Chemical Analysis Report

NW-DIST-2016-06-29-01

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

Event Description: **TMDL Bioassessment**
Request ID: **RQ-2016-06-06-22**
Customer: **NW-DIST**
Project ID: **SMP**

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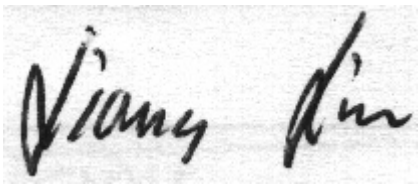
Date Certified: 22-JUL-2016 10:06



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: 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 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: West Fork @ Hwy 87 **Collection Date/Time: 06/28/2016 12:00**

Field ID: G4NW0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812183	EPA 180.1 Rev. 2.0	Turbidity	4.0	A	NTU	P307124	
	EPA 300.0 Rev. 2.1	Chloride	6.2		mg Cl/L	P307886	
		Sulfate	0.79		mg SO4/L	P307888	
	SM 2120 B	Color (true)	21		PCU	P307367	
	SM 2320 B-97	Total Alkalinity	2.9		mg CaCO3/L	P307616	
	SM 2540 C-97	TDS	34		mg/L	P307695	
	SM 2540 D-97	TSS	4	I	mg/L	P307687	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P307620	
1812184	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P307418	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26	J	mg N/L	P307262	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.7		mg N/L	P307251	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P307208	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P307476	
1812185	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P307099	

Ref. Method and Comment:
SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: Refer to the narrative for an explanation of QC Codes.

Sample Location: West Fork @ Hwy 87 **Collection Date/Time: 06/28/2016 12:00**

Field ID: G4NW0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812197	DEP SOP: GC-011-5 (based on EPA 608 and 617)	Aldrin	0.0021	U	ug/L	P307173	
		Alpha-BHC	0.0021	U	ug/L	P307173	
		Beta-BHC	0.0021	U	ug/L	P307173	
		Delta-BHC	0.0021	U	ug/L	P307173	
		Gamma-BHC	0.0021	U	ug/L	P307173	
		Carbophenothion	0.0062	UJ	ug/L	P307173	CCV
		Chlordane	0.021	U	ug/L	P307173	
		Chlorothalonil	0.0083	U	ug/L	P307173	
		Cypermethrin	0.012	U	ug/L	P307173	
		DDD-p,p'	0.0041	U	ug/L	P307173	
		DDE-p,p'	0.0041	U	ug/L	P307173	
		DDT-p,p'	0.0041	U	ug/L	P307173	
		Dicofol	0.025	U	ug/L	P307173	
		Dieldrin	0.0021	U	ug/L	P307173	
		Endosulfan I	0.0021	U	ug/L	P307173	
		Endosulfan II	0.0021	U	ug/L	P307173	
		Endosulfan Sulfate	0.0041	U	ug/L	P307173	
		Endrin	0.0041	U	ug/L	P307173	
		Endrin Aldehyde	0.0041	U	ug/L	P307173	
		Heptachlor	0.0021	U	ug/L	P307173	
		Heptachlor Epoxide	0.0021	U	ug/L	P307173	

Field ID: G4NW0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812197	DEP SOP: GC-011-5 (based on EPA 608 and 617)	Methoxychlor	0.010	U	ug/L	P307173	
		Mirex	0.0041	U	ug/L	P307173	
		Permethrin	0.010	U	ug/L	P307173	
		Toxaphene	0.10	U	ug/L	P307173	
		Trifluralin	0.0083	U	ug/L	P307173	

Ref. Method and Comment:
DEP SOP: GC-011-5 (based on EPA 608 and 617): Refer to the narrative for an explanation of QC Codes.

Sample Location: West Fork @ Hwy 87 **Collection Date/Time: 06/28/2016 12:00**

Field ID: G4NW0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812639	EPA 8321B	Glyphosate**	10	U	ug/L	P307138	
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P307137	
		Diuron	0.0040	U	ug/L	P307137	
		2,4-DB	0.0020	U	ug/L	P307137	
		Fenuron	0.0080	U	ug/L	P307137	
		2,4,5-T	0.0020	U	ug/L	P307137	
		Acifluorfen	0.0020	U	ug/L	P307137	
		Imidacloprid	0.021		ug/L	P307137	
		Bentazon	0.0061	IJ	ug/L	P307137	MS
		Linuron	0.0040	U	ug/L	P307137	
		Dichlorprop	0.0020	U	ug/L	P307137	
		Dinoseb	0.020	U	ug/L	P307137	
		MCPA	0.0040	U	ug/L	P307137	
		Acetaminophen**	0.0040	U	ug/L	P307137	
		MCPP	0.0040	U	ug/L	P307137	
		Carbamazepine**	4.0E-04	U	ug/L	P307137	
		Silvex	0.0020	U	ug/L	P307137	
		Primidone**	0.0080	U	ug/L	P307137	
		Fluridone**	4.0E-04	U	ug/L	P307137	
1812640	EPA 8321B	Pyraclostrobin**	0.0020	U	ug/L	P307136	
1812641	EPA 8270D	Ametryn	0.31	U	ng/L	P307189	
		Atrazine	0.71	I	ng/L	P307189	
		Chlorpyrifos Ethyl	0.095	U	ng/L	P307189	
		Chlorpyrifos Methyl	0.095	U	ng/L	P307189	
		Disulfoton	0.31	U	ng/L	P307189	
		Ethion	0.14	U	ng/L	P307189	
		Ethoprop	0.095	U	ng/L	P307189	
		Hexazinone	3.0		ng/L	P307189	
		Malathion	0.33	UJ	ng/L	P307189	LCS, RPD
		Metribuzin	0.19	U	ng/L	P307189	
		Mevinphos	0.47	U	ng/L	P307189	
		Norflurazon	1.5	I	ng/L	P307189	
		Phorate	0.24	U	ng/L	P307189	

Field ID: G4NW0017 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1812641	EPA 8270D	Prometryn	0.19	U	ng/L	P307189	
		Simazine	0.47	U	ng/L	P307189	
		Atrazine Desethyl	1.4	U	ng/L	P307189	
		Prometon	0.85	U	ng/L	P307189	MS
		Fipronil	0.48	I	ng/L	P307189	
		Molinate	0.28	U	ng/L	P307189	MS
		Pendimethalin	1.4	U	ng/L	P307189	
		Terbufos	0.095	U	ng/L	P307189	
		EPTC	1.2	U	ng/L	P307189	MS
		Terbuthylazine	0.40	U	ng/L	P307189	
		Bromacil	1.2	I	ng/L	P307189	
		Fipronil Sulfide	0.14	U	ng/L	P307189	
		Fipronil Sulfone	0.14	U	ng/L	P307189	RPD
		Alachlor	1.6		ng/L	P307189	
		Azinphos Methyl	2.1	U	ng/L	P307189	
		Butylate	0.38	U	ng/L	P307189	MS
		Demeton	0.95	U	ng/L	P307189	MS
		Diazinon	0.12	U	ng/L	P307189	
		Fenamiphos	0.24	U	ng/L	P307189	
		Fonofos	0.19	U	ng/L	P307189	
		Metalaxyl	0.25	I	ng/L	P307189	
		Metolachlor	9.9		ng/L	P307189	
		Acetochlor	0.24	U	ng/L	P307189	
		Cyanazine	0.47	U	ng/L	P307189	
		Parathion Ethyl	0.24	U	ng/L	P307189	
		Parathion Methyl	0.24	U	ng/L	P307189	

Ref. Method and Comment:
USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.
USGS O-2060-01: MS accuracy for imidacloprid could not be assessed due to high concentration of parameter in the spiked sample.
EPA 8270D: MS accuracy for Atrazine not assessed due to high content of this parameter in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Component	Result	Code	Units
Aldrin	0.0020	U	ug/L
Alpha-BHC	0.0020	U	ug/L
Beta-BHC	0.0020	U	ug/L
Carbophenothion	0.0060	U	ug/L
Chlordane	0.020	U	ug/L
Chlorothalonil	0.0080	U	ug/L
Cypermethrin	0.012	U	ug/L
DDD-p,p'	0.0040	U	ug/L
DDE-p,p'	0.0040	U	ug/L
DDT-p,p'	0.0040	U	ug/L
Delta-BHC	0.0020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Component	Result	Code	Units
Dicofol	0.024	U	ug/L
Dieldrin	0.0020	U	ug/L
Endosulfan I	0.0020	U	ug/L
Endosulfan II	0.0020	U	ug/L
Endosulfan Sulfate	0.0040	U	ug/L
Endrin	0.0040	U	ug/L
Endrin Aldehyde	0.0040	U	ug/L
Gamma-BHC	0.0020	U	ug/L
Heptachlor	0.0020	U	ug/L
Heptachlor Epoxide	0.0020	U	ug/L
Methoxychlor	0.010	U	ug/L
Mirex	0.0040	U	ug/L
Permethrin	0.010	U	ug/L
Toxaphene	0.10	U	ug/L
Trifluralin	0.0080	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307124

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307418

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307262

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307251

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307208

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307099

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

Reference Method: EPA 8270D
Batch ID: P307189

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	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	0.10	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	0.50	U	ng/L
Demeton	1.0	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.32	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	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	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P307136

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P307138

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P307367

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P307616

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 C-97
Batch ID: P307695

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P307687

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P307476

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: USGS O-2060-01
Batch ID: P307137

Component	Result	Code	Units
2,4,5-T	0.0020	U	ug/L
2,4-D	0.0040	U	ug/L
2,4-DB	0.0020	U	ug/L
Acetaminophen	0.0040	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P307137

Component	Result	Code	Units
Acifluorfen	0.0020	U	ug/L
Bentazon	0.0020	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Dichlorprop	0.0020	U	ug/L
Dinoseb	0.020	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPA	0.0040	U	ug/L
MCPP	0.0040	U	ug/L
Primidone	0.0080	U	ug/L
Silvex	0.0020	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	99.6	85.9	P/P	70 - 130
Alpha-BHC	103	94.1	P/P	70 - 130
Beta-BHC	106	104	P/P	70 - 130
DDD-p,p'	109	88.0	P/P	70 - 130
DDE-p,p'	108	88.9	P/P	70 - 130
DDT-p,p'	116	96.3	P/P	70 - 130
Delta-BHC	115	106	P/P	70 - 130
Dieldrin	111	93.3	P/P	70 - 130
Endosulfan I	105	90.8	P/P	70 - 130
Endosulfan II	110	90.7	P/P	70 - 130
Endosulfan Sulfate	120	102	P/P	70 - 130
Endrin	124	104	P/P	81 - 147
Endrin Aldehyde	102	88.0	P/P	70 - 130
Gamma-BHC	99.9	90.6	P/P	70 - 130
Heptachlor	97.4	101	P/P	70 - 130
Heptachlor Epoxide	110	91.9	P/P	70 - 130
Methoxychlor	121	99.8	P/P	86 - 145

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.9		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307262

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307251

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307208

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	95.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307099

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

Reference Method: EPA 8270D
Batch ID: P307189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	92.2	100	P/P	84 - 119
Alachlor	92.0	99.3	P/P	84 - 121
Ametryn	93.9	123	P/P	66 - 127
Atrazine	94.5	101	P/P	72 - 119
Atrazine Desethyl	66.4	64.4	P/P	21 - 111
Azinphos Methyl	137	143	P/P	79 - 185
Bromacil	80.2	80.3	P/P	39 - 122
Butylate	53.8	54.6	P/P	36 - 94.0
Chlorpyrifos Ethyl	82.8	84.7	P/P	54 - 101
Chlorpyrifos Methyl	81.0	81.9	P/P	28 - 114
Cyanazine	144	142	P/P	58 - 201
Demeton	63.9	61.4	P/P	57 - 130
Diazinon	92.1	103	P/P	79 - 124
Disulfoton	80.5	78.6	P/P	45 - 140
EPTC	51.0	53.4	P/P	43 - 95.0
Ethion	87.8	90.7	P/P	65 - 125
Ethoprop	79.6	83.3	P/P	69 - 107
Fenamiphos	93.4	92.3	P/P	78 - 129
Fipronil	79.5	81.3	P/P	62 - 125
Fipronil Sulfide	67.3	71.7	P/P	65 - 119
Fipronil Sulfone	76.0	73.3	P/P	64 - 122
Fonofos	83.3	85.3	P/P	70 - 112

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P307189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Hexazinone	89.8	96.7	P/P	44 - 147
Malathion	95.5	66.6	P/F	72 - 125
Metalaxyl	89.0	95.1	P/P	83 - 113
Metolachlor	90.1	97.4	P/P	85 - 120
Metribuzin	94.7	95.2	P/P	68 - 129
Mevinphos	77.8	76.8	P/P	35 - 125
Molinate	62.1	67.2	P/P	51 - 100
Norflurazon	87.5	91.1	P/P	66 - 127
Parathion Ethyl	87.9	91.6	P/P	86 - 108
Parathion Methyl	101	101	P/P	87 - 125
Pendimethalin	83.5	84.9	P/P	53 - 136
Phorate	77.0	78.2	P/P	52 - 113
Prometon	92.5	93.6	P/P	67 - 125
Prometryn	85.1	91.3	P/P	73 - 114
Simazine	92.7	102	P/P	66 - 123
Terbufos	79.3	82.8	P/P	58 - 116
Terbuthylazine	94.1	96.7	P/P	77 - 113

Reference Method: EPA 8321B
Batch ID: P307136

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	99.6		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P307138

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	88.2		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P307616

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P307476

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

Reference Method: USGS O-2060-01
Batch ID: P307137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P307137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	86.0		P	40 - 140
2,4-D	95.6		P	40 - 140
2,4-DB	81.2		P	40 - 140
Acetaminophen	114		P	40 - 140
Acifluorfen	93.6		P	40 - 140
Bentazon	122		P	40 - 140
Carbamazepine	109		P	40 - 140
Dichlorprop	88.0		P	40 - 140
Dinoseb	82.8		P	40 - 140
Diuron	108		P	40 - 140
Fenuron	108		P	40 - 140
Fluridone	110		P	40 - 140
Imidacloprid	114		P	40 - 160
Linuron	92.0		P	40 - 140
MCPA	90.0		P	40 - 140
MCPP	90.4		P	40 - 140
Primidone	92.0		P	40 - 140
Silvex	108		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812160	Aldrin	94.0	81.8	P/P	70 - 130
1812160	Alpha-BHC	100	93.4	P/P	70 - 130
1812160	Beta-BHC	107	105	P/P	70 - 130
1812160	DDD-p,p'	104	96.8	P/P	70 - 130
1812160	DDE-p,p'	102	82.3	P/P	70 - 130
1812160	DDT-p,p'	109	83.7	P/P	70 - 130
1812160	Delta-BHC	107	105	P/P	70 - 130
1812160	Dieldrin	111	89.1	P/P	70 - 130
1812160	Endosulfan I	109	83.9	P/P	70 - 130
1812160	Endosulfan II	107	98.7	P/P	70 - 130
1812160	Endosulfan Sulfate	112	102	P/P	70 - 130
1812160	Endrin	120	145	P/P	81 - 147
1812160	Endrin Aldehyde	96.8	78.9	P/P	70 - 130
1812160	Gamma-BHC	99.5	88.5	P/P	70 - 130
1812160	Heptachlor	101	93.5	P/P	70 - 130
1812160	Heptachlor Epoxide	108	86.4	P/P	70 - 130
1812160	Methoxychlor	116	91.4	P/P	86 - 145

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812030	Chloride	96.8		P	90 - 110
1812200	Chloride	98.6		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812030	Sulfate	99.4		P	90 - 110
1812200	Sulfate	99.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812074	Ammonia-N	98.5	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307262

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812184	Kjeldahl Nitrogen	81.1	89.2	F/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812085	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307208

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812173	Total-P	97.5	94.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812260	O-Phosphate-P	96.9	98.0	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P307189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812139	Acetochlor	94.5	95.0	P/P	84 - 119
1812139	Alachlor	94.5	96.3	P/P	84 - 121
1812139	Ametryn	102	103	P/P	66 - 127
1812139	Atrazine Desethyl	64.6	79.4	P/P	21 - 111
1812139	Azinphos Methyl	136	143	P/P	79 - 185
1812139	Bromacil	88.6	92.1	P/P	39 - 122
1812139	Butylate	20.2	23.4	F/F	36 - 94.0
1812139	Chlorpyrifos Ethyl	81.5	82.4	P/P	54 - 101
1812139	Chlorpyrifos Methyl	76.9	76.4	P/P	28 - 114
1812139	Cyanazine	117	128	P/P	58 - 201
1812139	Demeton	48.9	38.5	F/F	57 - 130
1812139	Diazinon	89.7	93.3	P/P	79 - 124
1812139	Disulfoton	72.3	63.0	P/P	45 - 140
1812139	EPTC	21.4	21.3	F/F	43 - 95.0
1812139	Ethion	97.5	96.2	P/P	65 - 125

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P307189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812139	Ethoprop	72.0	73.1	P/P	69 - 107
1812139	Fenamiphos	81.6	87.8	P/P	78 - 129
1812139	Fipronil	84.1	102	P/P	62 - 125
1812139	Fipronil Sulfide	80.4	87.4	P/P	65 - 119
1812139	Fipronil Sulfone	79.2	117	P/P	64 - 122
1812139	Fonofos	74.2	77.6	P/P	70 - 112
1812139	Hexazinone	115	125	P/P	44 - 147
1812139	Malathion	101	105	P/P	72 - 125
1812139	Metalaxyl	92.6	98.8	P/P	83 - 113
1812139	Metolachlor	96.3	97.6	P/P	85 - 120
1812139	Metribuzin	97.4	101	P/P	68 - 129
1812139	Mevinphos	59.6	62.2	P/P	35 - 125
1812139	Molinate	35.7	35.1	F/F	51 - 100
1812139	Norflurazon	83.8	90.7	P/P	66 - 127
1812139	Parathion Ethyl	91.8	91.6	P/P	86 - 108
1812139	Parathion Methyl	88.5	95.3	P/P	87 - 125
1812139	Pendimethalin	95.6	97.8	P/P	53 - 136
1812139	Phorate	60.2	58.8	P/P	52 - 113
1812139	Prometon	128	144	F/F	67 - 125
1812139	Prometryn	91.5	95.0	P/P	73 - 114
1812139	Simazine	91.8	98.8	P/P	66 - 123
1812139	Terbufos	71.1	69.6	P/P	58 - 116
1812139	Terbuthylazine	94.9	96.5	P/P	77 - 113

Reference Method: EPA 8321B
Batch ID: P307136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812137	Pyraclostrobin	102	106	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P307138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812709	Glyphosate	79.4	83.8	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812263	Fluoride	99.2	98.6	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P307476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812049	Organic Carbon	100	102	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P307137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P307137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1812639	2,4,5-T	90.4	92.8	P/P	40 - 140
1812639	2,4-D	109	108	P/P	40 - 140
1812639	2,4-DB	90.8	91.2	P/P	40 - 140
1812639	Acetaminophen	66.0	69.2	P/P	40 - 140
1812639	Acifluorfen	88.8	86.0	P/P	40 - 140
1812639	Bentazon	145	145	F/F	40 - 140
1812639	Carbamazepine	108	102	P/P	40 - 140
1812639	Dichlorprop	91.6	94.8	P/P	40 - 140
1812639	Dinoseb	97.6	100	P/P	40 - 140
1812639	Diuron	100	102	P/P	40 - 140
1812639	Fenuron	100	103	P/P	40 - 140
1812639	Fluridone	102	110	P/P	40 - 140
1812639	Linuron	104	86.8	P/P	40 - 140
1812639	MCPA	90.8	92.8	P/P	40 - 140
1812639	MCPP	97.6	95.2	P/P	40 - 140
1812639	Primidone	85.6	86.0	P/P	40 - 140
1812639	Silvex	126	120	P/P	40 - 140

Quality Assurance Report
Precision

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812160	Aldrin	14.1	Spike	P	0 - 30
1812160	Alpha-BHC	7.22	Spike	P	0 - 30
1812160	Beta-BHC	2.69	Spike	P	0 - 30
1812160	DDD-p,p'	7.11	Spike	P	0 - 30
1812160	DDE-p,p'	21.5	Spike	P	0 - 30
1812160	DDT-p,p'	26.4	Spike	P	0 - 30
1812160	Delta-BHC	1.51	Spike	P	0 - 30
1812160	Dieldrin	22.4	Spike	P	0 - 30
1812160	Endosulfan I	26.1	Spike	P	0 - 30
1812160	Endosulfan II	7.85	Spike	P	0 - 30
1812160	Endosulfan Sulfate	9.07	Spike	P	0 - 30
1812160	Endrin	18.3	Spike	P	0 - 30
1812160	Endrin Aldehyde	20.6	Spike	P	0 - 30
1812160	Gamma-BHC	11.8	Spike	P	0 - 30
1812160	Heptachlor	8.25	Spike	P	0 - 30
1812160	Heptachlor Epoxide	22.4	Spike	P	0 - 30
1812160	Methoxychlor	24.3	Spike	P	0 - 30
LFB	Aldrin	14.8	LCS	P	0 - 30
LFB	Alpha-BHC	8.78	LCS	P	0 - 30
LFB	Beta-BHC	2.05	LCS	P	0 - 30
LFB	DDD-p,p'	21.4	LCS	P	0 - 30
LFB	DDE-p,p'	19.1	LCS	P	0 - 30
LFB	DDT-p,p'	18.2	LCS	P	0 - 30
LFB	Delta-BHC	7.81	LCS	P	0 - 30
LFB	Dieldrin	17.1	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P307173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Endosulfan I	14.9	LCS	P	0 - 30
LFB	Endosulfan II	19.2	LCS	P	0 - 30
LFB	Endosulfan Sulfate	16.2	LCS	P	0 - 30
LFB	Endrin	18.0	LCS	P	0 - 30
LFB	Endrin Aldehyde	15.1	LCS	P	0 - 30
LFB	Gamma-BHC	9.84	LCS	P	0 - 30
LFB	Heptachlor	3.51	LCS	P	0 - 30
LFB	Heptachlor Epoxide	17.8	LCS	P	0 - 30
LFB	Methoxychlor	18.8	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P307124

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812183	Turbidity	2.23	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307886

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812030	Chloride	0.239	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P307888

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812030	Sulfate	0.317	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P307418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812074	Ammonia-N	1.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P307262

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812184	Kjeldahl Nitrogen	7.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P307251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812085	NO2NO3-N	0.301	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P307208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812173	Total-P	2.59	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P307099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812260	O-Phosphate-P	0.802	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P307189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812139	Acetochlor	0.581	Spike	P	0 - 30
1812139	Alachlor	1.93	Spike	P	0 - 30
1812139	Ametryn	1.17	Spike	P	0 - 30
1812139	Atrazine	4.86	Spike	P	0 - 30
1812139	Atrazine Desethyl	20.5	Spike	P	0 - 30
1812139	Azinphos Methyl	5.35	Spike	P	0 - 30
1812139	Bromacil	3.86	Spike	P	0 - 30
1812139	Butylate	14.7	Spike	P	0 - 30
1812139	Chlorpyrifos Ethyl	1.08	Spike	P	0 - 30
1812139	Chlorpyrifos Methyl	0.734	Spike	P	0 - 30
1812139	Cyanazine	8.61	Spike	P	0 - 30
1812139	Demeton	23.7	Spike	P	0 - 30
1812139	Diazinon	3.92	Spike	P	0 - 30
1812139	Disulfoton	13.7	Spike	P	0 - 30
1812139	EPTC	0.676	Spike	P	0 - 30
1812139	Ethion	1.33	Spike	P	0 - 30
1812139	Ethoprop	1.45	Spike	P	0 - 30
1812139	Fenamiphos	7.29	Spike	P	0 - 30
1812139	Fipronil	16.4	Spike	P	0 - 30
1812139	Fipronil Sulfide	7.03	Spike	P	0 - 30
1812139	Fipronil Sulfone	30.2	Spike	F	0 - 30
1812139	Fonofos	4.50	Spike	P	0 - 30
1812139	Hexazinone	6.01	Spike	P	0 - 30
1812139	Malathion	3.85	Spike	P	0 - 30
1812139	Metalaxyl	6.44	Spike	P	0 - 30
1812139	Metolachlor	1.40	Spike	P	0 - 30
1812139	Metribuzin	4.14	Spike	P	0 - 30
1812139	Mevinphos	4.27	Spike	P	0 - 30
1812139	Molinate	1.49	Spike	P	0 - 30
1812139	Norflurazon	8.01	Spike	P	0 - 30
1812139	Parathion Ethyl	0.318	Spike	P	0 - 30
1812139	Parathion Methyl	7.39	Spike	P	0 - 30
1812139	Pendimethalin	2.29	Spike	P	0 - 30
1812139	Phorate	2.35	Spike	P	0 - 30
1812139	Prometon	9.35	Spike	P	0 - 30
1812139	Prometryn	3.75	Spike	P	0 - 30
1812139	Simazine	6.66	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P307189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812139	Terbufos	2.14	Spike	P	0 - 30
1812139	Terbuthylazine	1.68	Spike	P	0 - 30
LFB	Acetochlor	8.58	LCS	P	0 - 30
LFB	Alachlor	7.67	LCS	P	0 - 30
LFB	Ametryn	27.0	LCS	P	0 - 30
LFB	Atrazine	7.16	LCS	P	0 - 30
LFB	Atrazine Desethyl	3.09	LCS	P	0 - 30
LFB	Azinphos Methyl	4.33	LCS	P	0 - 30
LFB	Bromacil	0.108	LCS	P	0 - 30
LFB	Butylate	1.42	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	2.31	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	1.05	LCS	P	0 - 30
LFB	Cyanazine	1.37	LCS	P	0 - 30
LFB	Demeton	4.12	LCS	P	0 - 30
LFB	Diazinon	11.4	LCS	P	0 - 30
LFB	Disulfoton	2.38	LCS	P	0 - 30
LFB	EPTC	4.69	LCS	P	0 - 30
LFB	Ethion	3.23	LCS	P	0 - 30
LFB	Ethoprop	4.50	LCS	P	0 - 30
LFB	Fenamiphos	1.19	LCS	P	0 - 30
LFB	Fipronil	2.22	LCS	P	0 - 30
LFB	Fipronil Sulfide	6.25	LCS	P	0 - 30
LFB	Fipronil Sulfone	3.63	LCS	P	0 - 30
LFB	Fonofos	2.45	LCS	P	0 - 30
LFB	Hexazinone	7.35	LCS	P	0 - 30
LFB	Malathion	35.7	LCS	F	0 - 30
LFB	Metalaxyl	6.62	LCS	P	0 - 30
LFB	Metolachlor	7.77	LCS	P	0 - 30
LFB	Metribuzin	0.558	LCS	P	0 - 30
LFB	Mevinphos	1.27	LCS	P	0 - 30
LFB	Molinate	7.79	LCS	P	0 - 30
LFB	Norflurazon	4.02	LCS	P	0 - 30
LFB	Parathion Ethyl	4.13	LCS	P	0 - 30
LFB	Parathion Methyl	0.398	LCS	P	0 - 30
LFB	Pendimethalin	1.74	LCS	P	0 - 30
LFB	Phorate	1.48	LCS	P	0 - 30
LFB	Prometon	1.15	LCS	P	0 - 30
LFB	Prometryn	7.06	LCS	P	0 - 30
LFB	Simazine	9.47	LCS	P	0 - 30
LFB	Terbufos	4.38	LCS	P	0 - 30
LFB	Terbuthylazine	2.72	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P307136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812137	Pyraclostrobin	3.83	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P307138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812709	Glyphosate	5.39	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P307367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812171	Color (true)	1.45	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P307616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Total Alkalinity	0.0901	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P307695

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812261	TDS	0.858	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P307620

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812263	Fluoride	0.466	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P307476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812049	Organic Carbon	0.788	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P307137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812639	2,4,5-T	2.62	Spike	P	0 - 30
1812639	2,4-D	1.48	Spike	P	0 - 30
1812639	2,4-DB	0.440	Spike	P	0 - 30
1812639	Acetaminophen	4.73	Spike	P	0 - 30
1812639	Acifluorfen	3.20	Spike	P	0 - 30
1812639	Bentazon	0.264	Spike	P	0 - 30
1812639	Carbamazepine	4.95	Spike	P	0 - 30
1812639	Dichlorprop	3.43	Spike	P	0 - 30
1812639	Dinoseb	2.43	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: USGS O-2060-01
Batch ID: P307137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1812639	Diuron	1.97	Spike	P	0 - 30
1812639	Fenuron	3.15	Spike	P	0 - 30
1812639	Fluridone	7.91	Spike	P	0 - 30
1812639	Imidacloprid	0.475	Spike	P	0 - 30
1812639	Linuron	17.6	Spike	P	0 - 30
1812639	MCPA	2.18	Spike	P	0 - 30
1812639	MCPP	2.49	Spike	P	0 - 30
1812639	Primidone	0.466	Spike	P	0 - 30
1812639	Silvex	5.19	Spike	P	0 - 30

* 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: 1812197
Field Sample ID: G4NW0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: GC-011-5 (based on EPA 608 and 617)	Decachlorobiphenyl	60.7	P	44 - 128

Lab Sample ID: 1812639
Field Sample ID: G4NW0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	79.6	P	50 - 150
USGS O-2060-01	2,4-D-d3	82.6	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	72.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	105	P	40 - 160
USGS O-2060-01	Diuron-d6	74.4	P	40 - 150
USGS O-2060-01	Primidone-d5	88.4	P	40 - 150

Lab Sample ID: 1812640
Field Sample ID: G4NW0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	89.2	P	40 - 150

Lab Sample ID: 1812641
Field Sample ID: G4NW0017

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	94.3	P	67 - 131
EPA 8270D	Simazine-d10	100	P	75 - 130

Quality Assurance Report
Calibration Verification

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A70308
Included Lab Sample IDs: 1812185

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

Reference Method: SM 2120 B
Run ID: A70310
Included Lab Sample IDs: 1812183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	95.2	97.1	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A70317
Included Lab Sample IDs: 1812183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A70364
Included Lab Sample IDs: 1812184

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

Reference Method: EPA 8321B
Run ID: A70366
Included Lab Sample IDs: 1812639

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	75.4	92.0	P/P	70 - 130

Reference Method: EPA 8321B
Run ID: A70403
Included Lab Sample IDs: 1812640

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	99.2	106	P/P	60 - 150

Reference Method: USGS O-2060-01
Run ID: A70403
Included Lab Sample IDs: 1812639

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	88.8	95.2	P/P	60 - 150
Carbamazepine	116	126	P/P	60 - 150
Diuron	106	105	P/P	60 - 150
Fenuron	124	128	P/P	60 - 150
Fluridone	109	104	P/P	60 - 150
Imidacloprid	119	132	P/P	60 - 150
Linuron	133	131	P/P	60 - 150
Primidone	85.6	112	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A70410
Included Lab Sample IDs: 1812184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.0	97.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A70419
Included Lab Sample IDs: 1812184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	101	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A70435
Included Lab Sample IDs: 1812184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	103	101	P/P	90 - 110

Reference Method: USGS O-2060-01
Run ID: A70456
Included Lab Sample IDs: 1812639

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	99.0	99.8	P/P	50 - 150
2,4-D	84.4	98.2	P/P	50 - 150
2,4-DB	76.4	87.0	P/P	50 - 150
Acifluorfen	93.0	97.0	P/P	50 - 150
Bentazon	100	106	P/P	50 - 150
Dichlorprop	80.0	82.6	P/P	50 - 150
Dinoseb	93.8	103	P/P	50 - 150
MCPA	88.6	101	P/P	50 - 150
MCPP	88.2	97.0	P/P	50 - 150
Silvex	103	116	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A70469
Included Lab Sample IDs: 1812184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.1	96.6	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A70474
Included Lab Sample IDs: 1812183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A70474
Included Lab Sample IDs: 1812183

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 4500 F-C-97
Run ID: A70474
Included Lab Sample IDs: 1812183

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

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Run ID: A70511
Included Lab Sample IDs: 1812197

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	91.3	99.2	P/P	85 - 115
Alpha-BHC	93.5	100	P/P	85 - 115
Beta-BHC	91.3	97.1	P/P	85 - 115
Carbophenothion	87.4*	93.2	F/P	90 - 110
Chlordane	90.3	99.7	P/P	85 - 115
Chlorothalonil	93.3	94.9	P/P	90 - 110
Cypermethrin	91.6	99.8	P/P	85 - 115
DDD-p,p'	89.1	96.0	P/P	85 - 115
DDE-p,p'	90.1	96.3	P/P	85 - 115
DDT-p,p'	90.0	96.9	P/P	85 - 115
Delta-BHC	92.3	98.9	P/P	85 - 115
Dicofol	108	106	P/P	90 - 110
Dieldrin	92.5	99.7	P/P	85 - 115
Endosulfan I	88.0	94.5	P/P	85 - 115
Endosulfan II	88.4	95.3	P/P	85 - 115
Endosulfan Sulfate	90.2	96.8	P/P	85 - 115
Endrin	91.3	103	P/P	85 - 115
Endrin Aldehyde	90.2	96.0	P/P	85 - 115
Gamma-BHC	91.6	98.3	P/P	85 - 115
Heptachlor	92.3	102	P/P	85 - 115
Heptachlor Epoxide	92.9	101	P/P	85 - 115
Methoxychlor	91.4	100	P/P	90 - 110
Mirex	90.3	94.2	P/P	90 - 110
Permethrin	92.6	96.4	P/P	90 - 110
Toxaphene	89.9	96.8	P/P	85 - 115
Trifluralin	92.4	93.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A70540
Included Lab Sample IDs: 1812183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	101	P/P	90 - 110
Sulfate	94.5	100	P/P	90 - 110

Reference Method: EPA 8270D
Run ID: A70619
Included Lab Sample IDs: 1812641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	96.7		P	80 - 120
Alachlor	96.3		P	80 - 120
Ametryn	96.2		P	80 - 120
Atrazine	95.4		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A70619
Included Lab Sample IDs: 1812641

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Atrazine Desethyl	90.9		P	80 - 120
Azinphos Methyl	97.2		P	80 - 120
Bromacil	92.9		P	80 - 120
Butylate	96.2		P	80 - 120
Chlorpyrifos Ethyl	95.2		P	80 - 120
Chlorpyrifos Methyl	93.8		P	80 - 120
Cyanazine	85.3		P	80 - 120
Demeton	91.4		P	80 - 120
Diazinon	99.2		P	80 - 120
Disulfoton	98.3		P	80 - 120
EPTC	98.4		P	80 - 120
Ethion	90.9		P	80 - 120
Ethoprop	99.7		P	80 - 120
Fenamiphos	97.0		P	80 - 120
Fipronil	89.0		P	80 - 120
Fipronil Sulfide	95.1		P	80 - 120
Fipronil Sulfone	96.4		P	80 - 120
Fonofos	102		P	80 - 120
Hexazinone	96.5		P	80 - 120
Malathion	95.4		P	80 - 120
Metalaxyl	97.8		P	80 - 120
Metolachlor	97.2		P	80 - 120
Metribuzin	94.2		P	80 - 120
Mevinphos	99.5		P	80 - 120
Molinate	99.0		P	80 - 120
Norflurazon	99.2		P	80 - 120
Parathion Ethyl	95.0		P	80 - 120
Parathion Methyl	97.4		P	80 - 120
Pendimethalin	96.7		P	80 - 120
Phorate	99.3		P	80 - 120
Prometon	98.8		P	80 - 120
Prometryn	94.9		P	80 - 120
Simazine	101		P	80 - 120
Terbufos	95.9		P	80 - 120
Terbuthylazine	95.8		P	80 - 120

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
DEP SOP: GC-011-5 (based on EPA 608 and 617)	Aldrin	99.6	85.9	94.0	81.8	14.8		14.1
	Alpha-BHC	103	94.1	100	93.4	8.78		7.22
	Beta-BHC	106	104	107	105	2.05		2.69
	DDD-p,p'	109	88.0	104	96.8	21.4		7.11

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
DEP SOP: GC-011-5 (based on EPA 608 and 617)	DDE-p,p'	108	88.9	102	82.3	19.1		21.5
	DDT-p,p'	116	96.3	109	83.7	18.2		26.4
	Delta-BHC	115	106	107	105	7.81		1.51
	Dieldrin	111	93.3	111	89.1	17.1		22.4
	Endosulfan I	105	90.8	109	83.9	14.9		26.1
	Endosulfan II	110	90.7	107	98.7	19.2		7.85
	Endosulfan Sulfate	120	102	112	102	16.2		9.07
	Endrin	124	104	120	145	18.0		18.3
	Endrin Aldehyde	102	88.0	96.8	78.9	15.1		20.6
	Gamma-BHC	99.9	90.6	99.5	88.5	9.84		11.8
	Heptachlor	97.4	101	101	93.5	3.51		8.25
	Heptachlor Epoxide	110	91.9	108	86.4	17.8		22.4
	Methoxychlor	121	99.8	116	91.4	18.8		24.3
EPA 180.1 Rev. 2.0	Turbidity						2.23	
EPA 300.0 Rev. 2.1	Chloride	99.0		96.8	98.6		0.239	
	Sulfate	99.8		99.4	99.7		0.317	
EPA 350.1 Rev. 2.0	Ammonia-N	98.9		98.5	99.8			1.08
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		81.1	89.2			7.62
EPA 353.2 Rev. 2.0	NO2NO3-N	101		99.0	99.5			0.301
EPA 365.1 Rev. 2.0	Total-P	95.4		97.5	94.8			2.59
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	103		96.9	98.0			0.802
EPA 8270D	Acetochlor	92.2	100	94.5	95.0	8.58		0.581
	Alachlor	92.0	99.3	94.5	96.3	7.67		1.93
	Ametryn	93.9	123	103	102	27.0		1.17
	Atrazine	94.5	101			7.16		4.86
	Atrazine Desethyl	66.4	64.4	79.4	64.6	3.09		20.5
	Azinphos Methyl	137	143	143	136	4.33		5.35
	Bromacil	80.2	80.3	92.1	88.6	0.108		3.86
	Butylate	53.8	54.6	23.4	20.2	1.42		14.7
	Chlorpyrifos Ethyl	82.8	84.7	82.4	81.5	2.31		1.08
	Chlorpyrifos Methyl	81.0	81.9	76.4	76.9	1.05		0.734
	Cyanazine	144	142	128	117	1.37		8.61
	Demeton	63.9	61.4	38.5	48.9	4.12		23.7
	Diazinon	92.1	103	93.3	89.7	11.4		3.92
	Disulfoton	80.5	78.6	63.0	72.3	2.38		13.7
	EPTC	51.0	53.4	21.3	21.4	4.69		0.676
	Ethion	87.8	90.7	96.2	97.5	3.23		1.33
	Ethoprop	79.6	83.3	73.1	72.0	4.50		1.45
	Fenamiphos	93.4	92.3	87.8	81.6	1.19		7.29
	Fipronil	79.5	81.3	102	84.1	2.22		16.4
	Fipronil Sulfide	67.3	71.7	87.4	80.4	6.25		7.03
	Fipronil Sulfone	76.0	73.3	117	79.2	3.63		30.2
	Fonofos	83.3	85.3	77.6	74.2	2.45		4.50
	Hexazinone	89.8	96.7	125	115	7.35		6.01
	Malathion	95.5	66.6	105	101	35.7		3.85
	Metalaxyl	89.0	95.1	98.8	92.6	6.62		6.44
	Metolachlor	90.1	97.4	97.6	96.3	7.77		1.40
	Metribuzin	94.7	95.2	101	97.4	0.558		4.14
	Mevinphos	77.8	76.8	62.2	59.6	1.27		4.27
	Molinate	62.1	67.2	35.1	35.7	7.79		1.49
	Norflurazon	87.5	91.1	90.7	83.8	4.02		8.01
	Parathion Ethyl	87.9	91.6	91.6	91.8	4.13		0.318
	Parathion Methyl	101	101	95.3	88.5	0.398		7.39

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	Pendimethalin	83.5	84.9	97.8	95.6	1.74		2.29
	Phorate	77.0	78.2	58.8	60.2	1.48		2.35
	Prometon	92.5	93.6	144	128	1.15		9.35
	Prometryn	85.1	91.3	95.0	91.5	7.06		3.75
	Simazine	92.7	102	98.8	91.8	9.47		6.66
	Terbufos	79.3	82.8	69.6	71.1	4.38		2.14
	Terbuthylazine	94.1	96.7	96.5	94.9	2.72		1.68
EPA 8321B	Glyphosate	88.2		79.4	83.8			5.39
	Pyraclostrobin	99.6		102	106			3.83
SM 2120 B	Color (true)						1.45	
SM 2320 B-97	Total Alkalinity	103					0.0901	
SM 2540 C-97	TDS						0.858	
SM 4500 F-C-97	Fluoride	98.9		99.2	98.6			0.466
SM 5310 B-00	Organic Carbon	99.2		100	102			0.788
USGS O-2060-01	2,4,5-T	86.0		92.8	90.4			2.62
	2,4-D	95.6		108	109			1.48
	2,4-DB	81.2		91.2	90.8			0.440
	Acetaminophen	114		66.0	69.2			4.73
	Acifluorfen	93.6		86.0	88.8			3.20
	Bentazon	122		145	145			0.264
	Carbamazepine	109		108	102			4.95
	Dichlorprop	88.0		94.8	91.6			3.43
	Dinoseb	82.8		100	97.6			2.43
	Diuron	108		100	102			1.97
	Fenuron	108		100	103			3.15
	Fluridone	110		102	110			7.91
	Imidacloprid	114						0.475
	Linuron	92.0		104	86.8			17.6
	MCPA	90.0		92.8	90.8			2.18
	MCPP	90.4		95.2	97.6			2.49
	Primidone	92.0		85.6	86.0			0.466
	Silvex	108		120	126			5.19

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
DEP SOP: GC-011-5 (based on EPA 608 and 617) / E31780	Organochlorine pesticides (low levels) in water matrices by GC/ECD.	1812197
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1812183
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1812183
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1812183
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1812184
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1812184
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1812184
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1812184
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1812185

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1812641
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1812639
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1812640
SM 2120 B / E31780	True Color measured at 450 nm	1812183
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1812183
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1812183
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1812183
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1812183
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1812184
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1812639
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1812639

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: GC-011-5 (based on EPA 608 and 617)	06/29/2016	07/01/2016	Fe-Val Siddell	07/07/2016	Vandana T. Nagar	1812197
EPA 180.1 Rev. 2.0	06/29/2016			06/29/2016 15:59	Sima Feizi	1812183
EPA 300.0 Rev. 2.1	06/29/2016			07/13/2016	Ping Hua	1812183
EPA 350.1 Rev. 2.0	06/29/2016			07/06/2016	Diana M. Turner	1812184
EPA 351.2 Rev. 2.0	06/29/2016	07/05/2016	Sofia Elnemr	07/07/2016	Christopher Armour	1812184
EPA 353.2 Rev. 2.0	06/29/2016			07/01/2016	Beverly Y. Sanders	1812184
EPA 365.1 Rev. 2.0	06/29/2016	07/01/2016	Vijayalakshmi Reddy	07/05/2016	Lipi Saha	1812184
EPA 365.1 Rev. 2.0 dissolved	06/29/2016			06/29/2016 15:58	Julia Storbeck	1812185
EPA 8270D	06/30/2016	07/01/2016	John Kaba	07/11/2016	Irina Carbone	1812641
EPA 8321B	06/30/2016	07/01/2016	Mohammad Ghaffari	07/01/2016	Mohammad Ghaffari	1812639
	06/30/2016	07/05/2016	Hoor Shaik	07/05/2016	Juyoung Kim	1812640
SM 2120 B	06/29/2016			06/29/2016 16:39	Rochelle Y Jackson	1812183
SM 2320 B-97	06/29/2016			07/08/2016	Dale L. Simmons	1812183
SM 2540 C-97	06/29/2016			07/01/2016	Yijie Li	1812183
SM 2540 D-97	06/29/2016			07/01/2016	Yijie Li	1812183
SM 4500 F-C-97	06/29/2016			07/08/2016	Dale L. Simmons	1812183
SM 5310 B-00	06/29/2016			07/07/2016	Sofia Elnemr	1812184
USGS O-2060-01	06/30/2016	07/05/2016	Hoor Shaik	07/05/2016	Juyoung Kim	1812639
	06/30/2016	07/05/2016	Hoor Shaik	07/07/2016	Juyoung Kim	1812639