

Chemical Analysis Report

SE-DIST-2016-03-04-01

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

Event Description: **SMP_Bio weekof2/29**

Request ID: **RQ-2016-02-29-60**

Customer: **SE-DIST**

Project ID: **SMP**

Send Reports to:

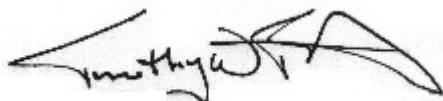
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Jordan Skaggs

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: Timothy Fitzpatrick, Program Administrator

Date Certified: 25-MAR-2016 10:14

A handwritten signature in black ink, appearing to read 'Timothy W. Fitzpatrick', is written over a light blue rectangular 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: Kissimmee @ PC 33

Collection Date/Time: 03/03/2016 10:30

Field ID: G4SE0081_03032016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777288	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P299784	
	EPA 300.0 Rev. 2.1	Chloride	18	A	mg Cl/L	P300102	
		Sulfate	6.1	A	mg SO4/L	P300105	
	SM 2120 B	Color (true)	110		PCU	P299860	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P300269	
	SM 2540 C-97	TDS	93		mg/L	P300376	
	SM 2540 D-97	TSS	4	I	mg/L	P300021	
	SM 4500 F-C-97	Fluoride	0.088	I	mg F/L	P300256	
1777289	EPA 350.1 Rev. 2.0	Ammonia-N	0.026		mg N/L	P300437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.93		mg N/L	P300343	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P300170	
	EPA 365.1 Rev. 2.0	Total-P	0.046		mg P/L	P300322	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P300236	
1777290	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P299775	

Ref. Method and Comment:

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

Sample Location: Kissimmee upstream of S-65C

Collection Date/Time: 03/03/2016 12:20

Field ID: G4SE0082_03032016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777291	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P299784	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P300102	
		Sulfate	5.9		mg SO4/L	P300105	
	SM 2120 B	Color (true)	120		PCU	P299860	
	SM 2320 B-97	Total Alkalinity	25		mg CaCO3/L	P300269	
	SM 2540 C-97	TDS	97		mg/L	P300376	
	SM 2540 D-97	TSS	4	I	mg/L	P300021	
	SM 4500 F-C-97	Fluoride	0.089	I	mg F/L	P300256	
1777292	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P300437	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.97		mg N/L	P300343	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.015		mg N/L	P300170	
	EPA 365.1 Rev. 2.0	Total-P	0.048		mg P/L	P300322	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P300236	
1777293	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.016		mg P/L	P299775	
1777300	EPA 8321B	Glyphosate**	15	I	ug/L	P299737	
	USGS O-2060-01	2,4-D	0.015	J	ug/L	P299754	MS
		Diuron	0.0020	U	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	0.0078	I	ug/L	P299754	
		Bentazon	0.021		ug/L	P299754	
		Linuron	0.0040	U	ug/L	P299754	

Field ID: G4SE0082_03032016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777300	USGS O-2060-01	Acetaminophen**	0.0040	U	ug/L	P299754	
		Carbamazepine**	4.0E-04	U	ug/L	P299754	
		Silvex	0.0020	UJ	ug/L	P299754	MS
		Primidone**	0.0080	U	ug/L	P299754	
		Fluridone**	0.0096		ug/L	P299754	
1777301	DEP SOP: GC-011-5 (based on EPA 608 and 617)	Aldrin	0.0020	U	ug/L	P299778	
		Alpha-BHC	0.0020	U	ug/L	P299778	
		Beta-BHC	0.0020	U	ug/L	P299778	
		Delta-BHC	0.0020	U	ug/L	P299778	
		Gamma-BHC	0.0020	U	ug/L	P299778	
		Carbophenothion	0.0060	U	ug/L	P299778	
		Chlordane	0.020	U	ug/L	P299778	
		Chlorothalonil	0.0080	U	ug/L	P299778	
		Cypermethrin	0.012	U	ug/L	P299778	
		DDD-p,p'	0.0040	UJ	ug/L	P299778	CCV
		DDE-p,p'	0.0040	U	ug/L	P299778	
		DDT-p,p'	0.0040	UJ	ug/L	P299778	CCV
		Dicofol	0.024	UJ	ug/L	P299778	CCV
		Dieldrin	0.0020	U	ug/L	P299778	
		Endosulfan I	0.0020	U	ug/L	P299778	
		Endosulfan II	0.0020	U	ug/L	P299778	
		Endosulfan Sulfate	0.0040	U	ug/L	P299778	
		Endrin	0.0040	U	ug/L	P299778	
		Endrin Aldehyde	0.0040	U	ug/L	P299778	
		Heptachlor	0.0020	U	ug/L	P299778	
		Heptachlor Epoxide	0.0020	U	ug/L	P299778	
		Methoxychlor	0.010	UJ	ug/L	P299778	CCV
		Mirex	0.0040	UJ	ug/L	P299778	CCV
		Permethrin	0.010	U	ug/L	P299778	
		Toxaphene	0.10	U	ug/L	P299778	
		Trifluralin	0.0080	U	ug/L	P299778	
1777302	EPA 8270D	Ametryn**	0.35	I	ng/L	P299750	
		Atrazine**	12		ng/L	P299750	
		Chlorpyrifos Ethyl**	0.10	U	ng/L	P299750	
		Chlorpyrifos Methyl**	0.10	U	ng/L	P299750	
		Disulfoton**	0.32	U	ng/L	P299750	
		Ethion**	0.15	U	ng/L	P299750	
		Ethoprop**	0.10	U	ng/L	P299750	
		Hexazinone**	7.2		ng/L	P299750	
		Malathion**	0.35	U	ng/L	P299750	
		Metribuzin**	0.38	I	ng/L	P299750	
		Mevinphos**	0.50	U	ng/L	P299750	
		Norflurazon**	2.0	I	ng/L	P299750	
		Phorate**	0.25	U	ng/L	P299750	

Field ID: G4SE0082_03032016

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1777302	EPA 8270D	Prometryn**	0.20	U	ng/L	P299750	
		Simazine**	0.62	I	ng/L	P299750	
		Atrazine Desethyl**	1.8	I	ng/L	P299750	
		Prometon**	0.90	U	ng/L	P299750	
		Fipronil**	0.25	U	ng/L	P299750	
		Molinate**	0.30	UJ	ng/L	P299750	MS
		Pendimethalin**	2.0	U	ng/L	P299750	
		Terbufos**	0.10	U	ng/L	P299750	
		EPTC**	1.2	UJ	ng/L	P299750	MS
		Terbutylazine**	0.42	U	ng/L	P299750	
		Bromacil**	15		ng/L	P299750	
		Fipronil Sulfide**	0.15	U	ng/L	P299750	
		Fipronil Sulfone**	0.16	I	ng/L	P299750	
		Alachlor**	0.25	U	ng/L	P299750	
		Azinphos Methyl**	2.2	U	ng/L	P299750	
		Butylate**	0.40	UJ	ng/L	P299750	MS
		Demeton**	1.0	UJ	ng/L	P299750	LCS, MS
		Diazinon**	0.12	U	ng/L	P299750	
		Fenamiphos**	0.25	UJ	ng/L	P299750	LCS
		Fonofos**	0.20	UJ	ng/L	P299750	LCS
		Metalaxyl**	0.83	J	ng/L	P299750	LCS
		Metolachlor**	17		ng/L	P299750	
		Acetochlor**	0.25	U	ng/L	P299750	
		Cyanazine**	0.50	U	ng/L	P299750	
		Parathion Ethyl**	0.25	UJ	ng/L	P299750	LCS
		Parathion Methyl**	0.25	UJ	ng/L	P299750	LCS

Ref. Method and Comment:

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Matrix spike recovery data is unavailable due to high analyte concentration in the QC sample.

EPA 8321B: Results confirmed in re-extraction.

USGS O-2060-01: Triclopyr = 0.0043 I ug/L. Refer to the narrative for an explanation of QC Codes.

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, Bromacil and Metolachlor 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: P299778

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

Quality Assurance Report Method Blank Results

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

Batch ID: P299778

Component	Result	Code	Units
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
Toxaphene	0.10	U	ug/L
Trifluralin	0.0080	U	ug/L

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P299784

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300102

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300105

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300437

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P300343

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P300170

Component	Result	Code	Units
-----------	--------	------	-------

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300170

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300322

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299775

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

Reference Method: EPA 8270D
Batch ID: P299750

Component	Result	Code	Units
Acetochlor	0.25	U	ng/L
Acetochlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Alachlor	0.25	U	ng/L
Ametryn	0.32	U	ng/L
Ametryn	0.32	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine	0.25	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Atrazine Desethyl	1.5	U	ng/L
Azinphos Methyl	2.2	U	ng/L
Azinphos Methyl	2.2	U	ng/L
Bromacil	0.50	U	ng/L
Bromacil	0.50	U	ng/L
Butylate	0.40	U	ng/L
Butylate	0.40	U	ng/L
Chlorpyrifos Ethyl	0.10	U	ng/L
Chlorpyrifos Ethyl	0.10	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L
Cyanazine	0.50	U	ng/L
Cyanazine	0.50	U	ng/L
Demeton	1.0	U	ng/L
Demeton	1.0	U	ng/L
Diazinon	0.12	U	ng/L
Diazinon	0.12	U	ng/L
Disulfoton	0.32	U	ng/L
Disulfoton	0.32	U	ng/L
EPTC	1.2	U	ng/L
EPTC	1.2	U	ng/L
Ethion	0.15	U	ng/L
Ethion	0.15	U	ng/L
Ethoprop	0.10	U	ng/L
Ethoprop	0.10	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270D
Batch ID: P299750

Component	Result	Code	Units
Fenamiphos	0.25	U	ng/L
Fenamiphos	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil	0.25	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfide	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fipronil Sulfone	0.15	U	ng/L
Fonofos	0.20	U	ng/L
Fonofos	0.20	U	ng/L
Hexazinone	0.50	U	ng/L
Hexazinone	0.50	U	ng/L
Malathion	0.35	U	ng/L
Malathion	0.35	U	ng/L
Metalaxyl	0.20	U	ng/L
Metalaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	2.0	U	ng/L
Pendimethalin	2.0	U	ng/L
Phorate	0.25	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P299737

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P299860

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P300269

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

Reference Method: SM 2540 C-97
Batch ID: P300376

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P300021

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P300236

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: P299778

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Toxaphene	91.2	86.3	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300102

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300105

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300437

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P300343

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: P300170

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P300322

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P299775

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	105		P	90 - 110

Reference Method: EPA 8270D

Batch ID: P299750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	86.1	84.5	P/P	84 - 119
Alachlor	85.0	84.1	P/P	84 - 121
Ametryn	96.8	103	P/P	66 - 127
Atrazine	91.7	96.4	P/P	72 - 119

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270D
Batch ID: P299750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Atrazine Desethyl	54.8	64.3	P/P	21 - 111
Azinphos Methyl	91.6	105	P/P	79 - 185
Bromacil	84.0	78.3	P/P	39 - 122
Butylate	51.9	49.0	P/P	36 - 94.0
Chlorpyrifos Ethyl	81.3	80.0	P/P	54 - 101
Chlorpyrifos Methyl	68.6	66.4	P/P	28 - 114
Cyanazine	86.0	89.3	P/P	58 - 201
Demeton	56.5	54.7	F/F	57 - 130
Diazinon	84.5	81.8	P/P	79 - 124
Disulfoton	53.2	58.5	P/P	45 - 140
EPTC	58.2	54.7	P/P	43 - 95.0
Ethion	98.0	94.8	P/P	65 - 125
Ethoprop	72.2	70.3	P/P	69 - 107
Fenamiphos	72.4	61.5	F/F	78 - 129
Fipronil	104	98.9	P/P	62 - 125
Fipronil Sulfide	107	105	P/P	65 - 119
Fipronil Sulfone	105	106	P/P	64 - 122
Fonofos	65.0	63.4	F/F	70 - 112
Hexazinone	74.0	63.3	P/P	44 - 147
Malathion	90.8	86.5	P/P	72 - 125
Metalaxyl	16.5	17.2	F/F	83 - 113
Metolachlor	89.4	89.1	P/P	85 - 120
Metribuzin	90.6	93.3	P/P	68 - 129
Mevinphos	53.6	52.0	P/P	35 - 125
Molinate	53.3	51.5	P/P	51 - 100
Norflurazon	107	104	P/P	66 - 127
Parathion Ethyl	89.0	85.7	P/F	86 - 108
Parathion Methyl	77.0	78.4	F/F	87 - 125
Pendimethalin	80.0	81.1	P/P	53 - 136
Phorate	61.7	62.0	P/P	52 - 113
Prometon	94.5	81.4	P/P	67 - 125
Prometryn	94.4	95.2	P/P	73 - 114
Simazine	84.1	74.9	P/P	66 - 123
Terbufos	66.3	62.0	P/P	58 - 116
Terbuthylazine	92.3	92.5	P/P	77 - 113

Reference Method: EPA 8321B
Batch ID: P299737

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	81.2		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P300269

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

Reference Method: SM 4500 F-C-97
Batch ID: P300256

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	94 - 108

Reference Method: SM 5310 B-00
Batch ID: P300236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.1		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: P299778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777301	Toxaphene	78.4	85.8	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300102

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777288	Chloride	104		P	90 - 110
1777548	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P300105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777288	Sulfate	100		P	90 - 110
1777548	Sulfate	99.8		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P300437

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777289	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P300343

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777490	Kjeldahl Nitrogen	84.0	101	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P300170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777251	NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P300322

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777220	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P299750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777302	Acetochlor	96.6	96.2	P/P	84 - 119
1777302	Alachlor	97.3	94.1	P/P	84 - 121
1777302	Ametryn	104	106	P/P	66 - 127
1777302	Atrazine Desethyl	52.1	68.8	P/P	21 - 111
1777302	Azinphos Methyl	142	172	P/P	79 - 185
1777302	Butylate	35.6	45.8	F/P	36 - 94.0
1777302	Chlorpyrifos Ethyl	94.1	87.3	P/P	54 - 101
1777302	Chlorpyrifos Methyl	87.4	85.9	P/P	28 - 114
1777302	Cyanazine	115	111	P/P	58 - 201
1777302	Demeton	56.5	64.5	F/P	57 - 130
1777302	Diazinon	94.0	93.8	P/P	79 - 124
1777302	Disulfoton	77.1	79.8	P/P	45 - 140
1777302	EPTC	35.6	45.2	F/P	43 - 95.0
1777302	Ethion	98.4	101	P/P	65 - 125
1777302	Ethoprop	75.2	83.6	P/P	69 - 107
1777302	Fenamiphos	104	103	P/P	78 - 129
1777302	Fipronil	106	107	P/P	62 - 125
1777302	Fipronil Sulfide	107	102	P/P	65 - 119
1777302	Fipronil Sulfone	107	110	P/P	64 - 122
1777302	Fonofos	79.6	86.9	P/P	70 - 112
1777302	Hexazinone	102	98.2	P/P	44 - 147
1777302	Malathion	105	108	P/P	72 - 125
1777302	Metaxyl	99.5	95.2	P/P	83 - 113
1777302	Metribuzin	105	103	P/P	68 - 129
1777302	Mevinphos	88.9	106	P/P	35 - 125
1777302	Molinate	49.7	58.1	F/P	51 - 100
1777302	Norflurazon	98.7	110	P/P	66 - 127
1777302	Parathion Ethyl	88.1	94.0	P/P	86 - 108

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P299750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777302	Parathion Methyl	91.8	104	P/P	87 - 125
1777302	Pendimethalin	79.6	82.0	P/P	53 - 136
1777302	Phorate	78.0	90.8	P/P	52 - 113
1777302	Prometon	110	101	P/P	67 - 125
1777302	Prometryn	92.6	93.3	P/P	73 - 114
1777302	Simazine	98.8	105	P/P	66 - 123
1777302	Terbufos	78.1	88.9	P/P	58 - 116
1777302	Terbutylazine	95.9	95.5	P/P	77 - 113

Reference Method: EPA 8321B
Batch ID: P299737

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777261	Glyphosate	67.0	73.2	P/P	40 - 140

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777102	Fluoride	98.0	98.6	P/P	94 - 107

Reference Method: SM 5310 B-00
Batch ID: P300236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1777182	Organic Carbon	99.2		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

Quality Assurance Report Precision

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

Batch ID: P299778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777301	Toxaphene	8.96	Spike	P	0 - 30
LFB	Toxaphene	5.49	LCS	P	0 - 30

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P299784

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777218	Turbidity	0.504	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300102

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777288	Chloride	0.0687	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P300105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777288	Sulfate	0.916	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P300437

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777289	Ammonia-N	0.424	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P300343

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777490	Kjeldahl Nitrogen	9.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P300170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777251	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P300322

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777220	Total-P	1.08	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P299775

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777258	O-Phosphate-P	0.178	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P299750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777302	Acetochlor	0.423	Spike	P	0 - 30
1777302	Alachlor	3.42	Spike	P	0 - 30
1777302	Ametryn	2.21	Spike	P	0 - 30
1777302	Atrazine	0.267	Spike	P	0 - 30
1777302	Atrazine Desethyl	24.2	Spike	P	0 - 30
1777302	Azinphos Methyl	19.1	Spike	P	0 - 30
1777302	Bromacil	6.00	Spike	P	0 - 30
1777302	Butylate	25.2	Spike	P	0 - 30
1777302	Chlorpyrifos Ethyl	7.48	Spike	P	0 - 30
1777302	Chlorpyrifos Methyl	1.72	Spike	P	0 - 30
1777302	Cyanazine	4.16	Spike	P	0 - 30
1777302	Demeton	13.2	Spike	P	0 - 30
1777302	Diazinon	0.284	Spike	P	0 - 30
1777302	Disulfoton	3.52	Spike	P	0 - 30
1777302	EPTC	23.8	Spike	P	0 - 30
1777302	Ethion	2.67	Spike	P	0 - 30
1777302	Ethoprop	10.6	Spike	P	0 - 30
1777302	Fenamiphos	0.670	Spike	P	0 - 30
1777302	Fipronil	1.40	Spike	P	0 - 30
1777302	Fipronil Sulfide	5.25	Spike	P	0 - 30
1777302	Fipronil Sulfone	2.18	Spike	P	0 - 30
1777302	Fonofos	8.79	Spike	P	0 - 30
1777302	Hexazinone	2.71	Spike	P	0 - 30
1777302	Malathion	2.23	Spike	P	0 - 30
1777302	Metalaxyl	4.04	Spike	P	0 - 30
1777302	Metolachlor	3.14	Spike	P	0 - 30
1777302	Metribuzin	1.97	Spike	P	0 - 30
1777302	Mevinphos	17.6	Spike	P	0 - 30
1777302	Molinate	15.6	Spike	P	0 - 30
1777302	Norflurazon	9.32	Spike	P	0 - 30
1777302	Parathion Ethyl	6.49	Spike	P	0 - 30
1777302	Parathion Methyl	12.3	Spike	P	0 - 30
1777302	Pendimethalin	2.89	Spike	P	0 - 30
1777302	Phorate	15.2	Spike	P	0 - 30
1777302	Prometon	8.09	Spike	P	0 - 30
1777302	Prometryn	0.816	Spike	P	0 - 30
1777302	Simazine	5.65	Spike	P	0 - 30
1777302	Terbufos	12.9	Spike	P	0 - 30
1777302	Terbutylazine	0.362	Spike	P	0 - 30
LFB	Acetochlor	1.82	LCS	P	0 - 30
LFB	Alachlor	1.15	LCS	P	0 - 30
LFB	Ametryn	6.43	LCS	P	0 - 30
LFB	Atrazine	4.98	LCS	P	0 - 30
LFB	Atrazine Desethyl	15.8	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P299750

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Azinphos Methyl	13.6	LCS	P	0 - 30
LFB	Bromacil	7.02	LCS	P	0 - 30
LFB	Butylate	5.70	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	1.68	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	3.24	LCS	P	0 - 30
LFB	Cyanazine	3.76	LCS	P	0 - 30
LFB	Demeton	3.11	LCS	P	0 - 30
LFB	Diazinon	3.19	LCS	P	0 - 30
LFB	Disulfoton	9.42	LCS	P	0 - 30
LFB	EPTC	6.24	LCS	P	0 - 30
LFB	Ethion	3.28	LCS	P	0 - 30
LFB	Ethoprop	2.65	LCS	P	0 - 30
LFB	Fenamiphos	16.4	LCS	P	0 - 30
LFB	Fipronil	4.75	LCS	P	0 - 30
LFB	Fipronil Sulfide	2.34	LCS	P	0 - 30
LFB	Fipronil Sulfone	0.958	LCS	P	0 - 30
LFB	Fonofos	2.37	LCS	P	0 - 30
LFB	Hexazinone	15.5	LCS	P	0 - 30
LFB	Malathion	4.95	LCS	P	0 - 30
LFB	Metalaxyl	3.82	LCS	P	0 - 30
LFB	Metolachlor	0.321	LCS	P	0 - 30
LFB	Metribuzin	2.89	LCS	P	0 - 30
LFB	Mevinphos	2.99	LCS	P	0 - 30
LFB	Molinate	3.45	LCS	P	0 - 30
LFB	Norflurazon	2.90	LCS	P	0 - 30
LFB	Parathion Ethyl	3.86	LCS	P	0 - 30
LFB	Parathion Methyl	1.79	LCS	P	0 - 30
LFB	Pendimethalin	1.36	LCS	P	0 - 30
LFB	Phorate	0.498	LCS	P	0 - 30
LFB	Prometon	14.9	LCS	P	0 - 30
LFB	Prometryn	0.789	LCS	P	0 - 30
LFB	Simazine	11.5	LCS	P	0 - 30
LFB	Terbufos	6.71	LCS	P	0 - 30
LFB	Terbuthylazine	0.244	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P299737

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777261	Glyphosate	8.84	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P299860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777248	Color (true)	1.47	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P300269

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777102	Total Alkalinity	0.347	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P300376

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777249	TDS	7.16	Sample	P	0 - 10

Reference Method: SM 2540 D-97
Batch ID: P300021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777249	TSS	3.06	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P300256

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777102	Fluoride	0.467	Spike	P	0 - 3.7

Reference Method: SM 5310 B-00
Batch ID: P300236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1777182	Organic Carbon	0.604	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: 1777300
Field Sample ID: G4SE0082_03032016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	86.6	P	50 - 150
USGS O-2060-01	2,4-D-d3	70.8	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	52.4	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	66.4	P	40 - 160
USGS O-2060-01	Diuron-d6	51.2	P	40 - 150
USGS O-2060-01	Primidone-d5	83.4	P	40 - 150

Lab Sample ID: 1777301
Field Sample ID: G4SE0082_03032016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
DEP SOP: GC-011-5 (based on EPA 608 and 617)	Decachlorobiphenyl	69.8	P	44 - 128

Lab Sample ID: 1777302
Field Sample ID: G4SE0082_03032016

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	75.7	P	67 - 131
EPA 8270D	Simazine-d10	85.3	P	75 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A68007
Included Lab Sample IDs: 1777290, 1777293

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A68009
Included Lab Sample IDs: 1777288, 1777291

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

Reference Method: EPA 8321B
Run ID: A68030
Included Lab Sample IDs: 1777300

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	80.2	113	P/P	70 - 130

Reference Method: SM 2120 B
Run ID: A68046
Included Lab Sample IDs: 1777288, 1777291

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	96.2	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A68089

Included Lab Sample IDs: 1777288, 1777291

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Chloride	99.3	101	P/P	90 - 110
Sulfate	100	99.1	P/P	90 - 110
Sulfate	98.8	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A68145

Included Lab Sample IDs: 1777289, 1777292

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

Reference Method: USGS O-2060-01

Run ID: A68157

Included Lab Sample IDs: 1777300

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: SM 5310 B-00

Run ID: A68174

Included Lab Sample IDs: 1777289, 1777292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	97.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A68180

Included Lab Sample IDs: 1777288, 1777291

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

Reference Method: SM 2320 B-97

Run ID: A68185

Included Lab Sample IDs: 1777288, 1777291

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	102	P/P	90 - 110

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

Run ID: A68195

Included Lab Sample IDs: 1777301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	98.3	97.1	P/P	85 - 115
Alpha-BHC	97.1	98.2	P/P	85 - 115

Quality Assurance Report Calibration Verification

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

Run ID: A68195

Included Lab Sample IDs: 1777301

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beta-BHC	100	99.2	P/P	85 - 115
Carbophenothion	93.0	97.5	P/P	90 - 110
Chlordane	101	102	P/P	85 - 115
Chlorothalonil	92.1	109	P/P	90 - 110
Cypermethrin	88.9	99.9	P/P	85 - 115
DDD-p,p'	96.9	77.2*	P/F	85 - 115
DDE-p,p'	99.7	91.7	P/P	85 - 115
DDT-p,p'	100	83.6*	P/F	85 - 115
Delta-BHC	97.7	97.2	P/P	85 - 115
Dicofol	116*	75.5*	F/F	90 - 110
Dieldrin	100	93.9	P/P	85 - 115
Endosulfan I	99.9	96.0	P/P	85 - 115
Endosulfan II	101	92.0	P/P	85 - 115
Endosulfan Sulfate	100	86.4	P/P	85 - 115
Endrin	99.3	90.3	P/P	85 - 115
Endrin Aldehyde	101	92.0	P/P	85 - 115
Gamma-BHC	98.1	97.8	P/P	85 - 115
Heptachlor	99.3	98.3	P/P	85 - 115
Heptachlor Epoxide	101	97.1	P/P	85 - 115
Methoxychlor	104	85.2*	P/F	90 - 110
Mirex	89.8*	92.7	F/P	90 - 110
Permethrin	91.6	94.0	P/P	90 - 110
Toxaphene	106	103	P/P	85 - 115
Trifluralin	96.3	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A68219

Included Lab Sample IDs: 1777289, 1777292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A68230

Included Lab Sample IDs: 1777289, 1777292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.5	P/P	90 - 110
Ammonia-N	99.5	99.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A68279

Included Lab Sample IDs: 1777289, 1777292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.5	95.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270D
Run ID: A68339
Included Lab Sample IDs: 1777302

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	100		P	80 - 120
Alachlor	98.9		P	80 - 120
Ametryn	106		P	80 - 120
Atrazine	105		P	80 - 120
Atrazine Desethyl	101		P	80 - 120
Azinphos Methyl	80.2		P	80 - 120
Bromacil	99.7		P	80 - 120
Butylate	95.7		P	80 - 120
Chlorpyrifos Ethyl	97.3		P	80 - 120
Chlorpyrifos Methyl	93.4		P	80 - 120
Cyanazine	89.7		P	80 - 120
Demeton	93.5		P	80 - 120
Diazinon	102		P	80 - 120
Disulfoton	96.1		P	80 - 120
EPTC	100		P	80 - 120
Ethion	89.7		P	80 - 120
Ethoprop	96.3		P	80 - 120
Fenamiphos	93.9		P	80 - 120
Fipronil	95.9		P	80 - 120
Fipronil Sulfide	99.3		P	80 - 120
Fipronil Sulfone	100		P	80 - 120
Fonofos	93.3		P	80 - 120
Hexazinone	101		P	80 - 120
Malathion	85.0		P	80 - 120
Metaxyl	98.4		P	80 - 120
Metolachlor	97.9		P	80 - 120
Metribuzin	98.1		P	80 - 120
Mevinphos	91.0		P	80 - 120
Molinate	98.9		P	80 - 120
Norflurazon	96.3		P	80 - 120
Parathion Ethyl	106		P	80 - 120
Parathion Methyl	100		P	80 - 120
Pendimethalin	105		P	80 - 120
Phorate	95.4		P	80 - 120
Prometon	109		P	80 - 120
Prometryn	100		P	80 - 120
Simazine	106		P	80 - 120
Terbufos	92.3		P	80 - 120
Terbutylazine	100		P	80 - 120

Reference Method: USGS O-2060-01
Run ID: P68122
Included Lab Sample IDs: 1777300

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: 1777300

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)	Toxaphene	91.2	86.3	78.4	85.8	5.49		8.96
EPA 180.1 Rev. 2.0	Turbidity						0.504	
EPA 300.0 Rev. 2.1	Chloride	104		104	103		0.0687	
	Sulfate	101		100	99.8		0.916	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6		101	100			0.424
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101		84.0	101			9.70
EPA 353.2 Rev. 2.0	NO2NO3-N	100		99.0	99.5			0.504
EPA 365.1 Rev. 2.0	Total-P	105		103	105			1.08
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	105						0.178
EPA 8270D	Acetochlor	86.1	84.5	96.6	96.2	1.82		0.423
	Alachlor	85.0	84.1	97.3	94.1	1.15		3.42
	Ametryn	96.8	103	104	106	6.43		2.21
	Atrazine	91.7	96.4			4.98		0.267
	Atrazine Desethyl	54.8	64.3	52.1	68.8	15.8		24.2
	Azinphos Methyl	91.6	105	142	172	13.6		19.1
	Bromacil	84.0	78.3			7.02		6.00
	Butylate	51.9	49.0	35.6	45.8	5.70		25.2
	Chlorpyrifos Ethyl	81.3	80.0	94.1	87.3	1.68		7.48
	Chlorpyrifos Methyl	68.6	66.4	87.4	85.9	3.24		1.72
	Cyanazine	86.0	89.3	115	111	3.76		4.16
	Demeton	56.5	54.7	56.5	64.5	3.11		13.2
	Diazinon	84.5	81.8	94.0	93.8	3.19		0.284
	Disulfoton	53.2	58.5	77.1	79.8	9.42		3.52
	EPTC	58.2	54.7	35.6	45.2	6.24		23.8
	Ethion	98.0	94.8	98.4	101	3.28		2.67
	Ethoprop	72.2	70.3	75.2	83.6	2.65		10.6
	Fenamiphos	72.4	61.5	104	103	16.4		0.670
	Fipronil	104	98.9	106	107	4.75		1.40
	Fipronil Sulfide	107	105	107	102	2.34		5.25
	Fipronil Sulfone	105	106	107	110	0.958		2.18
	Fonofos	65.0	63.4	79.6	86.9	2.37		8.79
	Hexazinone	74.0	63.3	102	98.2	15.5		2.71
	Malathion	90.8	86.5	105	108	4.95		2.23
	Metalaxyl	16.5	17.2	99.5	95.2	3.82		4.04
	Metolachlor	89.4	89.1			0.321		3.14
	Metribuzin	90.6	93.3	105	103	2.89		1.97
	Mevinphos	53.6	52.0	88.9	106	2.99		17.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8270D	Molinate	53.3	51.5	49.7	58.1	3.45	15.6
	Norflurazon	107	104	98.7	110	2.90	9.32
	Parathion Ethyl	89.0	85.7	88.1	94.0	3.86	6.49
	Parathion Methyl	77.0	78.4	91.8	104	1.79	12.3
	Pendimethalin	80.0	81.1	79.6	82.0	1.36	2.89
	Phorate	61.7	62.0	78.0	90.8	0.498	15.2
	Prometon	94.5	81.4	110	101	14.9	8.09
	Prometryn	94.4	95.2	92.6	93.3	0.789	0.816
	Simazine	84.1	74.9	98.8	105	11.5	5.65
	Terbufos	66.3	62.0	78.1	88.9	6.71	12.9
	Terbutylazine	92.3	92.5	95.9	95.5	0.244	0.362
	Glyphosate	81.2		67.0	73.2		8.84
EPA 8321B	Color (true)					1.47	
SM 2120 B	Total Alkalinity	102				0.347	
SM 2320 B-97	TDS					7.16	
SM 2540 C-97	TSS					3.06	
SM 4500 F-C-97	Fluoride	101		98.0	98.6		0.467
SM 5310 B-00	Organic Carbon	96.1		99.2			0.604
USGS O-2060-01	2,4,5-T	60.0		92.8	96.8		4.22
	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
DEP SOP: GC-011-5 (based on EPA 608 and 617) / E31780	Organochlorine pesticides (low levels) in water matrices by GC/ECD.	1777301
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1777288, 1777291
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1777288, 1777291
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1777288, 1777291
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1777289, 1777292
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1777289, 1777292
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1777289, 1777292
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1777289, 1777292
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1777290, 1777293

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	1777302
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1777300
SM 2120 B / E31780	True Color measured at 450 nm	1777288, 1777291
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1777288, 1777291
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1777288, 1777291
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1777288, 1777291
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1777288, 1777291
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1777289, 1777292
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1777300
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1777300

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)	03/04/2016	03/04/2016	Rasheda Ghaffari	03/09/2016	Vandana T. Nagar	1777301
EPA 180.1 Rev. 2.0	03/04/2016			03/04/2016 14:17	Sima Feizi	1777288, 1777291
EPA 300.0 Rev. 2.1	03/04/2016			03/10/2016	Julia Storbeck	1777288, 1777291
EPA 350.1 Rev. 2.0	03/04/2016			03/15/2016	Diana M. Turner	1777289, 1777292
EPA 351.2 Rev. 2.0	03/04/2016	03/15/2016	Sofia Elnemr	03/17/2016	Christopher Armour	1777289, 1777292
EPA 353.2 Rev. 2.0	03/04/2016			03/10/2016	Peter D. Kaus	1777289, 1777292
EPA 365.1 Rev. 2.0	03/04/2016	03/14/2016	Lipi Saha	03/15/2016	Lipi Saha	1777289, 1777292
EPA 365.1 Rev. 2.0 dissolved	03/04/2016			03/04/2016 13:23	Julia Storbeck	1777290
	03/04/2016			03/04/2016 13:24	Julia Storbeck	1777293
EPA 8270D	03/04/2016	03/04/2016	Fe-Val Siddell	03/08/2016	Irina Carbone	1777302
EPA 8321B	03/04/2016	03/07/2016	Mohammad Ghaffari	03/07/2016	Mohammad Ghaffari	1777300
SM 2120 B	03/04/2016			03/04/2016 16:52	Blanca Fach	1777288
	03/04/2016			03/04/2016 16:53	Blanca Fach	1777291
SM 2320 B-97	03/04/2016			03/14/2016	Dale L. Simmons	1777288, 1777291
SM 2540 C-97	03/04/2016			03/07/2016	Yijie Li	1777288, 1777291
SM 2540 D-97	03/04/2016			03/07/2016	Yijie Li	1777288, 1777291
SM 4500 F-C-97	03/04/2016			03/11/2016	Dale L. Simmons	1777288, 1777291
SM 5310 B-00	03/04/2016			03/11/2016	Sofia Elnemr	1777289, 1777292
USGS O-2060-01	03/04/2016	03/08/2016	Hoor Shaik	03/09/2016	Juyoung Kim	1777300
	03/04/2016	03/08/2016	Hoor Shaik	03/11/2016	Juyoung Kim	1777300