs: 2064238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A89721
Included Lab Sample IDs: 2064238

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	93.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A89758
Included Lab Sample IDs: 2064244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	100	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	101	P/P	90 - 110
Potassium	97.0	96.5	P/P	90 - 110
Sodium	99.5	97.9	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A89801
Included Lab Sample IDs: 2064237

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	100	P/P	90 - 110
Sulfate	99.8	100	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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							6.54	
EPA 200.7 Rev. 4.4	Calcium	105		103	105	102			1.96
	Iron	103		103	104	103			0.563
	Magnesium	103		103	104	102			0.339
	Potassium	99.1		101	102	99.3			0.756
	Sodium	101		98.6	101	98.3			2.27
EPA 200.8 Rev. 5.4	Aluminum	102		98.2	98.3	98.7			0.444
	Antimony	103		101	105	105			0.247
	Arsenic	108		106	110	110			0.172
	Barium	106		104	107	107			0.0607
	Boron	110		102	104	105			0.852
	Cadmium	108		107	110	109			0.623
	Chromium	109		106	110	110			0.546
	Copper	110		109	110	110			0.395
	Lead	107		106	109	108			0.303
	Nickel	108		105	106	106			0.254
	Selenium	103		99.4	101	102			0.444
	Silver	104		102	105	105			0.179
	Thallium	108		108	110	111			1.32
	Zinc	108		105	106	106			0.376
EPA 300.0 Rev. 2.1	Chloride	101		101	101			0.464	
	Sulfate	102		101	102			0.529	
EPA 350.1 Rev. 2.0	Ammonia-N	100		100	100				0.0064
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107		101	101				0.260
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		96.0	95.5				0.275
EPA 365.1 Rev. 2.0	Total-P	99.9		100	98.8				1.30
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.7		94.9	96.8				1.50
EPA 8270D	Acetochlor	90.6	100	97.2	108		10.0		8.86
	Alachlor	89.4	98.0	86.9	93.6		9.12		7.40
	Ametryn	86.7	101	96.4	108		15.0		11.6
	Atrazine	88.1	91.4	93.5	104		3.69		11.0
	Atrazine Desethyl	77.8	78.0	76.9	74.5		0.324		3.15
	Azinphos Methyl	109	115	107	116		4.94		7.88
	Bromacil	71.3	79.9	77.3	83.4		11.5		7.65
	Butylate	52.2	59.7	52.0	44.7		13.4		15.0
	Chlorpyrifos Ethyl	91.8	103	96.5	103		11.4		6.78
	Chlorpyrifos Methyl	88.6	98.2	84.5	93.9		10.3		10.5
	Cyanazine	93.1	96.6	79.3	88.3		3.75		10.8
	Demeton	81.5	91.7	47.5	48.7		11.8		2.53
	Diazinon	87.5	97.2	86.3	90.6		10.4		4.95
	Dimethenamid	90.2	99.6	88.5	97.7		9.87		9.89
	Disulfoton	84.3	104	87.1	95.4		21.2		9.06
	Dithiopyr	87.0	98.2	86.5	91.2		12.0		5.27
	EPTC	51.0	60.2	43.4	37.9		16.6		13.6
	Ethion	81.9	92.7	92.2	101		12.3		9.53
	Ethoprop	84.8	95.0	88.7	97.5		11.3		9.35
	Fenamiphos	75.0	82.2	77.5	82.0		9.07		5.68
	Fipronil	71.4	74.5	79.5	86.0		4.21		7.77
	Fipronil Desulfinyl	59.3	63.6	66.2	69.0		7.04		4.05
	Fipronil Sulfide	59.7	65.5	78.7	80.2		9.15		1.95
	Fipronil Sulfone	66.0	74.0	82.5	75.3		11.5		9.08
	Fonofos	82.1	95.2	84.8	96.0		14.7		12.4
	Hexazinone	90.0	99.9	97.0	107		10.4		8.83
	Malathion	91.6	103	101	108		12.2		6.85

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Metalaxyl	86.6	95.3	87.4	93.7	9.52	6.99
	Metolachlor	89.2	98.7	90.5	97.8	10.0	7.13
	Metribuzin	151	163	153	166	7.38	7.86
	Mevinphos	75.7	86.2	84.7	96.0	13.0	12.6
	Molinate	67.6	76.3	70.3	71.0	12.2	1.06
	Norflurazon	79.4	84.2	84.5	88.7	5.90	4.90
	Oxadiazon	78.2	89.1	84.7	95.8	13.1	12.3
	Parathion Ethyl	83.6	90.9	82.2	89.8	8.45	8.83
	Parathion Methyl	96.6	110	101	109	13.2	7.52
	Pendimethalin	80.9	94.6	91.8	94.0	15.6	2.40
	Phorate	94.5	107	78.2	81.9	12.2	4.66
	Prodiamine	77.0	86.6	87.6	101	11.8	14.2
	Prometon	76.7	81.4	82.1	88.3	5.99	7.27
	Prometryn	77.4	86.7	80.9	93.4	11.3	14.4
	Simazine	106	120	99.5	112	12.5	11.4
	Tebuconazole	66.5	70.0	92.6	96.6	5.18	2.99
	Terbufos	84.8	98.1	84.3	95.3	14.5	12.2
	Terbutylazine	85.9	98.4	85.9	96.9	13.5	12.0
EPA 8321B	2,4-D	84.2		107	100		6.48
	Acesulfame K	113		90.0	87.7		2.48
	Acetaminophen	94.8		103	103		0.828
	AMPA	64.7		53.0	62.5		9.77
	Bentazon	112		90.7	73.0		6.36
	Carbamazepine	89.6		79.7	79.0		0.809
	Diuron	83.6		74.6	72.4		3.06
	Endothall	93.1		128	119		7.35
	Fenuron	129		111	105		5.16
	Fluridone	114		117	111		4.45
	Glufosinate	89.0		87.4	95.8		9.20
	Glyphosate	91.9					8.75
	Hydrocodone	115		124	123		0.752
	Ibuprofen	78.0		83.8	77.5		7.83
	Imazapyr	102		111	99.2		4.88
	Imidacloprid	104		194	192		0.779
	Linuron	82.6		78.0	71.2		9.10
	MCPP	97.3		123	113		8.15
	Naproxen	75.3		71.6	67.4		6.05
	Primidone	103		119	116		2.81
SM 2120 B SM 2320 B-97 SM 2540 C-97 SM 4500 F-C-97 SM 5310 B-00	Pyraclostrobin	69.3		86.3	81.4		5.86
	Sucralose	98.2		104	105		0.796
	Triclopyr	56.7		67.3	59.4		12.4
	Color (true)	95.9				0.828	
	Total Alkalinity	101				0.126	
	TDS					1.90	
	Fluoride	96.5		98.0	97.3		0.470
	Organic Carbon	95.4		96.4	96.9		0.423

Reference Method Descriptions

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

Description
Turbidity in aqueous matrices

Associated Samples
2064237

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	2064244
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2064244
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2064237
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2064237
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2064238
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2064238
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2064238
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2064238
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2064239
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS	2064245
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2064243
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2064243
SM 2120 B / E31780	True Color measured at 450 nm	2064237
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2064237
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2064237
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2064237
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2064237
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2064238

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	02/20/2019			02/21/2019 15:40	Adrian Shelby	2064237
EPA 200.7 Rev. 4.4	02/20/2019	02/28/2019 13:45	Elliott D. Healy	03/01/2019 16:41	Betina Topolski	2064244
EPA 200.8 Rev. 5.4	02/20/2019	02/21/2019 17:40	Elliott D. Healy	02/26/2019 01:51	Allison Taylor	2064244
	02/20/2019	02/21/2019 17:40	Elliott D. Healy	02/27/2019 19:03	Allison Taylor	2064244
EPA 300.0 Rev. 2.1	02/20/2019			03/05/2019 08:11	Lipi Saha	2064237
EPA 350.1 Rev. 2.0	02/20/2019			02/26/2019 10:49	Ping Hua	2064238
EPA 351.2 Rev. 2.0	02/20/2019	02/26/2019 11:30	Adrian Shelby	02/28/2019 10:05	Joseph Suarez	2064238
EPA 353.2 Rev. 2.0	02/20/2019			02/26/2019 11:17	Beverly Y. Sanders	2064238
EPA 365.1 Rev. 2.0	02/20/2019	02/22/2019 13:00	Sima Feizi	02/25/2019 12:41	Rosalyn Ballman	2064238
EPA 365.1 Rev. 2.0 dissolved	02/20/2019			02/21/2019 14:44	Jhamieka S. Greenwood	2064239
EPA 8270D	02/20/2019	02/25/2019 08:10	Dinesh Mishra	02/26/2019 17:42	Vandana T. Nagar	2064245
EPA 8321B	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 14:22	Rebecca Ware	2064243
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/22/2019 20:16	Rebecca Ware	2064243
	02/20/2019	02/22/2019 10:00	Rebecca Ware	02/23/2019 08:21	Mohammad Ghaffari	2064243
	02/20/2019	02/27/2019 09:30	Hoor Shaik	02/27/2019 22:40	Juyoung Kim	2064243
SM 2120 B	02/20/2019			02/21/2019 15:56	Chelsea Hernandez	2064237
SM 2320 B-97	02/20/2019			02/26/2019 05:20	Dale L. Simmons	2064237
SM 2540 C-97	02/20/2019			02/22/2019 15:01	Yijie Li	2064237
SM 2540 D-97	02/20/2019			02/22/2019 15:01	Yijie Li	2064237
SM 4500 F-C-97	02/20/2019			02/26/2019 05:20	Dale L. Simmons	2064237
SM 5310 B-00	02/20/2019			02/28/2019 01:09	Chelsea Hernandez	2064238