

Chemical Analysis Report

SO-DIST-2016-03-08-02

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

Event Description: **SMP: Lake Letta**
Request ID: **RQ-2016-03-07-22**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901
Attn: Ben Paswater

For additional information please contact
Timothy W. Fitzpatrick
Liang-Tsair Lin, Ph.D.
Colin Wright, Ph.D.
Thekkekalathil Chandrasekhar, PhD, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 31-MAR-2016 15:28

A handwritten signature in black ink, appearing to read "Liang Lin", is written over a light gray, textured background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: 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: Lake Letta @ Center

Collection Date/Time: 03/07/2016 11:50

Field ID: SD030716-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777708	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P299952	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P300101	
		Sulfate	23		mg SO4/L	P300104	
	SM 2120 B	Color (true)	15		PCU	P299988	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P300452	
	SM 2540 C-97	TDS	104	A	mg/L	P300417	
	SM 2540 D-97	TSS	3	I	mg/L	P300128	
	SM 4500 F-C-97	Fluoride	0.085	I	mg F/L	P300456	
1777709	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P300472	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.60		mg N/L	P300720	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.21		mg N/L	P300302	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P300444	
	SM 5310 B-00	Organic Carbon	6.1		mg C/L	P300325	
1777710	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P299956	
1777713	EPA 8321B	Glyphosate**	10	U	ug/L	P300193	
	USGS O-2060-01	2,4-D	0.0039	I	ug/L	P299754	MS
		Diuron	0.0043	I	ug/L	P299754	
		Fenuron	0.0080	U	ug/L	P299754	
		2,4,5-T	0.0020	U	ug/L	P299754	
		Acifluorfen	0.0020	U	ug/L	P299754	
		Imidacloprid	0.12		ug/L	P299754	
		Bentazon	0.031		ug/L	P299754	
		Linuron	0.0040	U	ug/L	P299754	
		Acetaminophen**	0.0040	U	ug/L	P299754	
		Carbamazepine**	4.4E-04	I	ug/L	P299754	
		Silvex	0.0020	U	ug/L	P299754	MS
		Primidone**	0.0080	U	ug/L	P299754	
		Fluridone**	0.0013	I	ug/L	P299754	
1777714	EPA 8321B	Pyraclostrobin**	0.0020	U	ug/L	P299752	
1777715	DEP SOP: GC-011-5 (based on EPA 608 and 617)	Aldrin	0.0020	U	ug/L	P299991	
		Alpha-BHC	0.0020	U	ug/L	P299991	
		Beta-BHC	0.0020	U	ug/L	P299991	
		Delta-BHC	0.0020	U	ug/L	P299991	
		Gamma-BHC	0.0020	U	ug/L	P299991	
		Carbophenothion	0.0060	U	ug/L	P299991	
		Chlordane	0.020	U	ug/L	P299991	
		Chlorothalonil	0.0080	U	ug/L	P299991	
		Cypermethrin	0.012	U	ug/L	P299991	
		DDD-p,p'	0.0040	U	ug/L	P299991	
		DDE-p,p'	0.0040	U	ug/L	P299991	
		DDT-p,p'	0.0040	U	ug/L	P299991	
		Dicofol	0.024	UJ	ug/L	P299991	CCV

Field ID: SD030716-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777715	DEP SOP: GC-011-5 (based on EPA 608 and 617)	Diieldrin	0.0020	U	ug/L	P299991	
		Endosulfan I	0.0020	U	ug/L	P299991	
		Endosulfan II	0.0020	U	ug/L	P299991	
		Endosulfan Sulfate	0.0040	U	ug/L	P299991	
		Endrin	0.0040	U	ug/L	P299991	
		Endrin Aldehyde	0.0040	U	ug/L	P299991	
		Heptachlor	0.0020	U	ug/L	P299991	
		Heptachlor Epoxide	0.0020	U	ug/L	P299991	
		Methoxychlor	0.010	U	ug/L	P299991	
		Mirex	0.0040	U	ug/L	P299991	
		Permethrin	0.010	U	ug/L	P299991	
		Trifluralin	0.0080	U	ug/L	P299991	
1777716	EPA 8270D	Ametryn**	0.32	U	ng/L	P300212	
		Atrazine**	13		ng/L	P300212	
		Chlorpyrifos Ethyl**	0.21	I	ng/L	P300212	
		Chlorpyrifos Methyl**	0.10	U	ng/L	P300212	
		Disulfoton**	0.32	U	ng/L	P300212	
		Ethion**	0.15	U	ng/L	P300212	
		Ethoprop**	0.10	U	ng/L	P300212	
		Hexazinone**	9.9		ng/L	P300212	
		Malathion**	0.92	I	ng/L	P300212	
		Metribuzin**	0.33	I	ng/L	P300212	
		Mevinphos**	0.50	U	ng/L	P300212	
		Norflurazon**	250		ng/L	P300212	
		Phorate**	0.25	U	ng/L	P300212	
		Prometryn**	0.20	U	ng/L	P300212	
		Simazine**	4.3		ng/L	P300212	
		Atrazine Desethyl**	2.6	I	ng/L	P300212	
		Prometon**	0.90	U	ng/L	P300212	
		Fipronil**	0.25	U	ng/L	P300212	
		Molinate**	0.30	U	ng/L	P300212	
		Pendimethalin**	2.0	U	ng/L	P300212	
		Terbufos**	0.10	U	ng/L	P300212	
		EPTC**	1.2	U	ng/L	P300212	
		Terbuthylazine**	0.42	U	ng/L	P300212	
		Bromacil**	40		ng/L	P300212	
		Fipronil Sulfide**	0.15	U	ng/L	P300212	
		Fipronil Sulfone**	0.15	U	ng/L	P300212	
		Alachlor**	0.25	U	ng/L	P300212	
		Azinphos Methyl**	2.2	U	ng/L	P300212	
		Butylate**	0.40	U	ng/L	P300212	
		Demeton**	1.0	U	ng/L	P300212	
		Diazinon**	0.12	U	ng/L	P300212	
		Fenamiphos**	0.25	U	ng/L	P300212	

Field ID: SD030716-5

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777716	EPA 8270D	Fonofos**	0.20	U	ng/L	P300212	
		Metalaxyl**	54		ng/L	P300212	
		Metolachlor**	1.1		ng/L	P300212	
		Acetochlor**	0.25	U	ng/L	P300212	
		Cyanazine**	0.50	U	ng/L	P300212	
		Parathion Ethyl**	0.25	U	ng/L	P300212	
		Parathion Methyl**	0.25	UJ	ng/L	P300212	LCS

Ref. Method and Comment:

SM 2540 D-97: The precision data is unavailable due to the low analyte concentration in the QC sample.

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

EPA 8270D: MS accuracy for Atrazine, Metalaxyl, Bromacil and Norflurazon not assessed due to high content of these parameters in the sample spiked. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

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

Batch ID: P299991

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
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
Trifluralin	0.0080	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P299952

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report

Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300101

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300104

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300472

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300720

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300302

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300444

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

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

Reference Method: EPA 8270D
Batch ID: P300212

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P300212

Component	Result	Code	Units
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
Metaxyl	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	2.0	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
Terbutylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P299752

Component	Result	Code	Units
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P300193

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P299988

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300452

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P300452

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

Reference Method: SM 2540 C-97
Batch ID: P300417

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300128

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300456

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P300325

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

Reference Method: USGS O-2060-01
Batch ID: P299754

Component	Result	Code	Units
2,4,5-T	0.0020	U	ug/L
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0040	U	ug/L
Acifluorfen	0.0020	U	ug/L
Bentazon	0.0020	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Diuron	0.0020	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
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: P299991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

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

Batch ID: P299991

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	77.5	91.9	P/P	70 - 130
Alpha-BHC	75.6	92.4	P/P	70 - 130
Beta-BHC	106	127	P/P	70 - 130
DDD-p,p'	88.4	106	P/P	70 - 130
DDE-p,p'	84.1	100	P/P	70 - 130
DDT-p,p'	85.8	108	P/P	70 - 130
Delta-BHC	74.3	89.7	P/P	70 - 130
Dieldrin	87.0	104	P/P	70 - 130
Endosulfan I	84.6	101	P/P	70 - 130
Endosulfan II	107	111	P/P	70 - 130
Endosulfan Sulfate	94.7	115	P/P	70 - 130
Endrin	91.7	110	P/P	81 - 147
Endrin Aldehyde	82.7	95.8	P/P	70 - 130
Gamma-BHC	70.8	85.2	P/P	70 - 130
Heptachlor	71.8	85.5	P/P	70 - 130
Heptachlor Epoxide	87.1	105	P/P	70 - 130
Methoxychlor	99.3	118	P/P	86 - 145

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300101

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300104

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300472

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P300720

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P300302

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: P300444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P300444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	91.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P299956

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

Reference Method: EPA 8270D
 Batch ID: P300212

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	92.9	99.9	P/P	84 - 119
Alachlor	93.9	98.5	P/P	84 - 121
Ametryn	101	103	P/P	66 - 127
Atrazine	96.6	101	P/P	72 - 119
Atrazine Desethyl	61.3	75.8	P/P	21 - 111
Azinphos Methyl	133	108	P/P	79 - 185
Bromacil	88.8	87.3	P/P	39 - 122
Butylate	59.0	65.8	P/P	36 - 94.0
Chlorpyrifos Ethyl	98.1	93.1	P/P	54 - 101
Chlorpyrifos Methyl	93.0	85.6	P/P	28 - 114
Cyanazine	117	114	P/P	58 - 201
Demeton	79.3	77.9	P/P	57 - 130
Diazinon	92.7	92.5	P/P	79 - 124
Disulfoton	97.6	85.1	P/P	45 - 140
EPTC	53.5	61.5	P/P	43 - 95.0
Ethion	107	106	P/P	65 - 125
Ethoprop	86.6	73.7	P/P	69 - 107
Fenamiphos	113	97.7	P/P	78 - 129
Fipronil	80.7	102	P/P	62 - 125
Fipronil Sulfide	78.8	99.1	P/P	65 - 119
Fipronil Sulfone	80.4	97.5	P/P	64 - 122
Fonofos	89.5	78.2	P/P	70 - 112
Hexazinone	105	101	P/P	44 - 147
Malathion	109	111	P/P	72 - 125
Metaxyl	90.3	89.8	P/P	83 - 113
Metolachlor	95.1	102	P/P	85 - 120
Metribuzin	93.2	102	P/P	68 - 129
Mevinphos	93.7	73.7	P/P	35 - 125
Molinate	66.8	61.8	P/P	51 - 100
Norflurazon	96.6	96.0	P/P	66 - 127
Parathion Ethyl	91.1	87.2	P/P	86 - 108
Parathion Methyl	97.3	86.6	P/F	87 - 125
Pendimethalin	76.0	76.2	P/P	53 - 136
Phorate	86.7	73.4	P/P	52 - 113
Prometon	97.4	107	P/P	67 - 125
Prometryn	99.7	106	P/P	73 - 114
Simazine	96.6	93.5	P/P	66 - 123
Terbufos	90.8	81.3	P/P	58 - 116
Terbutylazine	95.6	105	P/P	77 - 113

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P299752

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Pyraclostrobin	78.8		P	40 - 140

Reference Method: EPA 8321B
Batch ID: P300193

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	95.4		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P300452

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P300456

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P300325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.4		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P299754

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	60.0		P	40 - 140
2,4-D	69.6		P	40 - 140
Acetaminophen	41.2		P	40 - 140
Acifluorfen	70.4		P	40 - 140
Bentazon	89.2		P	40 - 140
Carbamazepine	114		P	40 - 140
Diuron	85.6		P	40 - 140
Fenuron	90.4		P	40 - 140
Fluridone	92.0		P	40 - 140
Imidacloprid	90.8		P	40 - 160
Linuron	88.4		P	40 - 140
Primidone	69.6		P	40 - 140
Silvex	68.8		P	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P299991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P299991

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1778652	Aldrin	90.2	86.0	P/P	70 - 130
1778652	Alpha-BHC	90.7	81.7	P/P	70 - 130
1778652	Beta-BHC	101	105	P/P	70 - 130
1778652	DDD-p,p'	99.1	95.8	P/P	70 - 130
1778652	DDE-p,p'	95.6	94.6	P/P	70 - 130
1778652	DDT-p,p'	106	103	P/P	70 - 130
1778652	Delta-BHC	89.2	86.8	P/P	70 - 130
1778652	Dieldrin	91.3	89.8	P/P	70 - 130
1778652	Endosulfan I	89.5	86.9	P/P	70 - 130
1778652	Endosulfan II	104	104	P/P	70 - 130
1778652	Endosulfan Sulfate	112	102	P/P	70 - 130
1778652	Endrin	103	100	P/P	81 - 147
1778652	Endrin Aldehyde	92.0	91.1	P/P	70 - 130
1778652	Gamma-BHC	83.1	83.1	P/P	70 - 130
1778652	Heptachlor	99.4	86.5	P/P	70 - 130
1778652	Heptachlor Epoxide	87.5	85.8	P/P	70 - 130
1778652	Methoxychlor	119	117	P/P	86 - 145

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300101

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777708	Chloride	103	104	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777708	Sulfate	99.7	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300472

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777709	Ammonia-N	99.5	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300720

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777694	Kjeldahl Nitrogen	98.8	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300302

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777554	NO2NO3-N	97.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777694	Total-P	91.3	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777555	O-Phosphate-P	93.1	92.8	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P300212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777716	Acetochlor	100	96.7	P/P	84 - 119
1777716	Alachlor	98.1	95.4	P/P	84 - 121
1777716	Ametryn	126	123	P/P	66 - 127
1777716	Atrazine Desethyl	52.9	41.4	P/P	21 - 111
1777716	Azinphos Methyl	158	146	P/P	79 - 185
1777716	Butylate	67.7	55.3	P/P	36 - 94.0
1777716	Chlorpyrifos Ethyl	98.1	85.7	P/P	54 - 101
1777716	Chlorpyrifos Methyl	93.1	91.1	P/P	28 - 114
1777716	Cyanazine	153	153	P/P	58 - 201
1777716	Demeton	86.5	81.5	P/P	57 - 130
1777716	Diazinon	100	96.4	P/P	79 - 124
1777716	Disulfoton	92.4	83.0	P/P	45 - 140
1777716	EPTC	57.4	52.4	P/P	43 - 95.0
1777716	Ethion	98.1	99.3	P/P	65 - 125
1777716	Ethoprop	93.2	95.6	P/P	69 - 107
1777716	Fenamiphos	126	127	P/P	78 - 129
1777716	Fipronil	111	108	P/P	62 - 125
1777716	Fipronil Sulfide	104	99.7	P/P	65 - 119
1777716	Fipronil Sulfone	107	102	P/P	64 - 122
1777716	Fonofos	95.1	93.3	P/P	70 - 112
1777716	Hexazinone	97.4	94.9	P/P	44 - 147
1777716	Malathion	113	109	P/P	72 - 125
1777716	Metolachlor	101	96.2	P/P	85 - 120
1777716	Metribuzin	103	106	P/P	68 - 129
1777716	Mevinphos	106	99.1	P/P	35 - 125
1777716	Molinate	75.5	70.6	P/P	51 - 100
1777716	Parathion Ethyl	90.7	91.2	P/P	86 - 108
1777716	Parathion Methyl	110	110	P/P	87 - 125
1777716	Pendimethalin	70.3	72.2	P/P	53 - 136
1777716	Phorate	90.7	87.9	P/P	52 - 113
1777716	Prometon	121	117	P/P	67 - 125
1777716	Prometryn	110	105	P/P	73 - 114
1777716	Simazine	94.0	87.5	P/P	66 - 123
1777716	Terbufos	97.0	94.2	P/P	58 - 116
1777716	Terbuthylazine	97.0	95.8	P/P	77 - 113

Reference Method: EPA 8321B
Batch ID: P299752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P299752

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777262	Pyraclostrobin	87.2	96.8	P/P	40 - 140

Reference Method: EPA 8321B
Batch ID: P300193

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777713	Glyphosate	50.2	51.6	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P300456

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777690	Fluoride	94.6	95.1	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P300325

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777554	Organic Carbon	93.2	92.0	P/P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P299754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777300	2,4,5-T	92.8	96.8	P/P	40 - 140
1777300	2,4-D	142	148	F/F	40 - 140
1777300	Acetaminophen	55.6	54.8	P/P	40 - 140
1777300	Acifluorfen	77.6	87.2	P/P	40 - 140
1777300	Bentazon	133	132	P/P	40 - 140
1777300	Carbamazepine	64.4	67.2	P/P	40 - 140
1777300	Diuron	45.2	44.4	P/P	40 - 140
1777300	Fenuron	56.0	58.0	P/P	40 - 140
1777300	Fluridone	78.8	77.6	P/P	40 - 140
1777300	Imidacloprid	105	109	P/P	40 - 160
1777300	Linuron	68.0	66.4	P/P	40 - 140
1777300	Primidone	84.8	86.4	P/P	40 - 140
1777300	Silvex	138	149	P/F	40 - 140

Quality Assurance Report Precision

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P299991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778652	Aldrin	4.74	Spike	P	0 - 30
1778652	Alpha-BHC	10.4	Spike	P	0 - 30
1778652	Beta-BHC	4.52	Spike	P	0 - 30
1778652	DDD-p,p'	3.43	Spike	P	0 - 30
1778652	DDE-p,p'	1.07	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: DEP SOP: GC-011-5 (based on EPA 608 and 617)
Batch ID: P299991

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1778652	DDT-p,p'	2.92	Spike	P	0 - 30
1778652	Delta-BHC	2.69	Spike	P	0 - 30
1778652	Dieldrin	1.24	Spike	P	0 - 30
1778652	Endosulfan I	2.92	Spike	P	0 - 30
1778652	Endosulfan II	0.520	Spike	P	0 - 30
1778652	Endosulfan Sulfate	9.55	Spike	P	0 - 30
1778652	Endrin	2.58	Spike	P	0 - 30
1778652	Endrin Aldehyde	0.957	Spike	P	0 - 30
1778652	Gamma-BHC	0.0746	Spike	P	0 - 30
1778652	Heptachlor	13.9	Spike	P	0 - 30
1778652	Heptachlor Epoxide	0.836	Spike	P	0 - 30
1778652	Methoxychlor	2.42	Spike	P	0 - 30
LFB	Aldrin	16.9	LCS	P	0 - 30
LFB	Alpha-BHC	20.1	LCS	P	0 - 30
LFB	Beta-BHC	17.9	LCS	P	0 - 30
LFB	DDD-p,p'	18.4	LCS	P	0 - 30
LFB	DDE-p,p'	17.3	LCS	P	0 - 30
LFB	DDT-p,p'	22.6	LCS	P	0 - 30
LFB	Delta-BHC	18.8	LCS	P	0 - 30
LFB	Dieldrin	17.8	LCS	P	0 - 30
LFB	Endosulfan I	17.7	LCS	P	0 - 30
LFB	Endosulfan II	3.37	LCS	P	0 - 30
LFB	Endosulfan Sulfate	19.0	LCS	P	0 - 30
LFB	Endrin	18.1	LCS	P	0 - 30
LFB	Endrin Aldehyde	14.8	LCS	P	0 - 30
LFB	Gamma-BHC	18.5	LCS	P	0 - 30
LFB	Heptachlor	17.4	LCS	P	0 - 30
LFB	Heptachlor Epoxide	18.9	LCS	P	0 - 30
LFB	Methoxychlor	17.5	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P299952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777691	Turbidity	0.655	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300101

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777708	Chloride	0.530	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777708	Sulfate	0.318	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300472

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777709	Ammonia-N	1.32	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300720

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777694	Kjeldahl Nitrogen	1.89	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777554	NO2NO3-N	0.480	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777694	Total-P	4.58	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777555	O-Phosphate-P	0.300	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P300212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777716	Acetochlor	3.50	Spike	P	0 - 30
1777716	Alachlor	2.79	Spike	P	0 - 30
1777716	Ametryn	2.77	Spike	P	0 - 30
1777716	Atrazine	0.865	Spike	P	0 - 30
1777716	Atrazine Desethyl	19.1	Spike	P	0 - 30
1777716	Azinphos Methyl	8.07	Spike	P	0 - 30
1777716	Bromacil	5.31	Spike	P	0 - 30
1777716	Butylate	20.1	Spike	P	0 - 30
1777716	Chlorpyrifos Ethyl	12.9	Spike	P	0 - 30
1777716	Chlorpyrifos Methyl	2.14	Spike	P	0 - 30
1777716	Cyanazine	0.200	Spike	P	0 - 30
1777716	Demeton	5.91	Spike	P	0 - 30
1777716	Diazinon	3.93	Spike	P	0 - 30
1777716	Disulfoton	10.8	Spike	P	0 - 30
1777716	EPTC	9.17	Spike	P	0 - 30
1777716	Ethion	1.21	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P300212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777716	Ethoprop	2.45	Spike	P	0 - 30
1777716	Fenamiphos	0.393	Spike	P	0 - 30
1777716	Fipronil	2.75	Spike	P	0 - 30
1777716	Fipronil Sulfide	3.94	Spike	P	0 - 30
1777716	Fipronil Sulfone	4.61	Spike	P	0 - 30
1777716	Fonofos	1.92	Spike	P	0 - 30
1777716	Hexazinone	1.54	Spike	P	0 - 30
1777716	Malathion	3.14	Spike	P	0 - 30
1777716	Metalaxyl	4.13	Spike	P	0 - 30
1777716	Metolachlor	4.05	Spike	P	0 - 30
1777716	Metribuzin	2.93	Spike	P	0 - 30
1777716	Mevinphos	7.14	Spike	P	0 - 30
1777716	Molinate	6.62	Spike	P	0 - 30
1777716	Norflurazon	0.377	Spike	P	0 - 30
1777716	Parathion Ethyl	0.605	Spike	P	0 - 30
1777716	Parathion Methyl	0.253	Spike	P	0 - 30
1777716	Pendimethalin	2.74	Spike	P	0 - 30
1777716	Phorate	3.06	Spike	P	0 - 30
1777716	Prometon	3.54	Spike	P	0 - 30
1777716	Prometryn	4.07	Spike	P	0 - 30
1777716	Simazine	3.64	Spike	P	0 - 30
1777716	Terbufos	2.97	Spike	P	0 - 30
1777716	Terbuthylazine	1.21	Spike	P	0 - 30
LFB	Acetochlor	7.21	LCS	P	0 - 30
LFB	Alachlor	4.79	LCS	P	0 - 30
LFB	Ametryn	1.93	LCS	P	0 - 30
LFB	Atrazine	4.27	LCS	P	0 - 30
LFB	Atrazine Desethyl	21.1	LCS	P	0 - 30
LFB	Azinphos Methyl	21.3	LCS	P	0 - 30
LFB	Bromacil	1.66	LCS	P	0 - 30
LFB	Butylate	10.9	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	5.26	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	8.31	LCS	P	0 - 30
LFB	Cyanazine	2.59	LCS	P	0 - 30
LFB	Demeton	1.88	LCS	P	0 - 30
LFB	Diazinon	0.221	LCS	P	0 - 30
LFB	Disulfoton	13.7	LCS	P	0 - 30
LFB	EPTC	14.0	LCS	P	0 - 30
LFB	Ethion	0.0418	LCS	P	0 - 30
LFB	Ethoprop	16.1	LCS	P	0 - 30
LFB	Fenamiphos	14.3	LCS	P	0 - 30
LFB	Fipronil	22.9	LCS	P	0 - 30
LFB	Fipronil Sulfide	22.8	LCS	P	0 - 30
LFB	Fipronil Sulfone	19.2	LCS	P	0 - 30
LFB	Fonofos	13.5	LCS	P	0 - 30
LFB	Hexazinone	3.73	LCS	P	0 - 30
LFB	Malathion	2.18	LCS	P	0 - 30
LFB	Metalaxyl	0.473	LCS	P	0 - 30
LFB	Metolachlor	6.76	LCS	P	0 - 30
LFB	Metribuzin	9.49	LCS	P	0 - 30
LFB	Mevinphos	24.0	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P300212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Molinate	7.76	LCS	P	0 - 30
LFB	Norflurazon	0.579	LCS	P	0 - 30
LFB	Parathion Ethyl	4.41	LCS	P	0 - 30
LFB	Parathion Methyl	11.6	LCS	P	0 - 30
LFB	Pendimethalin	0.180	LCS	P	0 - 30
LFB	Phorate	16.5	LCS	P	0 - 30
LFB	Prometon	9.41	LCS	P	0 - 30
LFB	Prometryn	6.49	LCS	P	0 - 30
LFB	Simazine	3.25	LCS	P	0 - 30
LFB	Terbufos	11.0	LCS	P	0 - 30
LFB	Terbuthylazine	9.34	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P299752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777262	Pyraclostrobin	10.4	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P300193

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777713	Glyphosate	2.75	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P299988

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777723	Color (true)	0.949	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P300452

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777690	Total Alkalinity	1.30	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P300417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777708	TDS	6.76	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P300456

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777690	Fluoride	0.487	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P300325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777554	Organic Carbon	0.626	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P299754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777300	2,4,5-T	4.22	Spike	P	0 - 30
1777300	2,4-D	3.25	Spike	P	0 - 30
1777300	Acetaminophen	1.45	Spike	P	0 - 30
1777300	Acifluorfen	11.7	Spike	P	0 - 30
1777300	Bentazon	0.782	Spike	P	0 - 30
1777300	Carbamazepine	4.26	Spike	P	0 - 30
1777300	Diuron	1.79	Spike	P	0 - 30
1777300	Fenuron	3.51	Spike	P	0 - 30
1777300	Fluridone	1.37	Spike	P	0 - 30
1777300	Imidacloprid	3.47	Spike	P	0 - 30
1777300	Linuron	2.38	Spike	P	0 - 30
1777300	Primidone	1.87	Spike	P	0 - 30
1777300	Silvex	7.53	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: 1777713
Field Sample ID: SD030716-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	58.8	P	50 - 150
USGS O-2060-01	2,4-D-d3	68.6	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	58.6	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	92.6	P	40 - 160
USGS O-2060-01	Diuron-d6	89.6	P	40 - 150
USGS O-2060-01	Primidone-d5	99.0	P	40 - 150

Lab Sample ID: 1777714
Field Sample ID: SD030716-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Diuron-d6	88.2	P	40 - 150

Quality Assurance Report Surrogates

Lab Sample ID: 1777715
Field Sample ID: SD030716-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: GC-011-5 (based on EPA 608 and 617)	Decachlorobiphenyl	75.8	P	44 - 128

Lab Sample ID: 1777716
Field Sample ID: SD030716-5

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	111	P	67 - 131
EPA 8270D	Simazine-d10	96.2	P	75 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A68081
Included Lab Sample IDs: 1777708

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68082
Included Lab Sample IDs: 1777710

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	97.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A68089
Included Lab Sample IDs: 1777708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.3	P/P	90 - 110
Sulfate	99.1	98.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A68095
Included Lab Sample IDs: 1777708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.5	97.6	P/P	85 - 115

Reference Method: EPA 8321B
Run ID: A68122
Included Lab Sample IDs: 1777714

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	89.2	90.4	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A68157
Included Lab Sample IDs: 1777713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	101	92.2	P/P	50 - 150
2,4-D	106	118	P/P	50 - 150
Acifluorfen	115	116	P/P	50 - 150
Bentazon	117	96.0	P/P	50 - 150
Silvex	106	109	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A68163
Included Lab Sample IDs: 1777713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	94.0	91.0	P/P	70 - 130

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A68199
Included Lab Sample IDs: 1777709

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

Reference Method: SM 5310 B-00
Run ID: A68205
Included Lab Sample IDs: 1777709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.6	94.2	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A68254
Included Lab Sample IDs: 1777708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A68254
Included Lab Sample IDs: 1777708

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.5	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A68260
Included Lab Sample IDs: 1777709

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

Quality Assurance Report Calibration Verification

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

Run ID: A68305

Included Lab Sample IDs: 1777715

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	98.4	99.8	P/P	85 - 115
Alpha-BHC	97.5	99.0	P/P	85 - 115
Beta-BHC	104	101	P/P	85 - 115
Carbophenothion	104	96.2	P/P	90 - 110
Chlordane	106	110	P/P	85 - 115
Chlorothalonil	106	95.0	P/P	90 - 110
Cypermethrin	101	97.3	P/P	85 - 115
DDD-p,p'	101	100	P/P	85 - 115
DDE-p,p'	98.0	99.4	P/P	85 - 115
DDT-p,p'	96.7	97.3	P/P	85 - 115
Delta-BHC	95.5	97.8	P/P	85 - 115
Dicofol	105	112*	P/F	90 - 110
Dieldrin	99.4	101	P/P	85 - 115
Endosulfan I	101	102	P/P	85 - 115
Endosulfan II	100	101	P/P	85 - 115
Endosulfan Sulfate	99.3	101	P/P	85 - 115
Endrin	96.2	97.8	P/P	85 - 115
Endrin Aldehyde	102	102	P/P	85 - 115
Gamma-BHC	97.7	98.9	P/P	85 - 115
Heptachlor	99.9	99.7	P/P	85 - 115
Heptachlor Epoxide	100	102	P/P	85 - 115
Methoxychlor	98.6	99.0	P/P	90 - 110
Mirex	106	102	P/P	90 - 110
Permethrin	108	102	P/P	90 - 110
Trifluralin	106	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68308

Included Lab Sample IDs: 1777709

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68380

Included Lab Sample IDs: 1777709

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.2	96.6	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A68490

Included Lab Sample IDs: 1777716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	99.3		P	80 - 120
Alachlor	100		P	80 - 120
Ametryn	103		P	80 - 120
Atrazine	98.7		P	80 - 120
Atrazine Desethyl	100		P	80 - 120
Azinphos Methyl	106		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A68490
Included Lab Sample IDs: 1777716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromacil	86.2		P	80 - 120
Butylate	97.6		P	80 - 120
Chlorpyrifos Ethyl	99.6		P	80 - 120
Chlorpyrifos Methyl	102		P	80 - 120
Cyanazine	102		P	80 - 120
Demeton	93.8		P	80 - 120
Diazinon	97.0		P	80 - 120
Disulfoton	94.5		P	80 - 120
EPTC	96.3		P	80 - 120
Ethion	98.9		P	80 - 120
Ethoprop	99.8		P	80 - 120
Fenamiphos	96.2		P	80 - 120
Fipronil	95.4		P	80 - 120
Fipronil Sulfide	101		P	80 - 120
Fipronil Sulfone	102		P	80 - 120
Fonofos	96.7		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	100		P	80 - 120
Metalaxyl	101		P	80 - 120
Metolachlor	101		P	80 - 120
Metribuzin	100		P	80 - 120
Mevinphos	98.2		P	80 - 120
Molinate	99.4		P	80 - 120
Parathion Ethyl	92.8		P	80 - 120
Parathion Methyl	99.2		P	80 - 120
Pendimethalin	87.0		P	80 - 120
Phorate	95.1		P	80 - 120
Prometon	97.0		P	80 - 120
Prometryn	101		P	80 - 120
Simazine	102		P	80 - 120
Terbufos	98.2		P	80 - 120
Terbutylazine	98.2		P	80 - 120

Reference Method: EPA 8270D
Run ID: A68492
Included Lab Sample IDs: 1777716

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Norflurazon	102		P	80 - 120

Reference Method: USGS O-2060-01
Run ID: P68122
Included Lab Sample IDs: 1777713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	106	113	P/P	60 - 150
Carbamazepine	112	120	P/P	60 - 150
Diuron	98.4	102	P/P	60 - 150
Fenuron	105	108	P/P	60 - 150
Fluridone	90.8	102	P/P	60 - 150
Imidacloprid	93.6	95.2	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: USGS O-2060-01

Run ID: P68122

Included Lab Sample IDs: 1777713

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Linuron	115	113	P/P	60 - 150
Primidone	99.6	69.6	P/P	60 - 150

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		LCS	Precision SMP	MS
DEP SOP: GC-011-5 (based on EPA 608 and 617)	Aldrin	77.5	91.9	90.2	86.0	16.9		4.74
	Alpha-BHC	75.6	92.4	90.7	81.7	20.1		10.4
	Beta-BHC	106	127	101	105	17.9		4.52
	DDD-p,p'	88.4	106	99.1	95.8	18.4		3.43
	DDE-p,p'	84.1	100	95.6	94.6	17.3		1.07
	DDT-p,p'	85.8	108	106	103	22.6		2.92
	Delta-BHC	74.3	89.7	89.2	86.8	18.8		2.69
	Dieldrin	87.0	104	91.3	89.8	17.8		1.24
	Endosulfan I	84.6	101	89.5	86.9	17.7		2.92
	Endosulfan II	107	111	104	104	3.37		0.520
	Endosulfan Sulfate	94.7	115	112	102	19.0		9.55
	Endrin	91.7	110	103	100	18.1		2.58
	Endrin Aldehyde	82.7	95.8	92.0	91.1	14.8		0.957
	Gamma-BHC	70.8	85.2	83.1	83.1	18.5		0.0746
	Heptachlor	71.8	85.5	99.4	86.5	17.4		13.9
	Heptachlor Epoxide	87.1	105	87.5	85.8	18.9		0.836
	Methoxychlor	99.3	118	119	117	17.5		2.42
EPA 180.1 Rev. 2.0	Turbidity						0.655	
EPA 300.0 Rev. 2.1	Chloride	104		103	104			0.530
	Sulfate	101		99.7	100			0.318
EPA 350.1 Rev. 2.0	Ammonia-N	99.5		99.5	101			1.32
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100		98.8	95.5			1.89
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0		97.5	98.0			0.480
EPA 365.1 Rev. 2.0	Total-P	91.0		91.3	95.8			4.58
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9		93.1	92.8			0.300
EPA 8270D	Acetochlor	92.9	99.9	100	96.7	7.21		3.50
	Alachlor	93.9	98.5	98.1	95.4	4.79		2.79
	Ametryn	101	103	126	123	1.93		2.77
	Atrazine	96.6	101			4.27		0.865
	Atrazine Desethyl	61.3	75.8	52.9	41.4	21.1		19.1
	Azinphos Methyl	133	108	158	146	21.3		8.07
	Bromacil	88.8	87.3			1.66		5.31
	Butylate	59.0	65.8	67.7	55.3	10.9		20.1
	Chlorpyrifos Ethyl	98.1	93.1	98.1	85.7	5.26		12.9
	Chlorpyrifos Methyl	93.0	85.6	93.1	91.1	8.31		2.14
	Cyanazine	117	114	153	153	2.59		0.200
	Demeton	79.3	77.9	86.5	81.5	1.88		5.91

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	Diazinon	92.7	92.5	100	96.4	0.221	3.93
	Disulfoton	97.6	85.1	92.4	83.0	13.7	10.8
	EPTC	53.5	61.5	57.4	52.4	14.0	9.17
	Ethion	107	106	98.1	99.3	0.0418	1.21
	Ethoprop	86.6	73.7	93.2	95.6	16.1	2.45
	Fenamiphos	113	97.7	126	127	14.3	0.393
	Fipronil	80.7	102	111	108	22.9	2.75
	Fipronil Sulfide	78.8	99.1	104	99.7	22.8	3.94
	Fipronil Sulfone	80.4	97.5	107	102	19.2	4.61
	Fonofos	89.5	78.2	95.1	93.3	13.5	1.92
	Hexazinone	105	101	97.4	94.9	3.73	1.54
	Malathion	109	111	113	109	2.18	3.14
	Metalaxyl	90.3	89.8			0.473	4.13
	Metolachlor	95.1	102	101	96.2	6.76	4.05
	Metribuzin	93.2	102	103	106	9.49	2.93
	Mevinphos	93.7	73.7	106	99.1	24.0	7.14
	Molinate	66.8	61.8	75.5	70.6	7.76	6.62
	Norflurazon	96.6	96.0			0.579	0.377
	Parathion Ethyl	91.1	87.2	90.7	91.2	4.41	0.605
	Parathion Methyl	97.3	86.6	110	110	11.6	0.253
	Pendimethalin	76.0	76.2	70.3	72.2	0.180	2.74
	Phorate	86.7	73.4	90.7	87.9	16.5	3.06
	Prometon	97.4	107	121	117	9.41	3.54
	Prometryn	99.7	106	110	105	6.49	4.07
	Simazine	96.6	93.5	94.0	87.5	3.25	3.64
	Terbufos	90.8	81.3	97.0	94.2	11.0	2.97
	Terbuthylazine	95.6	105	97.0	95.8	9.34	1.21
EPA 8321B	Glyphosate	95.4		50.2	51.6		2.75
	Pyraclostrobin	78.8		87.2	96.8		10.4
	Color (true)					0.949	
SM 2120 B	Total Alkalinity	102				1.30	
SM 2320 B-97	TDS					6.76	
SM 2540 C-97	Fluoride	97.6		94.6	95.1		0.487
SM 4500 F-C-97	Organic Carbon	92.4		93.2	92.0		0.626
SM 5310 B-00	2,4,5-T	60.0		92.8	96.8		4.22
USGS O-2060-01	2,4-D	69.6		142	148		3.25
	Acetaminophen	41.2		55.6	54.8		1.45
	Acifluorfen	70.4		77.6	87.2		11.7
	Bentazon	89.2		133	132		0.782
	Carbamazepine	114		64.4	67.2		4.26
	Diuron	85.6		45.2	44.4		1.79
	Fenuron	90.4		56.0	58.0		3.51
	Fluridone	92.0		78.8	77.6		1.37
	Imidacloprid	90.8		105	109		3.47
	Linuron	88.4		68.0	66.4		2.38
	Primidone	69.6		84.8	86.4		1.87
	Silvex	68.8		138	149		7.53

Reference Method Descriptions

Method / DoH Cert #

Description

Associated Samples

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.	1777715
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1777708
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1777708
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1777708
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1777709
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1777709
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1777709
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1777709
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1777710
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1777716
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1777713
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1777714
SM 2120 B / E31780	True Color measured at 450 nm	1777708
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1777708
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1777708
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1777708
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1777708
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1777709
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1777713
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1777713

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)	03/08/2016	03/10/2016	Fe-Val Siddell	03/17/2016	Vandana T. Nagar	1777715
EPA 180.1 Rev. 2.0	03/08/2016			03/08/2016 15:41	Sima Feizi	1777708
EPA 300.0 Rev. 2.1	03/08/2016			03/09/2016	Julia Storbeck	1777708
EPA 350.1 Rev. 2.0	03/08/2016			03/16/2016	Diana M. Turner	1777709
EPA 351.2 Rev. 2.0	03/08/2016	03/21/2016	Sofia Elnemr	03/22/2016	Christopher Armour	1777709
EPA 353.2 Rev. 2.0	03/08/2016			03/11/2016	Diana M. Turner	1777709
EPA 365.1 Rev. 2.0	03/08/2016	03/16/2016	Christopher Armour	03/18/2016	Lipi Saha	1777709
EPA 365.1 Rev. 2.0 dissolved	03/08/2016			03/08/2016 15:46	Ping Hua	1777710
EPA 8270D	03/08/2016	03/11/2016	Fe-Val Siddell	03/15/2016	Irina Carbone	1777716
	03/08/2016	03/11/2016	Fe-Val Siddell	03/18/2016	Irina Carbone	1777716
EPA 8321B	03/08/2016	03/08/2016	Hoor Shaik	03/09/2016	Juyoung Kim	1777714
	03/08/2016	03/11/2016	Mohammad Ghaffari	03/11/2016	Mohammad Ghaffari	1777713
SM 2120 B	03/08/2016			03/08/2016 16:08	Blanca Fach	1777708
SM 2320 B-97	03/08/2016			03/15/2016	Dale L. Simmons	1777708
SM 2540 C-97	03/08/2016			03/08/2016	Yijie Li	1777708
SM 2540 D-97	03/08/2016			03/08/2016	Yijie Li	1777708
SM 4500 F-C-97	03/08/2016			03/15/2016	Dale L. Simmons	1777708
SM 5310 B-00	03/08/2016			03/11/2016	Sofia Elnemr	1777709
USGS O-2060-01	03/08/2016	03/08/2016	Hoor Shaik	03/09/2016	Juyoung Kim	1777713
	03/08/2016	03/08/2016	Hoor Shaik	03/11/2016	Juyoung Kim	1777713