

Chemical Analysis Report

TLH-ROC-2018-01-24-01

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

Event Description: **kit C-b_pesticides**
Request ID: **RQ-2018-01-22-51**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
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Tallahassee, FL 32399
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 12-FEB-2018 14:49



Case Narrative

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

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited 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: UNNAMED BRANCH

Collection Date/Time: 01/24/2018 10:40

Field ID: G2TLHR0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961817	EPA 180.1 Rev. 2.0	Turbidity	14	A	NTU	P338722	
	EPA 300.0 Rev. 2.1	Chloride	5.0		mg Cl/L	P338912	
		Sulfate	1.3		mg SO4/L	P338914	
	SM 2120 B	Color (true)	39	A	PCU	P338735	
	SM 2320 B-97	Total Alkalinity	46		mg CaCO3/L	P339015	
	SM 2540 C-97	TDS	72		mg/L	P339140	
	SM 2540 D-97	TSS	24		mg/L	P339362	
	SM 4500 F-C-97	Fluoride	0.095	I	mg F/L	P339020	
1961818	EPA 350.1 Rev. 2.0	Ammonia-N	0.014		mg N/L	P339120	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.26		mg N/L	P338827	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19		mg N/L	P338964	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P338955	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P339206	
1961819	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P338754	
1961832	EPA 200.7 Rev. 4.4	Calcium	12.7		mg/L	P338791	
		Iron	1.44E+03		ug/L	P338791	
		Magnesium	5.82		mg/L	P338791	
		Potassium	0.39	I	mg/L	P338791	
		Sodium	3.2		mg/L	P338791	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P338791	
		Arsenic	0.58		ug/L	P338791	
		Cadmium	0.025	I	ug/L	P338791	
		Chromium	1.8		ug/L	P338791	
		Copper	0.34	I	ug/L	P338791	
		Lead	0.59		ug/L	P338791	
		Nickel	0.49	I	ug/L	P338791	
		Silver	0.010	U	ug/L	P338791	

Ref. Method and Comment:

SM 2320 B-97: Batch relative percent difference is unavailable because of low 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.

Sample Location: UNNAMED BRANCH

Collection Date/Time: 01/24/2018 10:40

Field ID: G2TLHR0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961823	EPA 8321B	Glyphosate**	0.10	U	ug/L	P338691	
		AMPA**	0.10	U	ug/L	P338691	
		Pyraclostrobin**	0.0020	U	ug/L	P338701	
		Sucralose**	0.086		ug/L	P338739	
	USGS O-2060-01	2,4-D	0.0020	U	ug/L	P338701	
		Diuron	0.0020	U	ug/L	P338701	
		Fenuron	0.0080	U	ug/L	P338701	
		Imidacloprid	0.0020	U	ug/L	P338701	
		Bentazon	8.0E-04	U	ug/L	P338701	
							MS

Field ID: G2TLHR0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961823	USGS O-2060-01	Linuron	0.0040	U	ug/L	P338701	
		Acetaminophen**	0.0080	U	ug/L	P338701	
		MCPD	0.0020	U	ug/L	P338701	
		Carbamazepine**	4.0E-04	U	ug/L	P338701	
		Triclopyr**	0.0040	U	ug/L	P338701	
		Primidone**	0.0040	U	ug/L	P338701	
		Fluridone**	4.0E-04	U	ug/L	P338701	
1961824	EPA 8321B	Aldicarb	0.020	U	ug/L	P338701	
		Aldicarb Sulfone	0.0020	U	ug/L	P338701	
		Aldicarb Sulfoxide	0.0020	U	ug/L	P338701	
		Carbaryl	0.0020	U	ug/L	P338701	
		Carbofuran	0.0020	U	ug/L	P338701	
		3-Hydroxycarbofuran	0.0020	U	ug/L	P338701	
		Methiocarb	0.0020	U	ug/L	P338701	
		Methomyl	0.0020	U	ug/L	P338701	
		Oxamyl	0.0020	U	ug/L	P338701	
		Propoxur	0.0020	U	ug/L	P338701	
1961830	EPA 8270D	Aldrin	4.7	UJ	ng/L	P338909	RPD
		Alpha-BHC	2.4	U	ng/L	P338909	
		Beta-BHC	4.7	U	ng/L	P338909	RPD
		Delta-BHC	4.7	U	ng/L	P338909	RPD
		Gamma-BHC	4.7	U	ng/L	P338909	
		Carbophenothion	4.7	U	ng/L	P338909	
		Chlorothalonil	2.4	U	ng/L	P338909	
		Cypermethrin	24	U	ng/L	P338909	
		DDD-p,p'	3.5	U	ng/L	P338909	RPD
		DDE-p,p'	3.5	U	ng/L	P338909	
		DDT-p,p'	3.5	U	ng/L	P338909	RPD
		Dieldrin	4.7	U	ng/L	P338909	
		Endosulfan I	4.7	U	ng/L	P338909	
		Endosulfan II	4.7	U	ng/L	P338909	
		Endosulfan Sulfate	2.4	U	ng/L	P338909	MS, RPD
		Endrin	2.4	U	ng/L	P338909	
		Endrin Aldehyde	2.4	U	ng/L	P338909	
		Heptachlor	1.8	U	ng/L	P338909	
		Heptachlor Epoxide	2.4	U	ng/L	P338909	
		Methoxychlor	4.7	U	ng/L	P338909	
		Mirex	2.4	U	ng/L	P338909	
		Permethrin	12	U	ng/L	P338909	
		Trifluralin	1.2	U	ng/L	P338909	
		Alpha-Chlordane	1.2	U	ng/L	P338909	
		Gamma-Chlordane	1.2	U	ng/L	P338909	
		Endrin Ketone	2.4	U	ng/L	P338909	MS
		Dicofol	35	U	ng/L	P338909	
		Chlordane**	3.0	U	ng/L	P338909	
	EPA 8276						

Field ID: G2TLHR0031

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1961830	EPA 8276	Toxaphene**	15	U	ng/L	P338909	

Ref. Method and Comment:
EPA 8270D: Refer to the narrative for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338722

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P338791

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338791

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338912

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338914

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339120

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338827

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338964

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338955

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338754

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

Reference Method: EPA 8270D
Batch ID: P338909

Component	Result	Code	Units
Aldrin	4.0	U	ng/L
Alpha-BHC	2.0	U	ng/L
Alpha-Chlordane	1.0	U	ng/L
Beta-BHC	4.0	U	ng/L
Carbophenothion	4.0	U	ng/L
Chlorothalonil	2.0	U	ng/L
Cypermethrin	20	U	ng/L
DDD-p,p'	3.0	U	ng/L
DDE-p,p'	3.0	U	ng/L
DDT-p,p'	3.0	U	ng/L
Delta-BHC	4.0	U	ng/L
Dicofol	30	U	ng/L
Dieldrin	4.0	U	ng/L
Endosulfan I	4.0	U	ng/L
Endosulfan II	4.0	U	ng/L
Endosulfan Sulfate	2.0	U	ng/L
Endrin	2.0	U	ng/L
Endrin Aldehyde	2.0	U	ng/L
Endrin Ketone	2.0	U	ng/L
Gamma-BHC	4.0	U	ng/L
Gamma-Chlordane	1.0	U	ng/L
Heptachlor	1.5	U	ng/L
Heptachlor Epoxide	2.0	U	ng/L
Methoxychlor	4.0	U	ng/L
Mirex	2.0	U	ng/L
Permethrin	10	U	ng/L
Trifluralin	1.0	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8276
Batch ID: P338909

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Toxaphene	12	U	ng/L

Reference Method: EPA 8321B
Batch ID: P338691

Component	Result	Code	Units
AMPA	0.10	U	ug/L
Glyphosate	0.10	U	ug/L

Reference Method: EPA 8321B
Batch ID: P338701

Component	Result	Code	Units
3-Hydroxycarbofuran	0.0020	U	ug/L
Aldicarb	0.020	U	ug/L
Aldicarb Sulfone	0.0020	U	ug/L
Aldicarb Sulfoxide	0.0020	U	ug/L
Carbaryl	0.0020	U	ug/L
Carbofuran	0.0020	U	ug/L
Methiocarb	0.0020	U	ug/L
Methomyl	0.0020	U	ug/L
Oxamyl	0.0020	U	ug/L
Propoxur	0.0020	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Reference Method: EPA 8321B
Batch ID: P338739

Component	Result	Code	Units
Sucralose	0.010	U	ug/L

Reference Method: SM 2120 B
Batch ID: P338735

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P339015

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

Reference Method: SM 2540 C-97
Batch ID: P339140

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P339362

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P339020

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P339206

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

Reference Method: USGS O-2060-01
 Batch ID: P338701

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Bentazon	8.0E-04	U	ug/L
Carbamazepine	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	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
MCP	0.0020	U	ug/L
Primidone	0.0040	U	ug/L
Triclopyr	0.0040	U	ug/L

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P338791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	108		P	85 - 115
Magnesium	113		P	85 - 115
Potassium	104		P	85 - 115
Sodium	109		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P338791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	98.1		P	85 - 115
Cadmium	98.9		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	99.2		P	85 - 115
Copper	95.3		P	85 - 115
Lead	104		P	85 - 115
Nickel	97.8		P	85 - 115
Silver	99.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338912

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.5		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338914

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339120

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338827

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338964

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: P338955

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338754

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

Reference Method: EPA 8270D
Batch ID: P338909

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

Reference Method: EPA 8270D
Batch ID: P338909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	54.7	40.2	P/P	24 - 89.0
Alpha-BHC	88.3	80.6	P/P	58 - 117
Alpha-Chlordane	87.6	75.1	P/P	56 - 115
Beta-BHC	104	83.2	P/P	55 - 137
Carbophenothion	108	91.0	P/P	37 - 145
Chlorothalonil	95.4	90.2	P/P	26 - 163
Cypermethrin	108	94.0	P/P	42 - 156
DDD-p,p'	100	81.8	P/P	59 - 129
DDE-p,p'	88.5	75.3	P/P	52 - 117
DDT-p,p'	90.8	82.9	P/P	48 - 128
Delta-BHC	111	94.6	P/P	59 - 158
Dicofol	70.9	66.7	P/P	19 - 124
Dieldrin	88.0	79.6	P/P	57 - 126
Endosulfan I	90.6	76.7	P/P	59 - 133
Endosulfan II	106	99.0	P/P	58 - 148
Endosulfan Sulfate	91.7	81.8	P/P	56 - 135
Endrin	91.0	74.0	P/P	50 - 140
Endrin Aldehyde	96.3	74.2	P/P	47 - 141
Endrin Ketone	90.9	83.1	P/P	63 - 123
Gamma-BHC	110	98.4	P/P	59 - 132
Gamma-Chlordane	88.4	76.6	P/P	55 - 112
Heptachlor	75.4	66.7	P/P	45 - 102
Heptachlor Epoxide	86.1	76.0	P/P	61 - 116
Methoxychlor	101	93.6	P/P	60 - 133
Mirex	88.0	79.0	P/P	40 - 98.0
Permethrin	103	92.7	P/P	45 - 131
Trifluralin	84.9	77.8	P/P	38 - 179

Reference Method: EPA 8276
Batch ID: P338909

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	75.2	71.5	P/P	47 - 125
Toxaphene	80.4	70.9	P/P	46 - 147

Reference Method: EPA 8321B
Batch ID: P338691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
AMPA	106		P	40 - 150
Glyphosate	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P338701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
3-Hydroxycarbofuran	101		P	40 - 150
Aldicarb	124		P	30 - 150
Aldicarb Sulfone	104		P	40 - 150
Aldicarb Sulfoxide	114		P	40 - 150
Carbaryl	81.3		P	40 - 150
Carbofuran	95.2		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
 Batch ID: P338701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Methiocarb	79.5		P	40 - 150
Methomyl	107		P	40 - 150
Oxamyl	104		P	40 - 150
Propoxur	90.1		P	40 - 150
Pyraclostrobin	104		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P338739

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sucralose	111		P	40 - 150

Reference Method: SM 2320 B-97
 Batch ID: P339015

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

Reference Method: SM 4500 F-C-97
 Batch ID: P339020

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.1		P	92 - 103

Reference Method: SM 5310 B-00
 Batch ID: P339206

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.4		P	85 - 115

Reference Method: USGS O-2060-01
 Batch ID: P338701

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	76.3		P	40 - 150
Acetaminophen	102		P	30 - 150
Bentazon	79.7		P	30 - 150
Carbamazepine	106		P	40 - 150
Diuron	92.8		P	40 - 150
Fenuron	120		P	40 - 150
Fluridone	112		P	40 - 150
Imidacloprid	115		P	40 - 160
Linuron	103		P	40 - 150
MCPP	77.2		P	40 - 150
Primidone	118		P	40 - 150
Triclopyr	76.1		P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P338791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961215	Calcium	107		P	80 - 120
1961215	Iron	112		P	80 - 120
1961215	Magnesium	115		P	80 - 120
1961215	Potassium	104		P	80 - 120
1961215	Sodium	109		P	80 - 120
1961215	Zinc	109		P	80 - 120
1961785	Calcium	106	106	P/P	80 - 120
1961785	Iron	106	106	P/P	80 - 120
1961785	Magnesium	110	111	P/P	80 - 120
1961785	Potassium	109	107	P/P	80 - 120
1961785	Sodium	104	103	P/P	80 - 120
1961785	Zinc	100	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338791

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961215	Arsenic	99.1		P	80 - 120
1961215	Cadmium	100		P	80 - 120
1961215	Chromium	100		P	80 - 120
1961215	Copper	98.1		P	80 - 120
1961215	Lead	105		P	80 - 120
1961215	Nickel	100		P	80 - 120
1961215	Silver	97.7		P	80 - 120
1961785	Arsenic	98.9	99.3	P/P	80 - 120
1961785	Cadmium	99.2	101	P/P	80 - 120
1961785	Chromium	101	99.2	P/P	80 - 120
1961785	Copper	96.3	96.9	P/P	80 - 120
1961785	Lead	105	106	P/P	80 - 120
1961785	Nickel	100	99.1	P/P	80 - 120
1961785	Silver	98.5	99.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961961	Chloride	97.7		P	90 - 110
1961993	Chloride	98.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338914

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961961	Sulfate	97.1		P	90 - 110
1961993	Sulfate	97.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961781	Ammonia-N	103	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338827

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961781	Kjeldahl Nitrogen	102	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338964

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961782	NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338955

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961852	Total-P	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338754

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961819	O-Phosphate-P	97.9	98.3	P/P	90 - 110

Reference Method: EPA 8270D
Batch ID: P338909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1962128	Aldrin	61.9	46.5	P/P	26 - 96.0
1962128	Alpha-BHC	93.8	84.8	P/P	51 - 123
1962128	Alpha-Chlordane	76.9	60.6	P/P	45 - 120
1962128	Beta-BHC	71.6	47.8	P/P	43 - 146
1962128	Carbophenothion	153	137	P/P	26 - 179
1962128	Chlorothalonil	67.2	57.1	P/P	10 - 215
1962128	Cypermethrin	125	104	P/P	35 - 169
1962128	DDD-p,p'	77.2	55.7	P/P	49 - 131
1962128	DDE-p,p'	75.4	62.0	P/P	39 - 127
1962128	DDT-p,p'	72.8	53.5	P/P	49 - 120
1962128	Delta-BHC	91.6	62.7	P/P	49 - 187
1962128	Dicofol	60.2	58.8	P/P	10 - 129
1962128	Dieldrin	74.0	57.8	P/P	46 - 132
1962128	Endosulfan I	85.7	69.5	P/P	57 - 130
1962128	Endosulfan II	81.7	62.0	P/P	52 - 148
1962128	Endosulfan Sulfate	63.4	42.8	P/F	55 - 129
1962128	Endrin	80.8	69.8	P/P	45 - 133
1962128	Endrin Aldehyde	28.0	36.9	P/P	26 - 140
1962128	Endrin Ketone	65.3	49.3	P/F	60 - 125
1962128	Gamma-BHC	93.0	97.2	P/P	50 - 145
1962128	Gamma-Chlordane	79.4	62.2	P/P	44 - 118
1962128	Heptachlor	70.1	52.0	P/P	35 - 106
1962128	Heptachlor Epoxide	77.1	59.7	P/P	52 - 123
1962128	Methoxychlor	81.2	64.8	P/P	54 - 132
1962128	Mirex	75.0	59.5	P/P	36 - 107
1962128	Permethrin	111	90.2	P/P	47 - 135
1962128	Trifluralin	78.2	61.3	P/P	32 - 228

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P338909

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961515	Chlordane	63.4	65.4	P/P	41 - 134
1961515	Toxaphene	59.9	66.6	P/P	39 - 158

Reference Method: EPA 8321B
Batch ID: P338691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961018	AMPA	101	102	P/P	40 - 150
1961018	Glyphosate	100	104	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P338701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961605	3-Hydroxycarbofuran	127	133	P/P	40 - 150
1961605	Aldicarb	144	145	P/P	30 - 150
1961605	Aldicarb Sulfone	148	147	P/P	40 - 150
1961605	Aldicarb Sulfoxide	100	105	P/P	40 - 150
1961605	Carbaryl	80.1	84.5	P/P	40 - 150
1961605	Carbofuran	86.2	93.5	P/P	40 - 150
1961605	Methiocarb	86.2	89.1	P/P	40 - 150
1961605	Methomyl	97.4	96.7	P/P	40 - 150
1961605	Oxamyl	110	110	P/P	40 - 150
1961605	Propoxur	83.1	86.1	P/P	40 - 150
1961605	Pyraclostrobin	110	111	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P338739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961510	Sucralose	100	119	P/P	40 - 150

Reference Method: SM 4500 F-C-97
Batch ID: P339020

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961779	Fluoride	97.1	98.0	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P339206

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961636	Organic Carbon	103		P	85 - 115

Reference Method: USGS O-2060-01
Batch ID: P338701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961605	2,4-D	123	118	P/P	40 - 150
1961605	Acetaminophen	138	137	P/P	30 - 150
1961605	Bentazon	67.7	66.5	P/P	30 - 150
1961605	Carbamazepine	118	122	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: USGS O-2060-01
Batch ID: P338701

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1961605	Diuron	102	103	P/P	40 - 150
1961605	Fenuron	105	108	P/P	40 - 150
1961605	Fluridone	104	110	P/P	40 - 150
1961605	Imidacloprid	196	189	F/F	40 - 160
1961605	Linuron	105	108	P/P	40 - 150
1961605	MCP	95.4	91.8	P/P	40 - 150
1961605	Primidone	123	125	P/P	40 - 150
1961605	Triclopyr	105	99.8	P/P	40 - 150

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P338722

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961817	Turbidity	1.40	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P338791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961785	Calcium	0.495	Spike	P	0 - 20
1961785	Iron	0.557	Spike	P	0 - 20
1961785	Magnesium	0.521	Spike	P	0 - 20
1961785	Potassium	2.20	Spike	P	0 - 20
1961785	Sodium	0.886	Spike	P	0 - 20
1961785	Zinc	1.61	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P338791

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961785	Arsenic	0.396	Spike	P	0 - 20
1961785	Cadmium	1.73	Spike	P	0 - 20
1961785	Chromium	1.54	Spike	P	0 - 20
1961785	Copper	0.658	Spike	P	0 - 20
1961785	Lead	0.644	Spike	P	0 - 20
1961785	Nickel	1.30	Spike	P	0 - 20
1961785	Silver	1.29	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961961	Chloride	0.0654	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P338914

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961961	Sulfate	0.0906	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P339120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961781	Ammonia-N	0.231	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P338827

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961781	Kjeldahl Nitrogen	0.689	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P338964

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961782	NO2NO3-N	0.599	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P338955

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961852	Total-P	0.803	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P338754

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961819	O-Phosphate-P	0.342	Spike	P	0 - 20

Reference Method: EPA 8270D
Batch ID: P338909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962128	Aldrin	28.5	Spike	P	0 - 30
1962128	Alpha-BHC	10.1	Spike	P	0 - 30
1962128	Alpha-Chlordane	23.7	Spike	P	0 - 30
1962128	Beta-BHC	39.8	Spike	F	0 - 30
1962128	Carbophenothion	10.8	Spike	P	0 - 30
1962128	Chlorothalonil	16.4	Spike	P	0 - 30
1962128	Cypermethrin	18.0	Spike	P	0 - 30
1962128	DDD-p,p'	32.4	Spike	F	0 - 30
1962128	DDE-p,p'	19.5	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270D
Batch ID: P338909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1962128	DDT-p,p'	30.4	Spike	F	0 - 30
1962128	Delta-BHC	37.6	Spike	F	0 - 30
1962128	Dicofol	2.32	Spike	P	0 - 30
1962128	Dieldrin	24.7	Spike	P	0 - 30
1962128	Endosulfan I	20.9	Spike	P	0 - 30
1962128	Endosulfan II	27.3	Spike	P	0 - 30
1962128	Endosulfan Sulfate	38.9	Spike	F	0 - 30
1962128	Endrin	14.5	Spike	P	0 - 30
1962128	Endrin Aldehyde	27.4	Spike	P	0 - 30
1962128	Endrin Ketone	27.9	Spike	P	0 - 30
1962128	Gamma-BHC	4.50	Spike	P	0 - 30
1962128	Gamma-Chlordane	24.3	Spike	P	0 - 30
1962128	Heptachlor	29.7	Spike	P	0 - 30
1962128	Heptachlor Epoxide	25.3	Spike	P	0 - 30
1962128	Methoxychlor	22.5	Spike	P	0 - 30
1962128	Mirex	23.0	Spike	P	0 - 30
1962128	Permethrin	21.1	Spike	P	0 - 30
1962128	Trifluralin	24.3	Spike	P	0 - 30
LFB	Aldrin	30.6	LCS	F	0 - 30
LFB	Alpha-BHC	9.13	LCS	P	0 - 30
LFB	Alpha-Chlordane	15.4	LCS	P	0 - 30
LFB	Beta-BHC	22.0	LCS	P	0 - 30
LFB	Carbophenothion	17.3	LCS	P	0 - 30
LFB	Chlorothalonil	5.63	LCS	P	0 - 30
LFB	Cypermethrin	13.8	LCS	P	0 - 30
LFB	DDD-p,p'	20.1	LCS	P	0 - 30
LFB	DDE-p,p'	16.1	LCS	P	0 - 30
LFB	DDT-p,p'	9.16	LCS	P	0 - 30
LFB	Delta-BHC	16.0	LCS	P	0 - 30
LFB	Dicofol	5.99	LCS	P	0 - 30
LFB	Dieldrin	10.0	LCS	P	0 - 30
LFB	Endosulfan I	16.6	LCS	P	0 - 30
LFB	Endosulfan II	6.64	LCS	P	0 - 30
LFB	Endosulfan Sulfate	11.4	LCS	P	0 - 30
LFB	Endrin	20.7	LCS	P	0 - 30
LFB	Endrin Aldehyde	26.0	LCS	P	0 - 30
LFB	Endrin Ketone	8.92	LCS	P	0 - 30
LFB	Gamma-BHC	11.1	LCS	P	0 - 30
LFB	Gamma-Chlordane	14.2	LCS	P	0 - 30
LFB	Heptachlor	12.3	LCS	P	0 - 30
LFB	Heptachlor Epoxide	12.6	LCS	P	0 - 30
LFB	Methoxychlor	7.10	LCS	P	0 - 30
LFB	Mirex	10.7	LCS	P	0 - 30
LFB	Permethrin	10.8	LCS	P	0 - 30
LFB	Trifluralin	8.65	LCS	P	0 - 30

Reference Method: EPA 8276
Batch ID: P338909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P338909

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961515	Chlordane	3.04	Spike	P	0 - 30
1961515	Toxaphene	10.6	Spike	P	0 - 30
LFB	Chlordane	5.06	LCS	P	0 - 30
LFB	Toxaphene	12.6	LCS	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P338691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961018	AMPA	1.43	Spike	P	0 - 30
1961018	Glyphosate	3.53	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P338701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961605	3-Hydroxycarbofuran	4.41	Spike	P	0 - 30
1961605	Aldicarb	0.758	Spike	P	0 - 30
1961605	Aldicarb Sulfone	1.02	Spike	P	0 - 30
1961605	Aldicarb Sulfoxide	4.82	Spike	P	0 - 30
1961605	Carbaryl	5.31	Spike	P	0 - 30
1961605	Carbofuran	8.16	Spike	P	0 - 30
1961605	Methiocarb	3.34	Spike	P	0 - 30
1961605	Methomyl	0.767	Spike	P	0 - 30
1961605	Oxamyl	0.0650	Spike	P	0 - 30
1961605	Propoxur	3.56	Spike	P	0 - 30
1961605	Pyraclostrobin	1.26	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P338739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961510	Sucralose	14.1	Spike	P	0 - 30

Reference Method: SM 2120 B
Batch ID: P338735

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961817	Color (true)	0.539	Sample	P	0 - 20

Reference Method: SM 2540 C-97
Batch ID: P339140

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961614	TDS	5.10	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-97
Batch ID: P339020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961779	Fluoride	0.938	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P339206

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961636	Organic Carbon	1.66	Spike	P	0 - 20

Reference Method: USGS O-2060-01
Batch ID: P338701

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1961605	2,4-D	4.40	Spike	P	0 - 30
1961605	Acetaminophen	1.09	Spike	P	0 - 30
1961605	Bentazon	1.79	Spike	P	0 - 30
1961605	Carbamazepine	2.50	Spike	P	0 - 30
1961605	Diuron	1.36	Spike	P	0 - 30
1961605	Fenuron	3.20	Spike	P	0 - 30
1961605	Fluridone	5.77	Spike	P	0 - 30
1961605	Imidacloprid	3.48	Spike	P	0 - 30
1961605	Linuron	2.35	Spike	P	0 - 30
1961605	MCPP	3.85	Spike	P	0 - 30
1961605	Primidone	1.29	Spike	P	0 - 30
1961605	Triclopyr	5.25	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: 1961823
Field Sample ID: G2TLHR0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	107	P	30 - 160
EPA 8321B	Diuron-d6	96.2	P	30 - 160
EPA 8321B	Diuron-d6	96.2	P	30 - 160
EPA 8321B	Diuron-d6	96.2	P	30 - 160
EPA 8321B	Diuron-d6	96.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	88.2	P	40 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Primidone-d5	118	P	30 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160
EPA 8321B	Sucralose-d6	101	P	40 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 1961823
Field Sample ID: G2TLHR0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
USGS O-2060-01	2,4-D-d3	80.0	P	30 - 160
USGS O-2060-01	Acetaminophen-d4	105	P	30 - 160
USGS O-2060-01	Carbamazepine-d10	107	P	30 - 160
USGS O-2060-01	Diuron-d6	96.2	P	30 - 160
USGS O-2060-01	Diuron-d6	96.2	P	30 - 160
USGS O-2060-01	Primidone-d5	118	P	30 - 160
USGS O-2060-01	Sucralose-d6	101	P	40 - 160

Lab Sample ID: 1961824
Field Sample ID: G2TLHR0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Carbaryl-d7	75.8	P	30 - 160

Lab Sample ID: 1961830
Field Sample ID: G2TLHR0031

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270D	Decachlorobiphenyl	74.8	P	37 - 117
EPA 8270D	Tetrachloro-m-xylene	60.1	P	34 - 101
EPA 8276	Decachlorobiphenyl	55.0	P	31 - 108
EPA 8276	PCNB	114	P	40 - 130

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A81616
Included Lab Sample IDs: 1961817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	97.6	103	P/P	90 - 110
Sulfate	98.0	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A81628
Included Lab Sample IDs: 1961817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.5	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A81630
Included Lab Sample IDs: 1961817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A81635

Included Lab Sample IDs: 1961819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81671

Included Lab Sample IDs: 1961823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Pyraclostrobin	104	110	P/P	60 - 150

Reference Method: USGS O-2060-01

Run ID: A81671

Included Lab Sample IDs: 1961823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.0	102	P/P	50 - 150
Acetaminophen	103	103	P/P	60 - 150
Bentazon	104	101	P/P	50 - 150
Carbamazepine	108	107	P/P	60 - 150
Diuron	108	109	P/P	60 - 150
Fenuron	108	111	P/P	60 - 150
Fluridone	119	121	P/P	60 - 160
Imidacloprid	103	109	P/P	60 - 150
Linuron	109	114	P/P	60 - 150
MCPP	88.5	95.5	P/P	50 - 150
Primidone	116	116	P/P	60 - 150
Triclopyr	90.7	99.6	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A81676

Included Lab Sample IDs: 1961823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	75.8	77.0	P/P	60 - 150
Glyphosate	73.6	78.5	P/P	60 - 150

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A81688

Included Lab Sample IDs: 1961832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	100	P/P	90 - 110
Iron	99.0	98.3	P/P	90 - 110
Magnesium	99.1	98.7	P/P	90 - 110
Potassium	101	97.2	P/P	90 - 110
Sodium	105	102	P/P	90 - 110
Zinc	97.8	99.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A81701

Included Lab Sample IDs: 1961818

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A81718

Included Lab Sample IDs: 1961818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A81723

Included Lab Sample IDs: 1961818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	106	108	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A81727

Included Lab Sample IDs: 1961823

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	111	114	P/P	60 - 150

Reference Method: SM 2320 B-97

Run ID: A81736

Included Lab Sample IDs: 1961817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	97.2	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A81736

Included Lab Sample IDs: 1961817

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A81741

Included Lab Sample IDs: 1961832

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	97.2	98.2	P/P	90 - 110
Cadmium	97.4	99.3	P/P	90 - 110
Chromium	96.9	98.1	P/P	90 - 110
Copper	97.1	96.4	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	97.8	97.6	P/P	90 - 110
Silver	99.1	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A81777

Included Lab Sample IDs: 1961818

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

Reference Method: SM 5310 B-00

Run ID: A81806

Included Lab Sample IDs: 1961818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.5	97.5	P/P	90 - 110

Reference Method: EPA 8270D

Run ID: A81858

Included Lab Sample IDs: 1961830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.1		P	80 - 120
Alpha-BHC	94.1		P	80 - 120
Alpha-Chlordane	99.0		P	80 - 120
Beta-BHC	91.5		P	80 - 120
Carbophenothion	102		P	80 - 120
Chlorothalonil	102		P	80 - 120
Cypermethrin	98.3		P	80 - 120
DDD-p,p'	99.0		P	80 - 120
DDE-p,p'	99.3		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	96.5		P	80 - 120
Dicofol	99.2		P	80 - 120
Dieldrin	95.8		P	80 - 120
Endosulfan I	96.9		P	80 - 120
Endosulfan II	97.7		P	80 - 120
Endosulfan Sulfate	99.5		P	80 - 120
Endrin	99.6		P	80 - 120
Endrin Aldehyde	95.3		P	80 - 120
Endrin Ketone	98.5		P	80 - 120
Gamma-BHC	93.3		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	96.4		P	80 - 120
Heptachlor Epoxide	99.0		P	80 - 120
Methoxychlor	104		P	80 - 120
Mirex	104		P	80 - 120
Permethrin	97.6		P	80 - 120
Trifluralin	99.0		P	80 - 120

Reference Method: EPA 8276

Run ID: A81889

Included Lab Sample IDs: 1961830

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.3		P	80 - 120
Toxaphene	80.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: AA81671

Included Lab Sample IDs: 1961824

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
3-Hydroxycarbofuran	104	110	P/P	60 - 150
Aldicarb	105	119	P/P	60 - 150
Aldicarb Sulfone	100	109	P/P	50 - 150
Aldicarb Sulfoxide	104	112	P/P	50 - 150
Carbaryl	97.8	96.8	P/P	60 - 150
Carbofuran	112	110	P/P	50 - 150
Methiocarb	108	98.3	P/P	50 - 150
Methomyl	108	107	P/P	50 - 150
Oxamyl	102	113	P/P	50 - 150
Propoxur	104	105	P/P	50 - 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
EPA 180.1 Rev. 2.0	Turbidity							1.40	
EPA 200.7 Rev. 4.4	Calcium	109		107	106	106			0.495
	Iron	108		112	106	106			0.557
	Magnesium	113		115	110	111			0.521
	Potassium	104		104	109	107			2.20
	Sodium	109		109	104	103			0.886
	Zinc	102		109	100	102			1.61
EPA 200.8 Rev. 5.4	Arsenic	98.1		99.1	98.9	99.3			0.396
	Cadmium	98.9		100	99.2	101			1.73
	Chromium	99.2		100	101	99.2			1.54
	Copper	95.3		98.1	96.3	96.9			0.658
	Lead	104		105	105	106			0.644
	Nickel	97.8		100	100	99.1			1.30
	Silver	99.0		97.7	98.5	99.7			1.29
EPA 300.0 Rev. 2.1	Chloride	97.5		97.7	98.4			0.0654	
	Sulfate	96.4		97.1	97.5			0.0906	
EPA 350.1 Rev. 2.0	Ammonia-N	103		103	103				0.231
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.0		102	101				0.689
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	106		106	106				0.599
EPA 365.1 Rev. 2.0	Total-P	106		106	106				0.803
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		97.9	98.3				0.342
EPA 8270D	Aldrin	54.7	40.2	61.9	46.5		30.6		28.5
	Alpha-BHC	88.3	80.6	93.8	84.8		9.13		10.1
	Alpha-Chlordane	87.6	75.1	76.9	60.6		15.4		23.7
	Beta-BHC	104	83.2	71.6	47.8		22.0		39.8
	Carbophenothion	108	91.0	153	137		17.3		10.8
	Chlorothalonil	95.4	90.2	67.2	57.1		5.63		16.4
	Cypermethrin	108	94.0	125	104		13.8		18.0
	DDD-p,p'	100	81.8	77.2	55.7		20.1		32.4
	DDE-p,p'	88.5	75.3	75.4	62.0		16.1		19.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
						SMP	
EPA 8270D	DDT-p,p'	90.8	82.9	72.8	53.5	9.16	30.4
	Delta-BHC	111	94.6	91.6	62.7	16.0	37.6
	Dicofol	70.9	66.7	60.2	58.8	5.99	2.32
	Dieldrin	88.0	79.6	74.0	57.8	10.0	24.7
	Endosulfan I	90.6	76.7	85.7	69.5	16.6	20.9
	Endosulfan II	106	99.0	81.7	62.0	6.64	27.3
	Endosulfan Sulfate	91.7	81.8	63.4	42.8	11.4	38.9
	Endrin	91.0	74.0	80.8	69.8	20.7	14.5
	Endrin Aldehyde	96.3	74.2	28.0	36.9	26.0	27.4
	Endrin Ketone	90.9	83.1	65.3	49.3	8.92	27.9
	Gamma-BHC	110	98.4	93.0	97.2	11.1	4.50
	Gamma-Chlordane	88.4	76.6	79.4	62.2	14.2	24.3
	Heptachlor	75.4	66.7	70.1	52.0	12.3	29.7
	Heptachlor Epoxide	86.1	76.0	77.1	59.7	12.6	25.3
	Methoxychlor	101	93.6	81.2	64.8	7.10	22.5
	Mirex	88.0	79.0	75.0	59.5	10.7	23.0
	Permethrin	103	92.7	111	90.2	10.8	21.1
	Trifluralin	84.9	77.8	78.2	61.3	8.65	24.3
	Chlordane	75.2	71.5	63.4	65.4	5.06	3.04
	Toxaphene	80.4	70.9	59.9	66.6	12.6	10.6
EPA 8276							
EPA 8321B	3-Hydroxycarbofuran	101		127	133		4.41
	Aldicarb	124		144	145		0.758
	Aldicarb Sulfone	104		148	147		1.02
	Aldicarb Sulfoxide	114		100	105		4.82
	AMPA	106		101	102		1.43
	Carbaryl	81.3		80.1	84.5		5.31
	Carbofuran	95.2		86.2	93.5		8.16
	Glyphosate	105		100	104		3.53
	Methiocarb	79.5		86.2	89.1		3.34
	Methomyl	107		97.4	96.7		0.767
	Oxamyl	104		110	110		0.0650
	Propoxur	90.1		83.1	86.1		3.56
	Pyraclostrobin	104		110	111		1.26
	Sucralose	111		100	119		14.1
SM 2120 B	Color (true)					0.539	
SM 2320 B-97	Total Alkalinity	101					
SM 2540 C-97	TDS					5.10	
SM 4500 F-C-97	Fluoride	96.1		97.1	98.0		0.938
SM 5310 B-00	Organic Carbon	93.4		103			1.66
USGS O-2060-01	2,4-D	76.3		118	123		4.40
	Acetaminophen	102		138	137		1.09
	Bentazon	79.7		66.5	67.7		1.79
	Carbamazepine	106		118	122		2.50
	Diuron	92.8		102	103		1.36
	Fenuron	120		105	108		3.20
	Fluridone	112		104	110		5.77
	Imidacloprid	115		196	189		3.48
	Linuron	103		105	108		2.35
	MCPP	77.2		91.8	95.4		3.85
	Primidone	118		123	125		1.29
	Triclopyr	76.1		99.8	105		5.25

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1961817
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1961832
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1961832
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1961817
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1961817
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1961818
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1961818
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1961818
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1961818
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1961819
EPA 8270D / E31780	Organochlorine pesticides in water matrices by GC/MS-SIM	1961830
EPA 8276 / E31780	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	1961830
EPA 8321B / E31780	Analysis of sucralose in water matrices by HPLC/MS/MS	1961823
EPA 8321B / E31780	Carbamates in water matrices by HPLC/MS/MS	1961824
EPA 8321B / E31780	Glyphosate in water matrices by HPLC/MS/MS	1961823
EPA 8321B / E31780	Pyraclostrobin in water matrices by HPLC/MS/MS	1961823
SM 2120 B / E31780	True Color measured at 450 nm	1961817
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1961817
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1961817
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1961817
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1961817
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1961818
USGS O-2060-01 / E31780	Chlorinated (phenoxy acid) herbicides in water matrices by HPLC/MS/MS	1961823
USGS O-2060-01 / E31780	Urea herbicides and other chemicals in water matrices by HPLC/MS/MS	1961823

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	01/24/2018			01/24/2018 15:22	DeAsia Armster	1961817
EPA 200.7 Rev. 4.4	01/24/2018	01/25/2018	Elliott D. Healy	01/26/2018	Martin Acosta	1961832
EPA 200.8 Rev. 5.4	01/24/2018	01/25/2018	Elliott D. Healy	01/30/2018	Nadine Brooks	1961832
EPA 300.0 Rev. 2.1	01/24/2018			01/26/2018	Julia Storbeck	1961817
EPA 350.1 Rev. 2.0	01/24/2018			01/31/2018	Ping Hua	1961818
EPA 351.2 Rev. 2.0	01/24/2018	01/26/2018	Adrian Shelby	01/29/2018	Joseph Suarez	1961818
EPA 353.2 Rev. 2.0	01/24/2018			01/29/2018	Beverly Y. Sanders	1961818
EPA 365.1 Rev. 2.0	01/24/2018	01/29/2018	Sima Feizi	01/30/2018	Beverly Y. Sanders	1961818
EPA 365.1 Rev. 2.0 dissolved	01/24/2018			01/24/2018 15:01	Megan Treadwell	1961819
EPA 8270D	01/24/2018	01/29/2018	John Kaba	02/01/2018	Marek Topolski	1961830
EPA 8276	01/24/2018	01/29/2018	John Kaba	02/06/2018	John P. Burgos	1961830
EPA 8321B	01/24/2018	01/25/2018	Hoor Shaik	01/26/2018	Julie Michelle Frank	1961824
	01/24/2018	01/25/2018	Hoor Shaik	01/26/2018	S. M. Reddy	1961823
	01/24/2018	01/26/2018	Juyoung Kim	01/26/2018	Juyoung Kim	1961823
SM 2120 B	01/24/2018			01/24/2018 16:38	Tanya Welborn	1961817
SM 2320 B-97	01/24/2018			01/30/2018	Lauren Bottorf	1961817
SM 2540 C-97	01/24/2018			01/26/2018	Yijie Li	1961817
SM 2540 D-97	01/24/2018			01/26/2018	Yijie Li	1961817
SM 4500 F-C-97	01/24/2018			01/30/2018	Lauren Bottorf	1961817
SM 5310 B-00	01/24/2018			02/01/2018	Megan Treadwell	1961818
USGS O-2060-01	01/24/2018	01/25/2018	Hoor Shaik	01/26/2018	Julie Michelle Frank	1961823
	01/24/2018	01/25/2018	Hoor Shaik	01/27/2018	Julie Michelle Frank	1961823