

Chemical Analysis Report

SE-DIST-2023-05-12-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **SMP - Highlands**
Request ID: **RQ-2023-05-01-53**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Andrew Luering

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Colin Wright, Program Administrator

Date Certified: 05-JUN-2023 13:59



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 by the Florida Department of Health Environmental Laboratory Certification Program 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: JACKSON CREEK NORTH OF SR 66

Collection Date/Time: 05/11/2023 10:00

Field ID: G4SE0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409324	DEP SOP: NU-094-1	Color (true)	53		PCU	P429837	
	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P429841	RPD
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P430019	
		Sulfate	17		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	6.6		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	75		mg/L	P430415	
	SM 2540 D-2015	TSS	10	I	mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.035	I	mg F/L	P430159	
2409326	EPA 350.1 Rev. 2.0	Ammonia-N	0.079		mg N/L	P429972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P430040	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.41		mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P429967	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P429963	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ARBUCKLE CREEK AT US HWY 98

Collection Date/Time: 05/11/2023 10:45

Field ID: G4SE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409325	DEP SOP: NU-094-1	Color (true)	81		PCU	P429837	
	EPA 180.1 Rev. 2.0	Turbidity	7.8		NTU	P429841	RPD
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P430019	
		Sulfate	30		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	132		mg/L	P430415	
	SM 2540 D-2015	TSS	12		mg/L	P430220	
2409327	SM 4500-F- C-2011	Fluoride	0.074	I	mg F/L	P430159	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P429972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P430040	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.070		mg P/L	P429967	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P429963	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: ARBUCKLE BRANCH AT ARBUCKLE CREEK RD

Collection Date/Time: 05/11/2023 11:15

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409328	DEP SOP: NU-094-1	Color (true)	53		PCU	P429837	
	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P429841	RPD
	EPA 300.0 Rev. 2.1	Chloride	40		mg Cl/L	P430019	
		Sulfate	29		mg SO4/L	P430023	
	SM 2320 B-2011	Total Alkalinity	2.7		mg CaCO3/L	P430154	
	SM 2540 C-2015	TDS	157		mg/L	P430415	
	SM 2540 D-2015	TSS	13		mg/L	P430220	
	SM 4500-F- C-2011	Fluoride	0.044	I	mg F/L	P430159	
2409329	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P429972	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P430040	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	I	mg N/L	P430280	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P429967	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P430031	
2409359	EPA 8321B	2,4-D	0.0021	I	ug/L	P429889	
		Acesulfame K	0.10	U	ug/L	P429806	
		2,4,5-T	0.0040	U	ug/L	P429889	
		AMPA	0.10	U	ug/L	P429806	
		Acetaminophen	0.0080	U	ug/L	P429889	
		Acetamiprid	0.0020	U	ug/L	P429889	
		Endothall	0.25	U	ug/L	P429806	
		Glufosinate	0.10	U	ug/L	P429806	
		Glyphosate	0.10	U	ug/L	P429806	
		Afidopyropen	0.0020	U	ug/L	P429889	
		Bentazon	0.0021	I	ug/L	P429889	
		Sucralose	0.059		ug/L	P429806	
		Benzovindiflupyr	0.0020	U	ug/L	P429889	
		Carbamazepine	8.0E-04	U	ug/L	P429889	
		Clothianidin	0.0020	U	ug/L	P429889	
		Dinotefuran	0.0020	U	ug/L	P429889	
		Diuron	0.0020	U	ug/L	P429889	
		Fenuron	0.032	U	ug/L	P429889	
		Fluridone	8.0E-04	U	ug/L	P429889	
		Imazapyr	0.0040	U	ug/L	P429889	
		Hydrocodone	0.0020	U	ug/L	P429889	
		Ibuprofen	0.080	U	ug/L	P429889	
		Imidacloprid	0.0023	I	ug/L	P429889	
		Linuron	0.0040	U	ug/L	P429889	
		Mandestrobin	0.0020	U	ug/L	P429889	
		MCP	0.0020	U	ug/L	P429889	
		Naproxen	0.0080	U	ug/L	P429889	
		Primidone	0.0040	U	ug/L	P429889	
		Pyraclostrobin	0.0020	U	ug/L	P429889	
		Silvex	0.0040	U	ug/L	P429889	

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409359	EPA 8321B	Thiamethoxam	0.0020	U	ug/L	P429889	
		Tolfenpyrad	0.0020	U	ug/L	P429889	
		Triclopyr	0.0040	U	ug/L	P429889	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: KISSIMMEE TRIBUTARY AT US 98 EAST OF BUCKHORN

Collection Date/Time: 05/11/2023 12:30

Field ID: G4SE0155

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409360	EPA 8321B	2,4-D	0.0035	I	ug/L	P429889	
		Acesulfame K	0.10	U	ug/L	P429806	
		2,4,5-T	0.0040	U	ug/L	P429889	
		AMPA	0.10	U	ug/L	P429806	
		Acetaminophen	0.0080	U	ug/L	P429889	
		Acetamiprid	0.0020	U	ug/L	P429889	
		Endothall	0.25	U	ug/L	P429806	
		Glufosinate	0.10	U	ug/L	P429806	
		Glyphosate	0.10	U	ug/L	P429806	
		Afidopyropen	0.0020	U	ug/L	P429889	
		Bentazon	8.0E-04	U	ug/L	P429889	
		Sucralose	0.010	U	ug/L	P429806	
		Benzovindiflupyr	0.0020	U	ug/L	P429889	
		Carbamazepine	8.0E-04	U	ug/L	P429889	
		Clothianidin	0.026		ug/L	P429889	
		Dinotefuran	0.0020	U	ug/L	P429889	
		Diuron	0.0035	I	ug/L	P429889	
		Fenuron	0.032	U	ug/L	P429889	
		Fluridone	8.0E-04	U	ug/L	P429889	
		Imazapyr	0.0040	U	ug/L	P429889	
		Hydrocodone	0.0020	U	ug/L	P429889	
		Ibuprofen	0.080	U	ug/L	P429889	
		Imidacloprid	0.093		ug/L	P429889	
		Linuron	0.0040	U	ug/L	P429889	
		Mandestrobin	0.0020	U	ug/L	P429889	
		MCPP	0.0020	U	ug/L	P429889	
		Naproxen	0.0080	U	ug/L	P429889	
		Primidone	0.0040	U	ug/L	P429889	
		Pyraclostrobin	0.0020	U	ug/L	P429889	
		Silvex	0.0040	U	ug/L	P429889	
		Thiamethoxam	0.028		ug/L	P429889	
		Tolfenpyrad	0.0020	U	ug/L	P429889	
		Triclopyr	0.0040	U	ug/L	P429889	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: INDIAN PRAIRIE CANAL UPSTREAM OF SR 70 Collection Date/Time: 05/11/2023 09:00

Field ID: G4SE0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409351	EPA 8270E	Aldrin	0.67	U	ng/L	P430111	
		Alpha-BHC	0.10	U	ng/L	P430111	
		Alpha-Chlordane	0.21	U	ng/L	P430111	
		PCB-1016	2.1	U	ng/L	P430111	
		Beta-BHC	0.13	I	ng/L	P430111	
		PCB-1221	2.1	U	ng/L	P430111	
		Beta-Cyfluthrin	1.3	U	ng/L	P430111	
		PCB-1232	2.1	U	ng/L	P430111	
		Bifenthrin	0.51	U	ng/L	P430111	
		PCB-1242	2.1	U	ng/L	P430111	
		PCB-1248	2.1	U	ng/L	P430111	
		Chlorothalonil	3.7	U	ng/L	P430111	
		PCB-1254	2.1	U	ng/L	P430111	
		Cis-Nonachlor	0.21	U	ng/L	P430111	
		PCB-1260	2.1	U	ng/L	P430111	
		Cypermethrin	1.5	U	ng/L	P430111	
		Dacthal	0.15	U	ng/L	P430111	
		DDD-p,p'	0.26	U	ng/L	P430111	
		DDE-p,p'	0.21	U	ng/L	P430111	
		DDT-p,p'	0.26	U	ng/L	P430111	
		Delta-BHC	0.41	U	ng/L	P430111	
		Deltamethrin	1.3	U	ng/L	P430111	
		Dichlobenil	0.26	U	ng/L	P430111	
		Dicofol	1.3	U	ng/L	P430111	
		Dieldrin	0.41	U	ng/L	P430111	
		Endosulfan I	0.41	U	ng/L	P430111	
		Endosulfan II	0.41	U	ng/L	P430111	
		Endosulfan Sulfate	0.31	U	ng/L	P430111	
		Endrin	0.41	U	ng/L	P430111	
		Endrin Aldehyde	0.77	U	ng/L	P430111	
		Endrin Ketone	0.41	U	ng/L	P430111	
		Esfenvalerate	0.77	U	ng/L	P430111	
		Ethalfuralin	0.15	U	ng/L	P430111	
		Fenpropathrin	0.26	U	ng/L	P430111	
		Gamma-BHC	0.13	U	ng/L	P430111	
		Gamma-Chlordane	0.21	U	ng/L	P430111	
		Heptachlor	0.21	U	ng/L	P430111	
		Heptachlor Epoxide	0.26	U	ng/L	P430111	
		Hexachlorobenzene**	1.0	U	ng/L	P430111	
		Kepone	5.1	U	ng/L	P430111	
		Lambda-Cyhalothrin	0.77	U	ng/L	P430111	
		Methoprene	0.77	U	ng/L	P430111	
		Methoxychlor	0.31	U	ng/L	P430111	
		MGK-264	0.21	U	ng/L	P430111	

Field ID: G4SE0152

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2409351	EPA 8270E	Mirex	0.36	U	ng/L	P430111	
		Oxychlordane	0.31	U	ng/L	P430111	
		Permethrin	1.6	U	ng/L	P430111	
		Phenothrin	0.93	U	ng/L	P430111	
		Piperonyl Butoxide	0.21	I	ng/L	P430111	
		Prallethrin	2.1	U	ng/L	P430111	
		Tau-Fluvalinate	0.26	U	ng/L	P430111	
		Tetramethrin	0.77	U	ng/L	P430111	
		Trans-Nonachlor	0.21	U	ng/L	P430111	
		Triclosan Methyl	0.15	U	ng/L	P430111	
		Trifluralin	0.21	U	ng/L	P430111	
	EPA 8276	Chlordane	2.1	U	ng/L	P430111	
		Toxaphene	15	U	ng/L	P430111	
2409361	EPA 200.7 Rev. 4.4	Calcium	28.3		mg/L	P429881	
		Iron	230		ug/L	P429881	
		Magnesium	11.5		mg/L	P429881	
		Potassium	6.7		mg/L	P429881	
		Sodium	27.7		mg/L	P429881	
		Strontium	1.90E+03		ug/L	P429881	
		Tin	3.0	U	ug/L	P429881	
		Titanium	0.75	U	ug/L	P429881	
		Vanadium	2.0	U	ug/L	P429881	
		Zinc	5.0	U	ug/L	P429881	
	EPA 200.8 Rev. 5.4	Aluminum	80		ug/L	P429881	
		Antimony	0.085	I	ug/L	P429881	
		Arsenic	0.92		ug/L	P429881	
		Barium	23.9		ug/L	P429881	
		Beryllium	0.012	I	ug/L	P429881	
		Boron	39.5		ug/L	P429881	
		Cadmium	0.020	U	ug/L	P429881	
		Chromium	0.40	U	ug/L	P429881	
		Cobalt	0.103		ug/L	P429881	
		Copper	0.68	I	ug/L	P429881	
		Lead	0.21	I	ug/L	P429881	
		Manganese	23.9		ug/L	P429881	
		Molybdenum	0.25	I	ug/L	P429881	
		Nickel	0.50	U	ug/L	P429881	
		Selenium	0.20	U	ug/L	P429881	
	SM 2340 B-2011	Silver	0.010	U	ug/L	P429881	
		Thallium	0.10	U	ug/L	P429881	
		Hardness	118		mg/L	P429881	

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P429881

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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429881

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430040

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429967

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

Reference Method: EPA 8270E
Batch ID: P430111

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P430111

Component	Result	Code	Units
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P430111

Component	Result	Code	Units
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P430111

Component	Result	Code	Units
Chlordane	2.0	U	ng/L
Chlordane	2.0	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Reference Method: EPA 8321B

Batch ID: P429806

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P429806

Component	Result	Code	Units
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P429889

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.080	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P430154

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

Reference Method: SM 2540 C-2015
Batch ID: P430415

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P430220

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P429963

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

Reference Method: SM 5310 B-2011
Batch ID: P430031

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P429881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	106		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	103		P	85 - 115
Sodium	98.1		P	85 - 115
Strontium	100		P	85 - 115
Tin	105		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429881

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.8		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	98.6		P	85 - 115
Barium	102		P	85 - 115
Beryllium	94.6		P	85 - 115
Boron	101		P	85 - 115
Cadmium	99.3		P	85 - 115
Chromium	93.3		P	85 - 115
Cobalt	99.4		P	85 - 115
Copper	96.4		P	85 - 115
Lead	101		P	85 - 115
Manganese	96.4		P	85 - 115
Molybdenum	97.5		P	85 - 115
Nickel	95.9		P	85 - 115
Selenium	98.7		P	85 - 115
Silver	102		P	85 - 115
Thallium	97.2		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430040

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429967

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

Reference Method: EPA 8270E
Batch ID: P430111

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	61.8		P	10 - 92.0
Alpha-BHC	86.5		P	75 - 107
Alpha-Chlordane	69.2		P	50 - 108
Beta-BHC	94.0		P	36 - 138
Beta-Cyfluthrin	80.2		P	20 - 161
Bifenthrin	59.4		P	10 - 119
Chlorothalonil	72.8		P	26 - 186
Cis-Nonachlor	67.3		P	42 - 119
Cypermethrin	82.1		P	22 - 150
Dacthal	89.9		P	72 - 119
DDD-p,p'	72.0		P	45 - 107
DDE-p,p'	75.6		P	48 - 106
DDT-p,p'	73.3		P	48 - 110
Delta-BHC	84.4		P	54 - 140
Deltamethrin	88.4		P	22 - 189
Dichlobenil	89.2		P	36 - 117
Dicofol	70.5		P	46 - 155
Dieldrin	76.3		P	54 - 110
Endosulfan I	69.3		P	59 - 105
Endosulfan II	83.1		P	51 - 118
Endosulfan Sulfate	88.9		P	57 - 121
Endrin	71.8		P	10 - 120

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P430111

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Endrin Aldehyde	70.0		P	34 - 118
Endrin Ketone	119		P	69 - 177
Esfenvalerate	74.0		P	23 - 168
Ethalfuralin	65.8		P	49 - 99.0
Fenpropathrin	69.1		P	34 - 117
Gamma-BHC	86.5		P	72 - 117
Gamma-Chlordane	70.0		P	43 - 106
Heptachlor	69.8		P	41 - 98.0
Heptachlor Epoxide	85.0		P	57 - 106
Hexachlorobenzene	67.5		P	36 - 99.0
Kepone	101		P	16 - 215
Lambda-Cyhalothrin	65.8		P	21 - 177
Methoprene	63.3		P	10 - 119
Methoxychlor	82.7		P	60 - 112
MGK-264	89.6		P	26 - 122
Mirex	65.6		P	10 - 169
Oxychlordane	79.0		P	43 - 105
PCB-1016	73.4		P	48 - 112
PCB-1260	75.5		P	44 - 118
Permethrin	72.7		P	24 - 148
Phenothrin	61.2		P	10 - 106
Piperonyl Butoxide	96.4		P	10 - 139
Prallethrin	66.6		P	17 - 109
Tau-Fluvalinate	66.8		P	13 - 131
Tetramethrin	75.7		P	10 - 132
Trans-Nonachlor	67.7		P	44 - 106
Triclosan Methyl	76.2		P	59 - 109
Trifluralin	72.2		P	44 - 101

Reference Method: EPA 8276

Batch ID: P430111

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	83.8		P	61 - 116
Toxaphene	101		P	48 - 124

Reference Method: EPA 8321B

Batch ID: P429806

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	101		P	40 - 150
AMPA	109		P	40 - 150
Endothall	82.9		P	40 - 150
Glufosinate	105		P	40 - 150
Glyphosate	121		P	40 - 150
Sucralose	91.5		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P429889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	84.3		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P429889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4,5-T	89.3		P	40 - 150
Acetaminophen	82.7		P	30 - 150
Acetamiprid	70.0		P	40 - 150
Afidopyropen	62.5		P	30 - 150
Bentazon	120		P	30 - 150
Benzovindiflupyr	76.4		P	40 - 150
Carbamazepine	76.1		P	40 - 150
Clothianidin	80.8		P	40 - 150
Dinotefuran	88.8		P	40 - 150
Diuron	75.8		P	40 - 150
Fenuron	81.6		P	40 - 150
Fluridone	77.1		P	40 - 150
Hydrocodone	86.6		P	40 - 150
Ibuprofen	75.7		P	40 - 150
Imazapyr	83.8		P	40 - 150
Imidacloprid	80.5		P	40 - 150
Linuron	75.8		P	40 - 150
Mandestrobin	75.4		P	40 - 150
MCPP	96.5		P	40 - 150
Naproxen	74.1		P	40 - 150
Primidone	83.1		P	40 - 150
Pyraclostrobin	76.6		P	40 - 150
Silvex	100		P	40 - 150
Thiamethoxam	82.9		P	40 - 150
Tolfenpyrad	53.6		P	30 - 150
Triclopyr	82.2		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P430154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P430415

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	99.4		P	90 - 110

Reference Method: SM 2540 D-2015

Batch ID: P430220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.4		P	85 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P430159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	94 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P429963

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

Reference Method: SM 5310 B-2011
Batch ID: P430031

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P429881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408424	Calcium	102		P	80 - 120
2408424	Iron	106	107	P/P	80 - 120
2408424	Magnesium	104		P	80 - 120
2408424	Potassium	104	107	P/P	80 - 120
2408424	Sodium	99.7		P	80 - 120
2408424	Strontium	102	102	P/P	80 - 120
2408424	Tin	104	104	P/P	80 - 120
2408424	Titanium	104	104	P/P	80 - 120
2408424	Vanadium	104	103	P/P	80 - 120
2408424	Zinc	104	103	P/P	80 - 120
2409299	Calcium	101		P	80 - 120
2409299	Iron	106		P	80 - 120
2409299	Magnesium	102		P	80 - 120
2409299	Potassium	101		P	80 - 120
2409299	Sodium	97.8		P	80 - 120
2409299	Strontium	103		P	80 - 120
2409299	Tin	104		P	80 - 120
2409299	Titanium	105		P	80 - 120
2409299	Vanadium	105		P	80 - 120
2409299	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P429881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2408423	Manganese	96.2	94.9	P/P	80 - 120
2408424	Aluminum	98.6	98.2	P/P	80 - 120
2408424	Antimony	102	101	P/P	80 - 120
2408424	Arsenic	100	100	P/P	80 - 120
2408424	Barium	101	101	P/P	80 - 120
2408424	Beryllium	94.1	93.0	P/P	80 - 120
2408424	Boron	102	102	P/P	80 - 120
2408424	Cadmium	102	100	P/P	80 - 120
2408424	Chromium	95.5	95.1	P/P	80 - 120
2408424	Cobalt	99.5	98.6	P/P	80 - 120
2408424	Copper	96.3	96.2	P/P	80 - 120
2408424	Lead	103	102	P/P	80 - 120
2408424	Molybdenum	100	100	P/P	80 - 120
2408424	Nickel	95.7	95.2	P/P	80 - 120
2408424	Selenium	99.1	99.4	P/P	80 - 120
2408424	Silver	104	102	P/P	80 - 120
2408424	Thallium	101	102	P/P	80 - 120
2409299	Aluminum	96.8		P	80 - 120
2409299	Antimony	101		P	80 - 120
2409299	Arsenic	97.9		P	80 - 120
2409299	Barium	100		P	80 - 120
2409299	Beryllium	92.8		P	80 - 120
2409299	Boron	102		P	80 - 120
2409299	Cadmium	100		P	80 - 120
2409299	Chromium	94.4		P	80 - 120
2409299	Cobalt	98.2		P	80 - 120
2409299	Copper	94.4		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429881

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409299	Lead	103		P	80 - 120
2409299	Manganese	93.7		P	80 - 120
2409299	Molybdenum	98.8		P	80 - 120
2409299	Nickel	94.7		P	80 - 120
2409299	Selenium	97.4		P	80 - 120
2409299	Silver	103		P	80 - 120
2409299	Thallium	100		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Chloride	99.5		P	90 - 110
2409324	Chloride	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409274	Sulfate	93.6		P	90 - 110
2409324	Sulfate	104		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409311	Ammonia-N	96.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409581	Kjeldahl Nitrogen	94.7	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409287	NO2NO3-N	96.8	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409581	Total-P	108	106	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P430111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409351	PCB-1016	63.6	61.1	P/P	46 - 111
2409351	PCB-1260	63.9	64.4	P/P	45 - 114

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P430111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409541	Aldrin	49.9	52.0	P/P	20 - 82.0
2409541	Alpha-BHC	86.3	81.6	P/P	71 - 109
2409541	Alpha-Chlordane	58.8	62.0	P/P	42 - 106
2409541	Beta-BHC	99.4	102	P/P	69 - 180
2409541	Beta-Cyfluthrin	85.3	88.8	P/P	18 - 175
2409541	Bifenthrin	71.7	69.0	P/P	21 - 128
2409541	Chlorothalonil	91.1	99.8	P/P	10 - 300
2409541	Cis-Nonachlor	52.7	58.2	P/P	34 - 106
2409541	Cypermethrin	82.7	85.8	P/P	22 - 158
2409541	Dacthal	93.2	96.1	P/P	54 - 116
2409541	DDD-p,p'	53.9	59.9	P/P	34 - 107
2409541	DDE-p,p'	60.4	61.3	P/P	33 - 110
2409541	DDT-p,p'	67.9	66.2	P/P	50 - 122
2409541	Delta-BHC	94.1	104	P/P	77 - 193
2409541	Deltamethrin	92.9	97.3	P/P	10 - 195
2409541	Dichlobenil	56.9	57.8	P/P	25 - 113
2409541	Dicofol	69.8	68.8	P/P	38 - 247
2409541	Dieldrin	66.4	67.6	P/P	45 - 118
2409541	Endosulfan I	60.1	61.3	P/P	51 - 106
2409541	Endosulfan II	71.1	72.2	P/P	37 - 122
2409541	Endosulfan Sulfate	65.4	71.9	P/P	43 - 132
2409541	Endrin	59.5	67.3	P/P	29 - 101
2409541	Endrin Aldehyde	58.3	59.2	P/P	19 - 110
2409541	Endrin Ketone	71.5	101	P/P	60 - 140
2409541	Esfenvalerate	80.4	84.0	P/P	26 - 199
2409541	Ethalfuralin	60.9	65.4	P/P	45 - 99.0
2409541	Fenpropathrin	75.5	77.3	P/P	35 - 120
2409541	Gamma-BHC	96.2	103	P/P	63 - 128
2409541	Gamma-Chlordane	64.2	62.6	P/P	40 - 104
2409541	Heptachlor	56.9	61.0	P/P	36 - 97.0
2409541	Heptachlor Epoxide	87.9	86.0	P/P	49 - 184
2409541	Hexachlorobenzene	59.8	55.5	P/P	39 - 96.0
2409541	Kepone	82.8	93.4	P/P	10 - 217
2409541	Lambda-Cyhalothrin	83.0	80.2	P/P	21 - 193
2409541	Methoprene	61.7	62.9	P/P	20 - 106
2409541	Methoxychlor	80.4	78.8	P/P	53 - 118
2409541	MGK-264	98.3	105	P/P	40 - 118
2409541	Mirex	49.2	52.0	P/P	26 - 92.0
2409541	Oxychlordane	74.1	76.6	P/P	44 - 99.0
2409541	Permethrin	85.9	85.5	P/P	33 - 182
2409541	Phenothrin	72.4	71.6	P/P	10 - 129
2409541	Piperonyl Butoxide	92.8	94.6	P/P	10 - 211
2409541	Prallethrin	61.0	63.6	P/P	24 - 113
2409541	Tau-Fluvalinate	79.2	83.9	P/P	14 - 149
2409541	Tetramethrin	89.3	84.7	P/P	17 - 151
2409541	Trans-Nonachlor	57.5	59.8	P/P	42 - 102
2409541	Triclosan Methyl	64.0	63.8	P/P	48 - 108
2409541	Trifluralin	67.6	67.8	P/P	47 - 96.0

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P430111

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409351	Chlordane	55.5	55.1	P/P	53 - 126
2409351	Toxaphene	65.2	59.9	P/P	56 - 211

Reference Method: EPA 8321B
Batch ID: P429806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409296	Acesulfame K	64.2	64.5	P/P	40 - 150
2409296	AMPA	70.0	69.5	P/P	40 - 150
2409296	Endothall	91.0	91.8	P/P	40 - 150
2409296	Glufosinate	72.5	80.5	P/P	40 - 150
2409296	Glyphosate	73.9	74.8	P/P	40 - 150
2409296	Sucralose	101	114	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P429889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409223	2,4-D	89.6	105	P/P	40 - 150
2409223	2,4,5-T	108	106	P/P	40 - 150
2409223	Acetaminophen	92.6	101	P/P	30 - 150
2409223	Acetamiprid	65.4	65.7	P/P	40 - 150
2409223	Afidopyropen	80.0	79.9	P/P	30 - 150
2409223	Benzovindiflupyr	73.1	84.9	P/P	40 - 150
2409223	Carbamazepine	68.2	75.8	P/P	40 - 150
2409223	Clothianidin	89.1	99.6	P/P	40 - 150
2409223	Dinotefuran	62.8	68.7	P/P	40 - 150
2409223	Diuron	63.0	77.6	P/P	40 - 150
2409223	Fenuron	52.6	61.5	P/P	40 - 150
2409223	Hydrocodone	52.1	59.1	P/P	40 - 150
2409223	Ibuprofen	62.2	54.0	P/P	40 - 150
2409223	Imidacloprid	109	119	P/P	40 - 150
2409223	Linuron	65.4	69.8	P/P	40 - 150
2409223	Mandestrobin	72.6	83.7	P/P	40 - 150
2409223	MCPP	103	120	P/P	40 - 150
2409223	Naproxen	64.6	84.8	P/P	40 - 150
2409223	Primidone	83.4	90.5	P/P	40 - 150
2409223	Pyraclostrobin	77.6	80.8	P/P	40 - 150
2409223	Silvex	109	115	P/P	40 - 150
2409223	Thiamethoxam	75.5	88.2	P/P	40 - 150
2409223	Tolfenpyrad	49.5	55.9	P/P	30 - 150
2409223	Triclopyr	114	98.9	P/P	40 - 150

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409306	Fluoride	104	103	P/P	94 - 106

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P429963

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409277	Organic Carbon	96.0	96.8	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P430031

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2409329	Organic Carbon	92.3	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P429837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409308	Color (true)	1.99	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P429841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409317	Turbidity	51.8	Sample	F	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P429881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408424	Calcium	1.54	Spike	P	0 - 20
2408424	Iron	1.27	Spike	P	0 - 20
2408424	Magnesium	0.871	Spike	P	0 - 20
2408424	Potassium	1.67	Spike	P	0 - 20
2408424	Sodium	0.0913	Spike	P	0 - 20
2408424	Strontium	0.293	Spike	P	0 - 20
2408424	Tin	0.813	Spike	P	0 - 20
2408424	Titanium	0.0566	Spike	P	0 - 20
2408424	Vanadium	1.08	Spike	P	0 - 20
2408424	Zinc	0.862	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P429881

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2408423	Manganese	1.21	Spike	P	0 - 20
2408424	Aluminum	0.393	Spike	P	0 - 20
2408424	Antimony	0.504	Spike	P	0 - 20
2408424	Arsenic	0.0488	Spike	P	0 - 20
2408424	Barium	0.291	Spike	P	0 - 20
2408424	Beryllium	1.25	Spike	P	0 - 20
2408424	Boron	0.115	Spike	P	0 - 20
2408424	Cadmium	1.78	Spike	P	0 - 20
2408424	Chromium	0.437	Spike	P	0 - 20
2408424	Cobalt	0.814	Spike	P	0 - 20
2408424	Copper	0.120	Spike	P	0 - 20
2408424	Lead	1.59	Spike	P	0 - 20
2408424	Molybdenum	0.293	Spike	P	0 - 20
2408424	Nickel	0.568	Spike	P	0 - 20
2408424	Selenium	0.310	Spike	P	0 - 20
2408424	Silver	1.34	Spike	P	0 - 20
2408424	Thallium	0.868	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430019

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Chloride	0.0348	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P430023

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409274	Sulfate	0.498	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P429972

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409311	Ammonia-N	0.549	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P430040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409581	Kjeldahl Nitrogen	6.76	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P430280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409287	NO2NO3-N	0.372	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P429967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409581	Total-P	1.83	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P430111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409351	PCB-1016	4.08	Spike	P	0 - 32
2409351	PCB-1260	0.785	Spike	P	0 - 31
2409541	Aldrin	4.13	Spike	P	0 - 41
2409541	Alpha-BHC	5.60	Spike	P	0 - 25
2409541	Alpha-Chlordane	5.25	Spike	P	0 - 33
2409541	Beta-BHC	2.67	Spike	P	0 - 36
2409541	Beta-Cyfluthrin	4.08	Spike	P	0 - 42
2409541	Bifenthrin	3.87	Spike	P	0 - 53
2409541	Chlorothalonil	9.16	Spike	P	0 - 71

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P430111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409541	Cis-Nonachlor	9.87	Spike	P	0 - 29
2409541	Cypermethrin	3.65	Spike	P	0 - 40
2409541	Dacthal	3.08	Spike	P	0 - 26
2409541	DDD-p,p'	10.6	Spike	P	0 - 39
2409541	DDE-p,p'	1.43	Spike	P	0 - 33
2409541	DDT-p,p'	2.58	Spike	P	0 - 40
2409541	Delta-BHC	9.87	Spike	P	0 - 37
2409541	Deltamethrin	4.66	Spike	P	0 - 100
2409541	Dichlobenil	1.68	Spike	P	0 - 40
2409541	Dicofol	1.51	Spike	P	0 - 31
2409541	Dieldrin	1.81	Spike	P	0 - 27
2409541	Endosulfan I	1.99	Spike	P	0 - 23
2409541	Endosulfan II	1.52	Spike	P	0 - 28
2409541	Endosulfan Sulfate	9.41	Spike	P	0 - 38
2409541	Endrin	12.4	Spike	P	0 - 63
2409541	Endrin Aldehyde	1.51	Spike	P	0 - 60
2409541	Endrin Ketone	34.0	Spike	P	0 - 37
2409541	Esfenvalerate	4.33	Spike	P	0 - 52
2409541	Ethalfuralin	7.08	Spike	P	0 - 23
2409541	Fenpropathrin	2.45	Spike	P	0 - 32
2409541	Gamma-BHC	6.71	Spike	P	0 - 17
2409541	Gamma-Chlordane	2.56	Spike	P	0 - 40
2409541	Heptachlor	6.82	Spike	P	0 - 29
2409541	Heptachlor Epoxide	2.19	Spike	P	0 - 25
2409541	Hexachlorobenzene	7.43	Spike	P	0 - 36
2409541	Kepone	12.0	Spike	P	0 - 93
2409541	Lambda-Cyhalothrin	3.39	Spike	P	0 - 55
2409541	Methoprene	1.99	Spike	P	0 - 53
2409541	Methoxychlor	2.03	Spike	P	0 - 29
2409541	MGK-264	6.94	Spike	P	0 - 35
2409541	Mirex	5.49	Spike	P	0 - 46
2409541	Oxychlordane	3.35	Spike	P	0 - 29
2409541	Permethrin	0.531	Spike	P	0 - 44
2409541	Phenothrin	1.19	Spike	P	0 - 56
2409541	Piperonyl Butoxide	1.02	Spike	P	0 - 100
2409541	Prallethrin	4.28	Spike	P	0 - 42
2409541	Tau-Fluvalinate	5.75	Spike	P	0 - 54
2409541	Tetramethrin	5.33	Spike	P	0 - 51
2409541	Trans-Nonachlor	3.91	Spike	P	0 - 37
2409541	Triclosan Methyl	0.462	Spike	P	0 - 31
2409541	Trifluralin	0.352	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P430111

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409351	Chlordane	0.749	Spike	P	0 - 25
2409351	Toxaphene	8.61	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P429806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409296	Acesulfame K	0.377	Spike	P	0 - 30
2409296	AMPA	0.649	Spike	P	0 - 30
2409296	Endothall	0.892	Spike	P	0 - 30
2409296	Glufosinate	10.4	Spike	P	0 - 30
2409296	Glyphosate	0.971	Spike	P	0 - 30
2409296	Sucralose	12.0	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P429889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409223	2,4-D	10.8	Spike	P	0 - 30
2409223	2,4,5-T	1.89	Spike	P	0 - 30
2409223	Acetaminophen	9.13	Spike	P	0 - 30
2409223	Acetamiprid	0.421	Spike	P	0 - 30
2409223	Afidopyropen	0.122	Spike	P	0 - 30
2409223	Bentazon	7.23	Spike	P	0 - 30
2409223	Benzovindiflupyr	14.9	Spike	P	0 - 30
2409223	Carbamazepine	9.16	Spike	P	0 - 30
2409223	Clothianidin	11.2	Spike	P	0 - 30
2409223	Dinotefuran	8.29	Spike	P	0 - 30
2409223	Diuron	19.3	Spike	P	0 - 30
2409223	Fenuron	15.6	Spike	P	0 - 30
2409223	Fluridone	4.86	Spike	P	0 - 30
2409223	Hydrocodone	12.7	Spike	P	0 - 30
2409223	Ibuprofen	14.3	Spike	P	0 - 30
2409223	Imazapyr	10.6	Spike	P	0 - 30
2409223	Imidacloprid	7.49	Spike	P	0 - 30
2409223	Linuron	6.55	Spike	P	0 - 30
2409223	Mandestrobin	14.2	Spike	P	0 - 30
2409223	MCPP	14.4	Spike	P	0 - 30
2409223	Naproxen	27.1	Spike	P	0 - 30
2409223	Primidone	8.15	Spike	P	0 - 30
2409223	Pyraclostrobin	4.03	Spike	P	0 - 30
2409223	Silvex	5.04	Spike	P	0 - 30
2409223	Thiamethoxam	15.5	Spike	P	0 - 30
2409223	Tolfenpyrad	12.3	Spike	P	0 - 30
2409223	Triclopyr	14.0	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P430154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Total Alkalinity	1.10	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P430415

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409207	TDS	3.25	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P430159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409306	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P429963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409277	Organic Carbon	0.610	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P430031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2409329	Organic Carbon	1.49	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Surrogates

Lab Sample ID: 2409351
Field Sample ID: G4SE0152

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	81.8	P	29 - 130
EPA 8270E	Decachlorobiphenyl	50.2	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	50.3	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	53.5	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	50.0	P	30 - 101
EPA 8276	PCNB	73.6	P	48 - 121

Lab Sample ID: 2409359
Field Sample ID: G4SE0149

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	97.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	96.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	61.1	P	30 - 160
EPA 8321B	Diuron-d6	61.3	P	30 - 160
EPA 8321B	Endothall-d6	92.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	91.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	51.2	P	30 - 160
EPA 8321B	Primidone-d5	78.5	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160

Lab Sample ID: 2409360
Field Sample ID: G4SE0155

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	118	P	30 - 160
EPA 8321B	Acetaminophen-d4	104	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.6	P	30 - 160
EPA 8321B	Diuron-d6	68.1	P	30 - 160
EPA 8321B	Endothall-d6	87.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	71.6	P	30 - 160
EPA 8321B	Primidone-d5	85.2	P	30 - 160
EPA 8321B	Sucralose-d6	94.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A119145

Included Lab Sample IDs: 2409324, 2409325, 2409328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	103	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119146

Included Lab Sample IDs: 2409324, 2409325, 2409328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A119190

Included Lab Sample IDs: 2409359, 2409360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	114	116	P/P	60 - 160
Endothall	83.6	83.7	P/P	60 - 160
Glufosinate	102	98.6	P/P	60 - 160
Glyphosate	115	117	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A119191

Included Lab Sample IDs: 2409359, 2409360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	96.4	94.7	P/P	60 - 160
Sucralose	116	92.9	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119202

Included Lab Sample IDs: 2409361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.8	97.6	P/P	90 - 110
Antimony	101	101	P/P	90 - 110
Arsenic	97.9	98.5	P/P	90 - 110
Barium	100	99.5	P/P	90 - 110
Beryllium	96.7	96.8	P/P	90 - 110
Boron	102	99.3	P/P	90 - 110
Cadmium	100	100	P/P	90 - 110
Chromium	97.5	96.8	P/P	90 - 110
Cobalt	99.8	99.8	P/P	90 - 110
Copper	96.0	95.7	P/P	90 - 110
Lead	104	102	P/P	90 - 110
Molybdenum	97.6	98.6	P/P	90 - 110
Nickel	96.7	96.5	P/P	90 - 110
Selenium	99.5	100	P/P	90 - 110
Silver	102	103	P/P	90 - 110
Thallium	104	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A119211

Included Lab Sample IDs: 2409324, 2409325, 2409328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	101	100	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119213

Included Lab Sample IDs: 2409326, 2409327

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	96.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A119214

Included Lab Sample IDs: 2409326, 2409327, 2409329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.0	97.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A119236

Included Lab Sample IDs: 2409361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	98.0	102	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119244

Included Lab Sample IDs: 2409329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119250

Included Lab Sample IDs: 2409327

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A119257

Included Lab Sample IDs: 2409326, 2409329

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A119275

Included Lab Sample IDs: 2409326, 2409327, 2409329

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.6	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A119279

Included Lab Sample IDs: 2409359, 2409360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	96.4	98.9	P/P	50 - 150
2,4,5-T	87.0	97.4	P/P	50 - 150
Acetaminophen	98.8	99.1	P/P	60 - 160
Acetamiprid	105	107	P/P	50 - 150
Afidopyropen	98.0	108	P/P	50 - 150
Bentazon	128	142	P/P	50 - 160
Benzovindiflupyr	98.3	102	P/P	50 - 150
Carbamazepine	99.1	108	P/P	60 - 150
Clothianidin	106	104	P/P	60 - 150
Dinotefuran	110	106	P/P	50 - 150
Diuron	117	117	P/P	60 - 160
Fenuron	102	102	P/P	60 - 150
Fluridone	113	128	P/P	60 - 160
Hydrocodone	111	114	P/P	60 - 150
Ibuprofen	62.4	99.8	P/P	50 - 160
Imazapyr	100	102	P/P	50 - 150
Imidacloprid	97.6	98.3	P/P	60 - 150
Linuron	99.5	103	P/P	60 - 150
Mandestrobin	99.0	99.8	P/P	50 - 150
MCPP	91.7	97.5	P/P	50 - 150
Naproxen	62.9	83.6	P/P	50 - 160
Primidone	102	97.4	P/P	60 - 150
Pyraclostrobin	107	105	P/P	60 - 150
Silvex	87.5	103	P/P	50 - 150
Thiamethoxam	106	107	P/P	50 - 150
Tolfenpyrad	98.8	97.8	P/P	60 - 150
Triclopyr	86.1	82.7	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A119302

Included Lab Sample IDs: 2409324, 2409325, 2409328

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.3	95.6	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A119302

Included Lab Sample IDs: 2409324, 2409325, 2409328

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A119310
Included Lab Sample IDs: 2409351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	101		P	80 - 120
Toxaphene	102		P	80 - 120

Reference Method: EPA 8270E
Run ID: A119356
Included Lab Sample IDs: 2409351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	101		P	80 - 120
PCB-1260	92.9		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A119360
Included Lab Sample IDs: 2409326, 2409327, 2409329

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

Reference Method: EPA 8270E
Run ID: A119369
Included Lab Sample IDs: 2409351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	96.3		P	80 - 120
Alpha-BHC	99.4		P	80 - 120
Alpha-Chlordane	97.5		P	80 - 120
Beta-BHC	102		P	80 - 120
Beta-Cyfluthrin	99.4		P	80 - 120
Bifenthrin	103		P	80 - 120
Chlorothalonil	96.4		P	80 - 120
Cis-Nonachlor	95.4		P	80 - 120
Cypermethrin	97.7		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	98.4		P	80 - 120
DDE-p,p'	98.6		P	80 - 120
DDT-p,p'	99.4		P	80 - 120
Delta-BHC	98.2		P	80 - 120
Deltamethrin	94.6		P	80 - 120
Dichlobenil	102		P	80 - 120
Dicofol	101		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	93.2		P	80 - 120
Endosulfan II	91.2		P	80 - 120
Endosulfan Sulfate	89.1		P	80 - 120
Endrin	98.4		P	80 - 120
Endrin Aldehyde	97.0		P	80 - 120
Endrin Ketone	90.8		P	80 - 120
Esfenvalerate	95.2		P	80 - 120
Ethalfuralin	97.3		P	80 - 120
Fenpropathrin	99.4		P	80 - 120
Gamma-BHC	97.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A119369
Included Lab Sample IDs: 2409351

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Gamma-Chlordane	101		P	80 - 120
Heptachlor	96.8		P	80 - 120
Heptachlor Epoxide	100		P	80 - 120
Hexachlorobenzene	99.4		P	80 - 120
Kepone	86.1		P	80 - 120
Lambda-Cyhalothrin	101		P	80 - 120
Methoprene	96.7		P	80 - 120
Methoxychlor	103		P	80 - 120
MGK-264	99.1		P	80 - 120
Mirex	97.8		P	80 - 120
Oxychlordane	98.0		P	80 - 120
Permethrin	102		P	80 - 120
Phenothrin	99.4		P	80 - 120
Piperonyl Butoxide	93.6		P	80 - 120
Prallethrin	97.1		P	80 - 120
Tau-Fluvalinate	99.2		P	80 - 120
Tetramethrin	103		P	80 - 120
Trans-Nonachlor	99.1		P	80 - 120
Triclosan Methyl	98.3		P	80 - 120
Trifluralin	101		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A119423
Included Lab Sample IDs: 2409361

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	105	106	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	102	104	P/P	90 - 110
Sodium	97.6	98.1	P/P	90 - 110
Strontium	101	102	P/P	90 - 110
Tin	105	103	P/P	90 - 110
Titanium	103	104	P/P	90 - 110
Vanadium	102	103	P/P	90 - 110
Zinc	103	101	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	101					1.99	
EPA 180.1 Rev. 2.0	Turbidity	97.9					51.8	
EPA 200.7 Rev. 4.4	Calcium	101	102	101				1.54
	Iron	106	106	107	106			1.27
	Magnesium	102	104	102				0.871
	Potassium	103	104	107	101			1.67
	Sodium	98.1	97.8	99.7				0.0913
	Strontium	100	102	102	103			0.293
	Tin	105	104	104	104			0.813
	Titanium	102	104	104	105			0.0566
	Vanadium	101	104	103	105			1.08
	Zinc	101	104	103	105			0.862
EPA 200.8 Rev. 5.4	Aluminum	96.8	98.6	98.2	96.8			0.393
	Antimony	100	102	101	101			0.504
	Arsenic	98.6	100	100	97.9			0.0488
	Barium	102	101	101	100			0.291
	Beryllium	94.6	94.1	93.0	92.8			1.25
	Boron	101	102	102	102			0.115
	Cadmium	99.3	102	100	100			1.78
	Chromium	93.3	95.5	95.1	94.4			0.437
	Cobalt	99.4	99.5	98.6	98.2			0.814
	Copper	96.4	96.3	96.2	94.4			0.120
	Lead	101	103	102	103			1.59
	Manganese	96.4	96.2	94.9	93.7			1.21
	Molybdenum	97.5	100	100	98.8			0.293
	Nickel	95.9	95.7	95.2	94.7			0.568
	Selenium	98.7	99.1	99.4	97.4			0.310
	Silver	102	104	102	103			1.34
	Thallium	97.2	101	102	100			0.868
EPA 300.0 Rev. 2.1	Chloride	104	99.5	107			0.0348	
	Sulfate	103	93.6	104			0.498	
EPA 350.1 Rev. 2.0	Ammonia-N	95.0	96.6	97.2				0.549
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	94.7	103				6.76
EPA 353.2 Rev. 2.0	NO2NO3-N	102	96.8	96.3				0.372
EPA 365.1 Rev. 2.0	Total-P	105	108	106				1.83
EPA 8270E	Aldrin	61.8	49.9	52.0				4.13
	Alpha-BHC	86.5	86.3	81.6				5.60
	Alpha-Chlordane	69.2	58.8	62.0				5.25
	Beta-BHC	94.0	99.4	102				2.67
	Beta-Cyfluthrin	80.2	85.3	88.8				4.08
	Bifenthrin	59.4	71.7	69.0				3.87
	Chlorothalonil	72.8	91.1	99.8				9.16
	Cis-Nonachlor	67.3	52.7	58.2				9.87
	Cypermethrin	82.1	82.7	85.8				3.65
	Dacthal	89.9	93.2	96.1				3.08
	DDD-p,p'	72.0	53.9	59.9				10.6
	DDE-p,p'	75.6	60.4	61.3				1.43
	DDT-p,p'	73.3	67.9	66.2				2.58
	Delta-BHC	84.4	94.1	104				9.87
	Deltamethrin	88.4	92.9	97.3				4.66
	Dichlobenil	89.2	56.9	57.8				1.68
	Dicofol	70.5	69.8	68.8				1.51
	Dieldrin	76.3	66.4	67.6				1.81
	Endosulfan I	69.3	60.1	61.3				1.99

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8270E	Endosulfan II	83.1	71.1	72.2		1.52
	Endosulfan Sulfate	88.9	65.4	71.9		9.41
	Endrin	71.8	59.5	67.3		12.4
	Endrin Aldehyde	70.0	58.3	59.2		1.51
	Endrin Ketone	119	71.5	101		34.0
	Esfenvalerate	74.0	80.4	84.0		4.33
	Ethalfuralin	65.8	60.9	65.4		7.08
	Fenpropathrin	69.1	75.5	77.3		2.45
	Gamma-BHC	86.5	96.2	103		6.71
	Gamma-Chlordane	70.0	64.2	62.6		2.56
	Heptachlor	69.8	56.9	61.0		6.82
	Heptachlor Epoxide	85.0	87.9	86.0		2.19
	Hexachlorobenzene	67.5	59.8	55.5		7.43
	Kepone	101	82.8	93.4		12.0
	Lambda-Cyhalothrin	65.8	83.0	80.2		3.39
	Methoprene	63.3	61.7	62.9		1.99
	Methoxychlor	82.7	80.4	78.8		2.03
	MGK-264	89.6	98.3	105		6.94
	Mirex	65.6	49.2	52.0		5.49
	Oxychlordane	79.0	74.1	76.6		3.35
	PCB-1016	73.4	63.6	61.1		4.08
	PCB-1260	75.5	63.9	64.4		0.785
	Permethrin	72.7	85.9	85.5		0.531
	Phenothrin	61.2	72.4	71.6		1.19
	Piperonyl Butoxide	96.4	92.8	94.6		1.02
	Prallethrin	66.6	61.0	63.6		4.28
	Tau-Fluvalinate	66.8	79.2	83.9		5.75
	Tetramethrin	75.7	89.3	84.7		5.33
	Trans-Nonachlor	67.7	57.5	59.8		3.91
	Triclosan Methyl	76.2	64.0	63.8		0.462
	Trifluralin	72.2	67.6	67.8		0.352
EPA 8276	Chlordane	83.8	55.5	55.1		0.749
	Toxaphene	101	65.2	59.9		8.61
EPA 8321B	2,4-D	84.3	89.6	105		10.8
	2,4,5-T	89.3	108	106		1.89
	Acesulfame K	101	64.2	64.5		0.377
	Acetaminophen	82.7	92.6	101		9.13
	Acetamiprid	70.0	65.4	65.7		0.421
	Afidopyropen	62.5	80.0	79.9		0.122
	AMPA	109	70.0	69.5		0.649
	Bentazon	120				7.23
	Benzovindiflupyr	76.4	73.1	84.9		14.9
	Carbamazepine	76.1	68.2	75.8		9.16
	Clothianidin	80.8	89.1	99.6		11.2
	Dinotefuran	88.8	62.8	68.7		8.29
	Diuron	75.8	63.0	77.6		19.3
	Endothall	82.9	91.0	91.8		0.892
	Fenuron	81.6	52.6	61.5		15.6
	Fluridone	77.1				4.86
	Glufosinate	105	72.5	80.5		10.4
	Glyphosate	121	73.9	74.8		0.971
	Hydrocodone	86.6	52.1	59.1		12.7
	Ibuprofen	75.7	62.2	54.0		14.3
	Imazapyr	83.8				10.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imidacloprid	80.5	109	119		7.49
	Linuron	75.8	65.4	69.8		6.55
	Mandestrobin	75.4	72.6	83.7		14.2
	MCP	96.5	103	120		14.4
	Naproxen	74.1	64.6	84.8		27.1
	Primidone	83.1	83.4	90.5		8.15
	Pyraclostrobin	76.6	77.6	80.8		4.03
	Silvex	100	109	115		5.04
	Sucralose	91.5	101	114		12.0
	Thiamethoxam	82.9	75.5	88.2		15.5
	Tolfenpyrad	53.6	49.5	55.9		12.3
	Triclopyr	82.2	114	98.9		14.0
SM 2320 B-2011	Total Alkalinity	98.8			1.10	
SM 2540 C-2015	TDS	99.4			3.25	
SM 2540 D-2015	TSS	96.4				
SM 4500-F- C-2011	Fluoride	103	104	103		0.480
SM 5310 B-2011	Organic Carbon	98.4	96.0	96.8		0.610
	Organic Carbon	98.2	92.3	95.0		1.49

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2409324, 2409325, 2409328
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2409324, 2409325, 2409328
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2409361
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2409361
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2409324, 2409325, 2409328
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2409324, 2409325, 2409328
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2409326, 2409327, 2409329
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2409326, 2409327, 2409329
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2409326, 2409327, 2409329
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2409326, 2409327, 2409329
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2409351
EPA 8270E	PCBs in water matrices by GC/MS/MS	2409351
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2409351
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2409359, 2409360
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2409324, 2409325, 2409328
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2409361
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2409324, 2409325, 2409328
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2409324, 2409325, 2409328
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2409324, 2409325, 2409328
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2409326, 2409327, 2409329

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	05/12/2023			05/12/2023 14:26	Anna M. Plaviak	2409324, 2409325
	05/12/2023			05/12/2023 14:27	Anna M. Plaviak	2409328
EPA 180.1 Rev. 2.0	05/12/2023			05/12/2023 13:03	Chandler E Cox	2409324
	05/12/2023			05/12/2023 13:04	Chandler E Cox	2409325, 2409328
EPA 200.7 Rev. 4.4	05/12/2023	05/15/2023 13:50	George D Taylor	05/26/2023 01:33	McKinley C Carter	2409361
EPA 200.8 Rev. 5.4	05/12/2023	05/15/2023 13:50	George D Taylor	05/17/2023 01:09	Conrad Hartmann	2409361
EPA 300.0 Rev. 2.1	05/12/2023	05/15/2023 13:50	George D Taylor	05/17/2023 16:10	Conrad Hartmann	2409361
	05/12/2023			05/18/2023 03:31	James L Waggeberby	2409324
	05/12/2023			05/18/2023 07:02	James L Waggeberby	2409325
EPA 350.1 Rev. 2.0	05/12/2023			05/18/2023 07:17	James L Waggeberby	2409328
	05/12/2023			05/17/2023 11:34	Ping Hua	2409326
	05/12/2023			05/17/2023 11:35	Ping Hua	2409327
EPA 351.2 Rev. 2.0	05/12/2023			05/17/2023 11:37	Ping Hua	2409329
	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 11:38	Samantha L Bates	2409326
	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 11:39	Samantha L Bates	2409327
EPA 353.2 Rev. 2.0	05/12/2023	05/18/2023 11:54	Simonne.V. Calhoun	05/19/2023 11:40	Samantha L Bates	2409329
	05/12/2023			05/19/2023 10:53	Anna M. Plaviak	2409326
	05/12/2023			05/19/2023 10:54	Anna M. Plaviak	2409327
EPA 365.1 Rev. 2.0	05/12/2023			05/19/2023 10:55	Anna M. Plaviak	2409329
	05/12/2023	05/17/2023 12:30	Alexis Price	05/18/2023 12:06	Chandler E Cox	2409327
	05/12/2023	05/17/2023 12:30	Alexis Price	05/18/2023 15:04	Chandler E Cox	2409326
EPA 8270E	05/12/2023	05/17/2023 12:30	Alexis Price	05/18/2023 15:05	Chandler E Cox	2409329
	05/12/2023	05/16/2023 08:30	Rasheda Ghaffari	05/22/2023 18:15	Vandana T. Nagar	2409351
EPA 8276	05/12/2023	05/16/2023 08:30	Rasheda Ghaffari	05/23/2023 04:04	Michael Poppell	2409351
	05/12/2023	05/16/2023 08:30	Rasheda Ghaffari	05/21/2023 03:57	Arthur Maknenko	2409351
EPA 8321B	05/12/2023	05/12/2023 12:00	Manjita Shrestha	05/12/2023 22:47	Manjita Shrestha	2409359
	05/12/2023	05/12/2023 12:00	Manjita Shrestha	05/12/2023 23:00	Manjita Shrestha	2409360
	05/12/2023	05/12/2023 12:00	Manjita Shrestha	05/14/2023 03:06	Manjita Shrestha	2409359
	05/12/2023	05/12/2023 12:00	Manjita Shrestha	05/14/2023 03:20	Manjita Shrestha	2409360
	05/12/2023	05/17/2023 08:30	Hoor Shaik	05/17/2023 19:38	Juyoung Kim	2409359
	05/12/2023	05/17/2023 08:30	Hoor Shaik	05/17/2023 19:57	Juyoung Kim	2409360
	05/12/2023			05/20/2023 01:48	Dale L. Simmons	2409324
SM 2320 B-2011	05/12/2023			05/20/2023 02:01	Dale L. Simmons	2409325
	05/12/2023			05/20/2023 02:11	Dale L. Simmons	2409328
SM 2340 B-2011	05/12/2023			05/26/2023 01:33	McKinley C Carter	2409361
SM 2540 C-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409324, 2409325, 2409328
SM 2540 D-2015	05/12/2023			05/17/2023 16:36	Yijie Li	2409324, 2409325, 2409328
SM 4500-F- C-2011	05/12/2023			05/20/2023 01:48	Dale L. Simmons	2409324
	05/12/2023			05/20/2023 02:01	Dale L. Simmons	2409325
	05/12/2023			05/20/2023 02:11	Dale L. Simmons	2409328

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	05/12/2023			05/17/2023 00:12	Elise M. Gillis	2409326
	05/12/2023			05/17/2023 00:27	Elise M. Gillis	2409327
	05/12/2023			05/17/2023 17:41	Elise M. Gillis	2409329