Chemical Analysis Report

NE-DIST-2016-11-01-01

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

Event Description: **Suwannee 3**
Request ID: **RQ-2016-10-24-17**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 23-NOV-2016 13:03

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: TUMBLIN CREEK ABOVE 14TH **Collection Date/Time: 10/31/2016 09:55**

Field ID: G1NE0856 10312016 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846140	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P314351	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P315353	
		Sulfate	47		mg SO4/L	P315358	
	SM 2120 B	Color (true)	12		PCU	P314306	
	SM 2320 B-97	Total Alkalinity	106	A	mg CaCO3/L	P314443	
	SM 2540 C-97	TDS	196		mg/L	P314952	
	SM 2540 D-97	TSS	2	I	mg/L	P315041	
	SM 4500 F-C-97	Fluoride	0.19		mg F/L	P314446	
1846143	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P315019	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.30		mg N/L	P315341	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.32		mg N/L	P314516	
	EPA 365.1 Rev. 2.0	Total-P	0.17		mg P/L	P314961	
	SM 5310 B-00	Organic Carbon	4.0		mg C/L	P314481	
1846146	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.15		mg P/L	P314303	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HAGUE US441 **Collection Date/Time: 10/31/2016 12:05**

Field ID: G1NE0631 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846141	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P314351	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P315353	
		Sulfate	41		mg SO4/L	P315358	
	SM 2120 B	Color (true)	26		PCU	P314306	
	SM 2320 B-97	Total Alkalinity	164		mg CaCO3/L	P314441	
	SM 2540 C-97	TDS	235		mg/L	P314952	
	SM 2540 D-97	TSS	2	I	mg/L	P315041	
	SM 4500 F-C-97	Fluoride	0.29		mg F/L	P314445	
1846144	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P315020	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P315341	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.6		mg N/L	P314516	
	EPA 365.1 Rev. 2.0	Total-P	0.57		mg P/L	P314961	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P314481	
1846147	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.51		mg P/L	P314303	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HAGUE US441 **Collection Date/Time: 10/31/2016 12:05**

Field ID: G1NE0631 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846152	EPA 8321B	Glyphosate**	10	UJ	ug/L	P314475	MS, SUR
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P314514	
		Diuron	0.0040	U	ug/L	P314514	MS
		2,4-DB	0.0020	U	ug/L	P314514	
		Fenuron	0.0080	U	ug/L	P314514	
		2,4,5-T	0.0020	U	ug/L	P314514	
		Acifluorfen	0.0020	U	ug/L	P314514	
		Imidacloprid	0.0040	U	ug/L	P314514	
		Bentazon	0.0020	U	ug/L	P314514	MS
		Linuron	0.0040	U	ug/L	P314514	
		Dichlorprop	0.0020	U	ug/L	P314514	
		Dinoseb	0.020	U	ug/L	P314514	
		MCPA	0.0040	U	ug/L	P314514	
		Acetaminophen**	0.0040	U	ug/L	P314514	
		MCPP	0.0040	U	ug/L	P314514	
		Picloram	0.050	UJ	ug/L	P314514	CCV, MS, RPD
		Carbamazepine**	4.0E-04	U	ug/L	P314514	
		Silvex	0.0020	U	ug/L	P314514	MS
		Triclopyr**	0.0040	U	ug/L	P314514	
		Primidone**	0.0080	U	ug/L	P314514	
		Fluridone**	4.0E-04	U	ug/L	P314514	
1846154	EPA 8270D	Dieldrin	0.39	U	ng/L	P314442	

Ref. Method and Comment:
EPA 8321B: Refer to the narrative for an explanation of QC Codes.
USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.
EPA 8270D: Insufficient sample available to perform duplicate matrix spikes.

Sample Location: TURKEY AT NW 59TH **Collection Date/Time: 10/31/2016 11:45**

Field ID: G1NE0018 10312016 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846142	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P314351	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P315353	
		Sulfate	12		mg SO4/L	P315358	
	SM 2120 B	Color (true)	52	A	PCU	P314306	
	SM 2320 B-97	Total Alkalinity	99		mg CaCO3/L	P314441	
	SM 2540 C-97	TDS	166	A	mg/L	P314952	
	SM 2540 D-97	TSS	3	I	mg/L	P315041	
	SM 4500 F-C-97	Fluoride	0.42		mg F/L	P314445	
1846145	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P315020	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P315341	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.021		mg N/L	P314516	
	EPA 365.1 Rev. 2.0	Total-P	0.75		mg P/L	P314961	
	SM 5310 B-00	Organic Carbon	6.6		mg C/L	P314481	
1846148	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.67		mg P/L	P314303	

Field ID: G1NE0018 10312016 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HAGUE US441 DUP **Collection Date/Time: 10/31/2016 12:15**

Field ID: G1NE0631 dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846153	EPA 8321B	Glyphosate**	10	UJ	ug/L	P314475	MS, SUR
	USGS O-2060-01	2,4-D	0.0040	U	ug/L	P314514	
		Diuron	0.0040	U	ug/L	P314514	MS
		2,4-DB	0.0020	U	ug/L	P314514	
		Fenuron	0.0080	U	ug/L	P314514	
		2,4,5-T	0.0020	U	ug/L	P314514	
		Acifluorfen	0.0020	U	ug/L	P314514	
		Imidacloprid	0.0040	U	ug/L	P314514	
		Bentazon	0.0020	U	ug/L	P314514	MS
		Linuron	0.0040	U	ug/L	P314514	
		Dichlorprop	0.0020	U	ug/L	P314514	
		Dinoseb	0.020	U	ug/L	P314514	
		MCPA	0.0040	U	ug/L	P314514	
		Acetaminophen**	0.0040	U	ug/L	P314514	
		MCPP	0.0040	U	ug/L	P314514	
		Picloram	0.050	UJ	ug/L	P314514	CCV, MS, RPD
		Carbamazepine**	4.0E-04	U	ug/L	P314514	
		Silvex	0.0020	U	ug/L	P314514	MS
		Triclopyr**	0.0040	U	ug/L	P314514	
		Primidone**	0.0080	U	ug/L	P314514	
		Fluridone**	4.0E-04	U	ug/L	P314514	
1846157	EPA 8270D	Ametryn	0.67	I	ng/L	P314573	
		Atrazine	1.6		ng/L	P314573	
		Chlorpyrifos Ethyl	0.24	U	ng/L	P314573	
		Chlorpyrifos Methyl	0.096	U	ng/L	P314573	
		Disulfoton	0.31	U	ng/L	P314573	
		Ethion	0.14	U	ng/L	P314573	
		Ethoprop	0.096	U	ng/L	P314573	
		Hexazinone	4.3		ng/L	P314573	
		Malathion	0.34	U	ng/L	P314573	
		Metribuzin	0.19	UJ	ng/L	P314573	LCS, RPD
		Mevinphos	0.48	U	ng/L	P314573	
		Norflurazon	0.48	U	ng/L	P314573	
		Phorate	0.24	U	ng/L	P314573	
		Prometryn	0.19	U	ng/L	P314573	
		Simazine	0.48	U	ng/L	P314573	

Field ID: G1NE0631 dup Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1846157	EPA 8270D	Atrazine Desethyl	1.4	U	ng/L	P314573	
		Prometon	0.87	U	ng/L	P314573	
		Fipronil	0.24	U	ng/L	P314573	
		Molinate	0.29	U	ng/L	P314573	
		Pendimethalin	1.4	U	ng/L	P314573	
		Terbufos	0.096	U	ng/L	P314573	
		EPTC	1.2	U	ng/L	P314573	
		Terbuthylazine	0.41	U	ng/L	P314573	
		Bromacil	4.8		ng/L	P314573	
		Fipronil Sulfide	0.14	U	ng/L	P314573	
		Fipronil Sulfone	0.14	U	ng/L	P314573	
		Alachlor	0.24	U	ng/L	P314573	
		Azinphos Methyl	2.2	U	ng/L	P314573	
		Butylate	0.39	U	ng/L	P314573	
		Demeton	0.96	UJ	ng/L	P314573	RPD
		Diazinon	0.12	U	ng/L	P314573	
		Fenamiphos	0.24	U	ng/L	P314573	
		Fonofos	0.19	UJ	ng/L	P314573	LCS
		Metalaxyl	0.19	U	ng/L	P314573	
		Metolachlor	0.24	U	ng/L	P314573	
		Acetochlor	0.24	U	ng/L	P314573	
		Cyanazine	0.48	U	ng/L	P314573	
		Parathion Ethyl	0.24	U	ng/L	P314573	
		Parathion Methyl	0.24	U	ng/L	P314573	

Ref. Method and Comment:
EPA 8321B: Refer to the narrative for an explanation of QC Codes.
USGS O-2060-01: Refer to the narrative for an explanation of QC Codes.
EPA 8270D: Insufficient sample available to perform duplicate matrix spikes. Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P314351

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315353

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315358

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315341

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314516

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314961

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P314303

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

Reference Method: EPA 8270D
Batch ID: P314442

Component	Result	Code	Units
Dieldrin	0.40	U	ng/L

Reference Method: EPA 8270D
Batch ID: P314573

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	0.25	U	ng/L
Chlorpyrifos Methyl	0.10	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8270D
Batch ID: P314573

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
Metalaxyl	0.20	U	ng/L
Metolachlor	0.25	U	ng/L
Metribuzin	0.20	U	ng/L
Mevinphos	0.50	U	ng/L
Molinate	0.30	U	ng/L
Norflurazon	0.50	U	ng/L
Parathion Ethyl	0.25	U	ng/L
Parathion Methyl	0.25	U	ng/L
Pendimethalin	1.5	U	ng/L
Phorate	0.25	U	ng/L
Prometon	0.90	U	ng/L
Prometryn	0.20	U	ng/L
Simazine	0.50	U	ng/L
Terbufos	0.10	U	ng/L
Terbuthylazine	0.42	U	ng/L

Reference Method: EPA 8321B
Batch ID: P314475

Component	Result	Code	Units
Glyphosate	10	U	ug/L

Reference Method: SM 2120 B
Batch ID: P314306

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P314441

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

Reference Method: SM 2320 B-97
Batch ID: P314443

Component	Result	Code	Units

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P314443

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

Reference Method: SM 2540 C-97
Batch ID: P314952

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P315041

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P314445

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P314446

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P314481

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

Reference Method: USGS O-2060-01
Batch ID: P314514

Component	Result	Code	Units
2,4,5-T	0.00200	U	ug/L
2,4-D	0.00400	U	ug/L
2,4-DB	0.00200	U	ug/L
Acetaminophen	0.0040	U	ug/L
Acifluorfen	0.00200	U	ug/L
Bentazon	0.00200	U	ug/L
Carbamazepine	4.0E-04	U	ug/L
Dichlorprop	0.00200	U	ug/L
Dinoseb	0.0200	U	ug/L
Diuron	0.0040	U	ug/L
Fenuron	0.0080	U	ug/L
Fluridone	4.0E-04	U	ug/L
Imidacloprid	0.0040	U	ug/L
Linuron	0.0040	U	ug/L
MCPA	0.00400	U	ug/L
MCPP	0.00400	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: USGS O-2060-01
Batch ID: P314514

Component	Result	Code	Units
Picloram	0.0500	U	ug/L
Primidone	0.0080	U	ug/L
Silvex	0.00200	U	ug/L
Triclopyr	0.00400	U	ug/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315353

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315019

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315020

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315341

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314961

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P314303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: EPA 8270D
Batch ID: P314442

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Dieldrin	91.7	92.4	P/P	77 - 123

Reference Method: EPA 8270D
Batch ID: P314573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acetochlor	90.1	83.5	P/P	80 - 119
Alachlor	86.5	83.3	P/P	80 - 120
Ametryn	104	94.7	P/P	60 - 135
Atrazine	93.6	95.8	P/P	72 - 121
Atrazine Desethyl	94.5	86.5	P/P	14 - 124
Azinphos Methyl	115	99.6	P/P	74 - 186
Bromacil	97.7	94.5	P/P	38 - 125
Butylate	56.8	44.8	P/P	34 - 88.0
Chlorpyrifos Ethyl	88.3	87.8	P/P	53 - 108
Chlorpyrifos Methyl	83.5	82.4	P/P	29 - 119
Cyanazine	91.4	86.6	P/P	30 - 240
Demeton	83.1	57.2	P/P	35 - 127
Diazinon	81.3	84.4	P/P	75 - 121
Disulfoton	96.2	77.2	P/P	40 - 141
EPTC	56.9	45.4	P/P	36 - 96.0
Ethion	111	104	P/P	64 - 127
Ethoprop	83.4	66.5	P/P	65 - 108
Fenamiphos	102	86.4	P/P	62 - 140
Fipronil	92.9	88.5	P/P	59 - 127
Fipronil Sulfide	93.6	94.6	P/P	55 - 126
Fipronil Sulfone	113	106	P/P	56 - 127
Fonofos	80.0	62.1	P/F	64 - 111
Hexazinone	99.5	96.8	P/P	43 - 153
Malathion	107	103	P/P	70 - 129
Metalaxyl	90.0	92.0	P/P	49 - 135
Metolachlor	92.2	88.9	P/P	81 - 120
Metribuzin	41.8	88.6	F/P	66 - 133
Mevinphos	72.4	53.9	P/P	33 - 128
Molinate	60.9	46.0	P/P	46 - 101
Norflurazon	87.9	87.2	P/P	62 - 131
Parathion Ethyl	106	101	P/P	80 - 109
Parathion Methyl	95.1	89.2	P/P	76 - 126
Pendimethalin	95.4	95.6	P/P	47 - 137
Phorate	88.0	74.4	P/P	51 - 115
Prometon	102	94.2	P/P	67 - 123
Prometryn	93.2	89.9	P/P	66 - 122
Simazine	99.0	119	P/P	60 - 134
Terbufos	84.6	73.9	P/P	56 - 116
Terbuthylazine	98.5	99.5	P/P	77 - 114

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P314475

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	54.0		P	40 - 140

Reference Method: SM 2320 B-97
Batch ID: P314441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P314443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P314445

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 4500 F-C-97
Batch ID: P314446

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P314481

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.4		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P314514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	98.0		P	40 - 140
2,4-D	99.2		P	40 - 140
2,4-DB	73.6		P	40 - 140
Acetaminophen	115		P	40 - 140
Acifluorfen	88.8		P	40 - 140
Bentazon	136		P	40 - 140
Carbamazepine	116		P	40 - 140
Dichlorprop	81.2		P	40 - 140
Dinoseb	89.6		P	40 - 140
Diuron	60.8		P	40 - 140
Fenuron	100		P	40 - 140
Fluridone	102		P	40 - 140
Imidacloprid	81.2		P	40 - 160
Linuron	92.0		P	40 - 140
MCPA	84.8		P	40 - 140
MCPP	88.8		P	40 - 140

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: USGS O-2060-01
Batch ID: P314514

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Picloram	68.4		P	40 - 140
Primidone	90.4		P	40 - 140
Silvex	124		P	40 - 140
Triclopyr	101		P	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315353

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846164	Chloride	100		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315358

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846163	Sulfate	96.4		P	90 - 110
1846164	Sulfate	96.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844881	Ammonia-N	105	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846144	Ammonia-N	106	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1844012	Kjeldahl Nitrogen	94.5	94.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846045	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P314303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846022	O-Phosphate-P	96.4	96.7	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270D
Batch ID: P314442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846154	Dieldrin	95.5		P	76 - 128

Reference Method: EPA 8270D
Batch ID: P314573

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846156	Acetochlor	90.2		P	77 - 125
1846156	Alachlor	92.7		P	75 - 127
1846156	Ametryn	106		P	53 - 150
1846156	Atrazine	94.4		P	70 - 126
1846156	Atrazine Desethyl	65.0		P	8.0 - 105
1846156	Azinphos Methyl	134		P	63 - 204
1846156	Bromacil	95.5		P	43 - 132
1846156	Butylate	32.5		P	7.0 - 87.0
1846156	Chlorpyrifos Ethyl	92.0		P	53 - 111
1846156	Chlorpyrifos Methyl	89.9		P	38 - 117
1846156	Cyanazine	99.2		P	18 - 222
1846156	Demeton	66.2		P	10 - 157
1846156	Diazinon	92.7		P	73 - 127
1846156	Disulfoton	82.4		P	43 - 141
1846156	EPTC	33.7		P	11 - 86.0
1846156	Ethion	114		P	68 - 130
1846156	Ethoprop	80.3		P	60 - 108
1846156	Fenamiphos	95.6		P	56 - 139
1846156	Fipronil	101		P	29 - 143
1846156	Fipronil Sulfide	96.3		P	35 - 129
1846156	Fipronil Sulfone	113		P	16 - 146
1846156	Fonofos	70.3		P	59 - 112
1846156	Hexazinone	99.5		P	68 - 145
1846156	Malathion	116		P	69 - 131
1846156	Metalaxyl	94.9		P	67 - 119
1846156	Metolachlor	90.1		P	77 - 124
1846156	Metribuzin	94.9		P	63 - 134
1846156	Mevinphos	81.8		P	40 - 127
1846156	Molinate	45.1		P	27 - 98.0
1846156	Norflurazon	89.0		P	39 - 141
1846156	Parathion Ethyl	100		P	74 - 113
1846156	Parathion Methyl	96.5		P	61 - 133
1846156	Pendimethalin	95.4		P	26 - 179
1846156	Phorate	97.7		P	44 - 126
1846156	Prometon	123		P	43 - 147
1846156	Prometryn	83.2		P	68 - 126
1846156	Simazine	119		P	47 - 156
1846156	Terbufos	88.7		P	53 - 125
1846156	Terbuthylazine	98.3		P	76 - 113

Reference Method: EPA 8321B
Batch ID: P314475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1847080	Glyphosate	35.6	37.6	F/F	40 - 140

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P314445

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846039	Fluoride	99.6	99.0	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P314446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846140	Fluoride	97.4	99.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P314481

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1846042	Organic Carbon	101		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P314514

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1847080	2,4,5-T	117	109	P/P	40 - 140
1847080	2,4-D	128	124	P/P	40 - 140
1847080	2,4-DB	122	109	P/P	40 - 140
1847080	Acetaminophen	62.0	62.8	P/P	40 - 140
1847080	Acifluorfen	107	114	P/P	40 - 140
1847080	Bentazon	207	209	F/F	40 - 140
1847080	Carbamazepine	64.0	69.2	P/P	40 - 140
1847080	Dichlorprop	108	116	P/P	40 - 140
1847080	Dinoseb	122	111	P/P	40 - 140
1847080	Diuron	40.0	38.5	P/F	40 - 140
1847080	Fenuron	49.6	48.8	P/P	40 - 140
1847080	Fluridone	77.2	71.2	P/P	40 - 140
1847080	Imidacloprid	101	89.6	P/P	40 - 160
1847080	Linuron	73.2	74.4	P/P	40 - 140
1847080	MCPA	117	107	P/P	40 - 140
1847080	MCPP	114	113	P/P	40 - 140
1847080	Picloram	448	295	F/F	40 - 140
1847080	Primidone	61.2	59.2	P/P	40 - 140
1847080	Silvex	171	164	F/F	40 - 140
1847080	Triclopyr	132	113	P/P	40 - 140

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P314351

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846163	Turbidity	1.80	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846163	Chloride	0.138	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P315358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846163	Sulfate	0.106	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844881	Ammonia-N	0.945	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P315020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846144	Ammonia-N	0.651	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P315341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1844012	Kjeldahl Nitrogen	0.209	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P314516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846045	NO2NO3-N	0.784	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P314961

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846144	Total-P	0.814	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P314303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846022	O-Phosphate-P	0.235	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 8270D
Batch ID: P314442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Dieldrin	0.828	LCS	P	0 - 30

Reference Method: EPA 8270D
Batch ID: P314573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Acetochlor	7.61	LCS	P	0 - 30
LFB	Alachlor	3.75	LCS	P	0 - 30
LFB	Ametryn	9.29	LCS	P	0 - 30
LFB	Atrazine	2.35	LCS	P	0 - 30
LFB	Atrazine Desethyl	8.93	LCS	P	0 - 30
LFB	Azinphos Methyl	14.5	LCS	P	0 - 30
LFB	Bromacil	3.30	LCS	P	0 - 30
LFB	Butylate	23.5	LCS	P	0 - 30
LFB	Chlorpyrifos Ethyl	0.590	LCS	P	0 - 30
LFB	Chlorpyrifos Methyl	1.26	LCS	P	0 - 30
LFB	Cyanazine	5.49	LCS	P	0 - 30
LFB	Demeton	36.9	LCS	F	0 - 30
LFB	Diazinon	3.74	LCS	P	0 - 30
LFB	Disulfoton	21.9	LCS	P	0 - 30
LFB	EPTC	22.4	LCS	P	0 - 30
LFB	Ethion	5.71	LCS	P	0 - 30
LFB	Ethoprop	22.5	LCS	P	0 - 30
LFB	Fenamiphos	16.3	LCS	P	0 - 30
LFB	Fipronil	4.96	LCS	P	0 - 30
LFB	Fipronil Sulfide	1.06	LCS	P	0 - 30
LFB	Fipronil Sulfone	6.62	LCS	P	0 - 30
LFB	Fonofos	25.2	LCS	P	0 - 30
LFB	Hexazinone	2.80	LCS	P	0 - 30
LFB	Malathion	4.12	LCS	P	0 - 30
LFB	Metalaxyl	2.12	LCS	P	0 - 30
LFB	Metolachlor	3.63	LCS	P	0 - 30
LFB	Metribuzin	71.7	LCS	F	0 - 30
LFB	Mevinphos	29.4	LCS	P	0 - 30
LFB	Molinate	27.7	LCS	P	0 - 30
LFB	Norflurazon	0.777	LCS	P	0 - 30
LFB	Parathion Ethyl	4.81	LCS	P	0 - 30
LFB	Parathion Methyl	6.39	LCS	P	0 - 30
LFB	Pendimethalin	0.261	LCS	P	0 - 30
LFB	Phorate	16.8	LCS	P	0 - 30
LFB	Prometon	8.11	LCS	P	0 - 30
LFB	Prometryn	3.54	LCS	P	0 - 30
LFB	Simazine	18.3	LCS	P	0 - 30
LFB	Terbufos	13.5	LCS	P	0 - 30
LFB	Terbuthylazine	1.05	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P314475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1847080	Glyphosate	5.46	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P314306

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846142	Color (true)	0.628	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P314441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846039	Total Alkalinity	0.202	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P314443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846140	Total Alkalinity	0.867	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P314952

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846142	TDS	4.20	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P314445

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846039	Fluoride	0.473	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P314446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846140	Fluoride	1.42	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P314481

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1846042	Organic Carbon	1.25	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: USGS O-2060-01
Batch ID: P314514

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1847080	2,4,5-T	6.73	Spike	P	0 - 30
1847080	2,4-D	2.91	Spike	P	0 - 30
1847080	2,4-DB	11.1	Spike	P	0 - 30
1847080	Acetaminophen	1.28	Spike	P	0 - 30
1847080	Acifluorfen	6.17	Spike	P	0 - 30
1847080	Bentazon	0.993	Spike	P	0 - 30
1847080	Carbamazepine	7.81	Spike	P	0 - 30
1847080	Dichlorprop	7.86	Spike	P	0 - 30
1847080	Dinoseb	9.95	Spike	P	0 - 30
1847080	Diuron	3.87	Spike	P	0 - 30
1847080	Fenuron	1.63	Spike	P	0 - 30
1847080	Fluridone	8.09	Spike	P	0 - 30
1847080	Imidacloprid	12.2	Spike	P	0 - 30
1847080	Linuron	1.63	Spike	P	0 - 30
1847080	MCPA	9.29	Spike	P	0 - 30
1847080	MCPP	0.353	Spike	P	0 - 30
1847080	Picloram	41.2	Spike	F	0 - 30
1847080	Primidone	3.32	Spike	P	0 - 30
1847080	Silvex	4.24	Spike	P	0 - 30
1847080	Triclopyr	15.7	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: 1846152
Field Sample ID: G1NE0631

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	33.6	F	50 - 150
USGS O-2060-01	2,4-D-d3	52.0	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	75.8	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	106	P	40 - 160
USGS O-2060-01	Diuron-d6	73.2	P	40 - 150
USGS O-2060-01	Primidone-d5	87.4	P	40 - 150

Lab Sample ID: 1846153
Field Sample ID: G1NE0631 dup

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Glyphosate 13C 15N	33.0	F	50 - 150
USGS O-2060-01	2,4-D-d3	47.3	P	40 - 150
USGS O-2060-01	Acetaminophen-d4	73.2	P	30 - 150
USGS O-2060-01	Carbamazepine-d10	101	P	40 - 160
USGS O-2060-01	Diuron-d6	72.6	P	40 - 150
USGS O-2060-01	Primidone-d5	86.6	P	40 - 150

Quality Assurance Report
Surrogates

Lab Sample ID: 1846154
Field Sample ID: G1NE0631

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	86.7	P	58 - 128
EPA 8270D	Tetrachloro-m-xylene	85.9	P	51 - 93.0

Lab Sample ID: 1846157
Field Sample ID: G1NE0631 dup

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Malathion-d7	113	P	65 - 132
EPA 8270D	Simazine-d10	115	P	72 - 128

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A72553
Included Lab Sample IDs: 1846146, 1846147, 1846148

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	99.3	P/P	90 - 110
O-Phosphate-P	99.3	97.8	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A72554
Included Lab Sample IDs: 1846140, 1846141, 1846142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A72563
Included Lab Sample IDs: 1846140, 1846141, 1846142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105

Reference Method: SM 2320 B-97
Run ID: A72585
Included Lab Sample IDs: 1846140, 1846141, 1846142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	101	P/P	90 - 110
Total Alkalinity	94.7	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A72585
Included Lab Sample IDs: 1846140, 1846141, 1846142

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A72591
Included Lab Sample IDs: 1846143, 1846144, 1846145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	96.8	P/P	90 - 110
Organic Carbon	98.4	97.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A72599
Included Lab Sample IDs: 1846143, 1846144, 1846145

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

Reference Method: EPA 8321B
Run ID: A72641
Included Lab Sample IDs: 1846152, 1846153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	104	110	P/P	70 - 160

Reference Method: USGS O-2060-01
Run ID: A72670
Included Lab Sample IDs: 1846152, 1846153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4,5-T	96.2	101	P/P	50 - 150
2,4-D	101	101	P/P	50 - 150
2,4-DB	76.0	112	P/P	50 - 150
Acifluorfen	125	106	P/P	50 - 150
Bentazon	138	140	P/P	50 - 150
Dichlorprop	81.6	87.4	P/P	50 - 150
Dinoseb	81.4	87.8	P/P	50 - 150
MCPA	95.0	94.4	P/P	50 - 150
MCPP	82.0	91.4	P/P	50 - 150
Picloram	212*	204*	F/F	50 - 150
Silvex	119	115	P/P	50 - 150
Triclopyr	84.4	93.6	P/P	50 - 150

Reference Method: EPA 8270D
Run ID: A72690
Included Lab Sample IDs: 1846154

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dieldrin	98.0		P	80 - 120

Reference Method: USGS O-2060-01
Run ID: A72716
Included Lab Sample IDs: 1846152, 1846153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetaminophen	72.8	92.0	P/P	60 - 150
Carbamazepine	89.6	114	P/P	60 - 150
Diuron	88.0	97.2	P/P	60 - 150

Quality Assurance Report
Calibration Verification

Reference Method: USGS O-2060-01
Run ID: A72716
Included Lab Sample IDs: 1846152, 1846153

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	100	106	P/P	60 - 150
Fluridone	111	116	P/P	60 - 150
Imidacloprid	86.4	87.6	P/P	60 - 150
Linuron	114	106	P/P	60 - 150
Primidone	91.6	85.2	P/P	60 - 150

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A72764
Included Lab Sample IDs: 1846143, 1846144, 1846145

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A72783
Included Lab Sample IDs: 1846143, 1846144, 1846145

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	104	P/P	90 - 110
Total-P	104	103	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A72830
Included Lab Sample IDs: 1846140, 1846141, 1846142

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.7	101	P/P	90 - 110
Chloride	99.8	99.7	P/P	90 - 110
Sulfate	96.8	98.5	P/P	90 - 110
Sulfate	97.5	96.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A72894
Included Lab Sample IDs: 1846143, 1846144, 1846145

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

Reference Method: EPA 8270D
Run ID: A72952
Included Lab Sample IDs: 1846157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetochlor	98.1		P	80 - 120
Alachlor	99.8		P	80 - 120
Ametryn	93.8		P	80 - 120
Atrazine	105		P	80 - 120
Atrazine Desethyl	103		P	80 - 120
Azinphos Methyl	99.4		P	80 - 120
Bromacil	103		P	80 - 120
Butylate	105		P	80 - 120

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8270D
Run ID: A72952
Included Lab Sample IDs: 1846157

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorpyrifos Ethyl	97.3		P	80 - 120
Chlorpyrifos Methyl	97.8		P	80 - 120
Cyanazine	90.0		P	80 - 120
Demeton	88.0		P	80 - 120
Diazinon	99.3		P	80 - 120
Disulfoton	96.6		P	80 - 120
EPTC	94.8		P	80 - 120
Ethion	96.9		P	80 - 120
Ethoprop	98.7		P	80 - 120
Fenamiphos	91.3		P	80 - 120
Fipronil	95.5		P	80 - 120
Fipronil Sulfide	92.4		P	80 - 120
Fipronil Sulfone	94.4		P	80 - 120
Fonofos	101		P	80 - 120
Hexazinone	98.5		P	80 - 120
Malathion	97.8		P	80 - 120
Metalaxyl	96.6		P	80 - 120
Metolachlor	101		P	80 - 120
Metribuzin	97.4		P	80 - 120
Mevinphos	97.0		P	80 - 120
Molinate	98.8		P	80 - 120
Norflurazon	98.6		P	80 - 120
Parathion Ethyl	95.1		P	80 - 120
Parathion Methyl	102		P	80 - 120
Pendimethalin	98.5		P	80 - 120
Phorate	94.7		P	80 - 120
Prometon	97.1		P	80 - 120
Prometryn	95.4		P	80 - 120
Simazine	110		P	80 - 120
Terbufos	89.4		P	80 - 120
Terbuthylazine	96.8		P	80 - 120

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					1.80	
EPA 300.0 Rev. 2.1	Chloride	102	100			0.138	
	Sulfate	97.3	96.4	96.5		0.106	
EPA 350.1 Rev. 2.0	Ammonia-N	104	105	104			0.945
	Ammonia-N	107	106	105			0.651
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	94.5	94.1			0.209
EPA 353.2 Rev. 2.0	NO2NO3-N	106	101	100			0.784
EPA 365.1 Rev. 2.0	Total-P	105					0.814
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	96.4	96.7			0.235

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision		
						LCS	SMP	MS
EPA 8270D	Acetochlor	90.1	83.5	90.2		7.61		
	Alachlor	86.5	83.3	92.7		3.75		
	Ametryn	104	94.7	106		9.29		
	Atrazine	93.6	95.8	94.4		2.35		
	Atrazine Desethyl	94.5	86.5	65.0		8.93		
	Azinphos Methyl	115	99.6	134		14.5		
	Bromacil	97.7	94.5	95.5		3.30		
	Butylate	56.8	44.8	32.5		23.5		
	Chlorpyrifos Ethyl	88.3	87.8	92.0		0.590		
	Chlorpyrifos Methyl	83.5	82.4	89.9		1.26		
	Cyanazine	91.4	86.6	99.2		5.49		
	Demeton	83.1	57.2	66.2		36.9		
	Diazinon	81.3	84.4	92.7		3.74		
	Dieldrin	91.7	92.4	95.5		0.828		
	Disulfoton	96.2	77.2	82.4		21.9		
	EPTC	56.9	45.4	33.7		22.4		
	Ethion	111	104	114		5.71		
	Ethoprop	83.4	66.5	80.3		22.5		
	Fenamiphos	102	86.4	95.6		16.3		
	Fipronil	92.9	88.5	101		4.96		
	Fipronil Sulfide	93.6	94.6	96.3		1.06		
	Fipronil Sulfone	113	106	113		6.62		
	Fonofos	80.0	62.1	70.3		25.2		
	Hexazinone	99.5	96.8	99.5		2.80		
	Malathion	107	103	116		4.12		
	Metalaxyl	90.0	92.0	94.9		2.12		
	Metolachlor	92.2	88.9	90.1		3.63		
	Metribuzin	41.8	88.6	94.9		71.7		
	Mevinphos	72.4	53.9	81.8		29.4		
	Molinate	60.9	46.0	45.1		27.7		
	Norflurazon	87.9	87.2	89.0		0.777		
	Parathion Ethyl	106	101	100		4.81		
	Parathion Methyl	95.1	89.2	96.5		6.39		
	Pendimethalin	95.4	95.6	95.4		0.261		
	Phorate	88.0	74.4	97.7		16.8		
	Prometon	102	94.2	123		8.11		
	Prometryn	93.2	89.9	83.2		3.54		
	Simazine	99.0	119	119		18.3		
	Terbufos	84.6	73.9	88.7		13.5		
	Terbuthylazine	98.5	99.5	98.3		1.05		
EPA 8321B	Glyphosate	54.0		35.6	37.6			5.46
SM 2120 B	Color (true)						0.628	
SM 2320 B-97	Total Alkalinity	101					0.202	
	Total Alkalinity	102					0.867	
SM 2540 C-97	TDS						4.20	
SM 4500 F-C-97	Fluoride	97.3		99.6	99.0			0.473
	Fluoride	97.3		97.4	99.5			1.42
SM 5310 B-00	Organic Carbon	98.4		101				1.25
USGS O-2060-01	2,4,5-T	98.0		117	109			6.73
	2,4-D	99.2		128	124			2.91
	2,4-DB	73.6		122	109			11.1
	Acetaminophen	115		62.8	62.0			1.28
	Acifluorfen	88.8		107	114			6.17
	Bentazon	136		207	209			0.993

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
USGS O-2060-01	Carbamazepine	116	69.2	64.0			7.81
	Dichlorprop	81.2	108	116			7.86
	Dinoseb	89.6	122	111			9.95
	Diuron	60.8	38.5	40.0			3.87
	Fenuron	100	48.8	49.6			1.63
	Fluridone	102	71.2	77.2			8.09
	Imidacloprid	81.2	89.6	101			12.2
	Linuron	92.0	74.4	73.2			1.63
	MCPA	84.8	117	107			9.29
	MCPP	88.8	114	113			0.353
	Picloram	68.4	448	295			41.2
	Primidone	90.4	59.2	61.2			3.32
	Silvex	124	171	164			4.24
	Triclopyr	101	132	113			15.7

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1846140, 1846141, 1846142
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1846140, 1846141, 1846142
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1846140, 1846141, 1846142
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1846143, 1846144, 1846145
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1846143, 1846144, 1846145
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1846143, 1846144, 1846145
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1846143, 1846144, 1846145
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1846146, 1846147, 1846148
EPA 8270D / E31780	Organochlorine pesticides (ultra low level) in water matrices by GC/MS/MS	1846154
EPA 8270D / E31780	Organonitrogen and phosphorus pesticides (ultra trace level) in water matrices by GC/MS/MS	1846157
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1846152, 1846153
SM 2120 B / E31780	True Color measured at 450 nm	1846140, 1846141, 1846142
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1846140, 1846141, 1846142
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1846140, 1846141, 1846142
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1846140, 1846141, 1846142
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1846140, 1846141, 1846142
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1846143, 1846144, 1846145
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1846152, 1846153
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1846152, 1846153

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	11/01/2016			11/01/2016 15:55	Julie Michelle Frank	1846140, 1846141, 1846142
EPA 300.0 Rev. 2.1	11/01/2016			11/17/2016	Ping Hua	1846140, 1846141, 1846142
EPA 350.1 Rev. 2.0	11/01/2016			11/10/2016	Julie Michelle Frank	1846143, 1846144, 1846145
EPA 351.2 Rev. 2.0	11/01/2016	11/17/2016	Adrian Shelby	11/18/2016	Joseph Suarez	1846143, 1846144, 1846145
EPA 353.2 Rev. 2.0	11/01/2016			11/03/2016	Beverly Y. Sanders	1846143, 1846144, 1846145
EPA 365.1 Rev. 2.0	11/01/2016	11/10/2016	Adrian Shelby	11/14/2016	Lipi Saha	1846143, 1846144, 1846145
EPA 365.1 Rev. 2.0 dissolved	11/01/2016			11/01/2016 15:37	Julia Storbeck	1846146
	11/01/2016			11/01/2016 15:45	Julia Storbeck	1846147
	11/01/2016			11/01/2016 15:46	Julia Storbeck	1846148
EPA 8270D	11/01/2016	11/03/2016	Fe-Val Siddell	11/07/2016	Irina Carbone	1846154
	11/01/2016	11/03/2016	Rasheda Ghaffari	11/17/2016	Irina Carbone	1846157
EPA 8321B	11/01/2016	11/04/2016	Mohammad Ghaffari	11/04/2016	Mohammad Ghaffari	1846152, 1846153
SM 2120 B	11/01/2016			11/01/2016 16:10	Julie Michelle Frank	1846142
	11/01/2016			11/01/2016 16:14	Julie Michelle Frank	1846140
	11/01/2016			11/01/2016 16:15	Julie Michelle Frank	1846141
SM 2320 B-97	11/01/2016			11/02/2016	Dale L. Simmons	1846141, 1846142
	11/01/2016			11/03/2016	Dale L. Simmons	1846140
SM 2540 C-97	11/01/2016			11/04/2016	Yijie Li	1846140, 1846141, 1846142
SM 2540 D-97	11/01/2016			11/04/2016	Yijie Li	1846140, 1846141, 1846142
SM 4500 F-C-97	11/01/2016			11/02/2016	Dale L. Simmons	1846141, 1846142
	11/01/2016			11/03/2016	Dale L. Simmons	1846140
SM 5310 B-00	11/01/2016			11/02/2016	Julie Michelle Frank	1846143, 1846144, 1846145
USGS O-2060-01	11/01/2016	11/04/2016	Hoor Shaik	11/05/2016	Juyoung Kim	1846152, 1846153
	11/01/2016	11/04/2016	Hoor Shaik	11/08/2016	Juyoung Kim	1846152, 1846153