

Chemical Analysis Report

SW-DIST-2023-01-12-01

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

Event Description: **Sarasota Run**
Request ID: **RQ-2023-01-02-47**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
Attn: Ben Paswater

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Certified by: Colin Wright, Program Administrator

Date Certified: 07-FEB-2023 08:51

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light pink rectangular background.

Case Narrative

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

Results for the following analytical groups are included in this report: 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: Hudson Bayou Tidal by Marie Selby Botanical Gardens **Collection Date/Time: 01/11/2023 12:20**

Field ID: G3SW0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2380316	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P424499	
	SM 2320 B-2011	Total Alkalinity	122	J	mg CaCO3/L	P424906	LCS
	SM 2540 D-2015	TSS	12		mg/L	P424829	
	SM 4500-F- C-2011	Fluoride	1.2	J	mg F/L	P425320	LCS
2380317	EPA 350.1 Rev. 2.0	Ammonia-N	0.037		mg N/L	P425100	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P424679	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P424899	
	EPA 365.1 Rev. 2.0	Total-P	0.065		mg P/L	P424648	
	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P424636	
2380318	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.028		mg P/L	P424484	

Ref. Method and Comment:

SM 2320 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

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

SM 4500-F- C-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Island Park Boat Basin off Dock

Collection Date/Time: 01/11/2023 12:45

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2380313	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P424499	
	SM 2320 B-2011	Total Alkalinity	118	J	mg CaCO3/L	P424906	LCS
	SM 2540 D-2015	TSS	6	IA	mg/L	P424829	
	SM 4500-F- C-2011	Fluoride	1.2	J	mg F/L	P425320	LCS
2380314	EPA 350.1 Rev. 2.0	Ammonia-N	0.039		mg N/L	P425100	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35	I	mg N/L	P424679	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P424899	
	EPA 365.1 Rev. 2.0	Total-P	0.041		mg P/L	P424648	
	SM 5310 B-2011	Organic Carbon	3.8	I	mg C/L	P424636	
2380315	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P424484	
2380359	EPA 200.7 Rev. 4.4	Calcium	393		mg/L	P424584	
		Iron	120	U	ug/L	P424584	
		Magnesium	1.27E+03		mg/L	P424584	
		Strontium	7.70E+03		ug/L	P424584	
		Tin	300	U	ug/L	P424584	
		Titanium	3.0	U	ug/L	P424584	
		Vanadium	8.0	U	ug/L	P424584	
		Zinc	20	U	ug/L	P424584	
	EPA 200.8 Rev. 5.4	Aluminum	94		ug/L	P424584	
		Antimony	0.21	I	ug/L	P424584	
		Arsenic	2.16		ug/L	P424584	
		Beryllium	0.040	U	ug/L	P424584	
		Cadmium	0.080	U	ug/L	P424584	
		Chromium	1.6	U	ug/L	P424584	
		Cobalt	0.20	U	ug/L	P424584	
		Copper	3.2	I	ug/L	P424584	
		Lead	2.0	U	ug/L	P424584	
		Manganese	2.8		ug/L	P424584	
		Molybdenum	12.7		ug/L	P424584	
		Nickel	2.0	U	ug/L	P424584	
		Selenium	0.80	U	ug/L	P424584	
		Silver	0.040	U	ug/L	P424584	
		Thallium	1.0	U	ug/L	P424584	

Ref. Method and Comment:

SM 2320 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

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

SM 4500-F- C-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium and strontium are unavailable because of high analyte concentration in the QC sample. Precision data and spike recoveries for tin are unavailable because sample matrix interference necessitated a high dilution.

Sample Location: Whitaker Bayou @ Ringling College of Art

Collection Date/Time: 01/11/2023 13:15

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2380340	EPA 8270E	Aldrin	0.72	U	ng/L	P424460	
		Alpha-BHC	0.11	U	ng/L	P424460	
		Alpha-Chlordane	0.22	U	ng/L	P424460	MS
		PCB-1016	2.2	U	ng/L	P424460	
		Beta-BHC	0.11	U	ng/L	P424460	
		PCB-1221	2.2	U	ng/L	P424460	
		Beta-Cyfluthrin	1.4	U	ng/L	P424460	
		PCB-1232	2.2	U	ng/L	P424460	
		Bifenthrin	0.55	U	ng/L	P424460	
		PCB-1242	2.2	U	ng/L	P424460	
		Carbophenothion	0.99	U	ng/L	P424460	
		PCB-1248	2.2	U	ng/L	P424460	
		Chlorothalonil	4.0	U	ng/L	P424460	
		PCB-1254	2.2	U	ng/L	P424460	
		Cis-Nonachlor	0.22	U	ng/L	P424460	
		PCB-1260	2.2	U	ng/L	P424460	MS
		Cypermethrin	1.7	U	ng/L	P424460	
		Dacthal	0.17	U	ng/L	P424460	
		DDD-p,p'	0.28	U	ng/L	P424460	
		DDE-p,p'	0.22	U	ng/L	P424460	
		DDT-p,p'	0.28	U	ng/L	P424460	
		Delta-BHC	0.44	U	ng/L	P424460	
		Deltamethrin	1.4	U	ng/L	P424460	
		Dichlobenil	0.28	U	ng/L	P424460	
		Dicofol	1.4	U	ng/L	P424460	
		Dieldrin	0.44	U	ng/L	P424460	
		Endosulfan I	0.44	U	ng/L	P424460	
		Endosulfan II	0.44	U	ng/L	P424460	
		Endosulfan Sulfate	0.33	U	ng/L	P424460	
		Endrin	0.44	U	ng/L	P424460	MS
		Endrin Aldehyde	0.83	U	ng/L	P424460	
		Endrin Ketone	0.44	U	ng/L	P424460	
		Esfenvalerate	0.83	U	ng/L	P424460	
		Ethalfuralin	0.17	U	ng/L	P424460	
		Fenpropathrin	0.28	U	ng/L	P424460	
		Gamma-BHC	0.14	U	ng/L	P424460	
		Gamma-Chlordane	0.40	I	ng/L	P424460	
		Heptachlor	0.22	U	ng/L	P424460	
		Heptachlor Epoxide	0.28	U	ng/L	P424460	
		Hexachlorobenzene**	1.1	U	ng/L	P424460	
		Kepone	5.5	UJ	ng/L	P424460	CCV
		Lambda-Cyhalothrin	0.83	U	ng/L	P424460	
		Methoprene	0.83	U	ng/L	P424460	
		Methoxychlor	0.33	U	ng/L	P424460	

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2380340	EPA 8270E	MGK-264	0.22	U	ng/L	P424460	MS
		Mirex	0.39	U	ng/L	P424460	
		Oxychlordane	0.33	U	ng/L	P424460	
		Permethrin	1.8	U	ng/L	P424460	
		Phenothrin	0.99	U	ng/L	P424460	
		Piperonyl Butoxide	0.17	I	ng/L	P424460	
		Prallethrin	2.2	U	ng/L	P424460	MS
		Tau-Fluvalinate	0.28	U	ng/L	P424460	
		Tetramethrin	0.83	U	ng/L	P424460	
		Trans-Nonachlor	0.22	U	ng/L	P424460	
		Triclosan Methyl	0.17	U	ng/L	P424460	
		Trifluralin	0.22	U	ng/L	P424460	
	EPA 8276	Chlordane	3.0	I	ng/L	P424460	
		Toxaphene	17	U	ng/L	P424460	MS

Ref. Method and Comment:
EPA 8270E: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P424499

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P424584

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	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: P424584

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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 350.1 Rev. 2.0

Batch ID: P425100

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P424679

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P424899

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P424648

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P424484

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

Reference Method: EPA 8270E

Batch ID: P424460

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
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P424460

Component	Result	Code	Units
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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P424460

Component	Result	Code	Units
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: P424460

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: SM 2320 B-2011

Batch ID: P424906

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

Reference Method: SM 2540 D-2015

Batch ID: P424829

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P425320

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P424636

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P424636

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424499

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	102		P	85 - 115
Magnesium	100		P	85 - 115
Strontium	103		P	85 - 115
Tin	104		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	107		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424584

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Antimony	96.9		P	85 - 115
Arsenic	97.9		P	85 - 115
Beryllium	88.8		P	85 - 115
Cadmium	98.9		P	85 - 115
Chromium	94.0		P	85 - 115
Cobalt	97.4		P	85 - 115
Copper	97.4		P	85 - 115
Lead	91.4		P	85 - 115
Manganese	95.3		P	85 - 115
Molybdenum	96.1		P	85 - 115
Nickel	99.4		P	85 - 115
Selenium	97.6		P	85 - 115
Silver	96.5		P	85 - 115
Thallium	97.8		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425100

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424679

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424899

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P424648

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P424484

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.9		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P424460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	65.4		P	10 - 92.0
Alpha-BHC	97.9		P	75 - 107
Alpha-Chlordane	88.7		P	50 - 108
Beta-BHC	130		P	36 - 138
Beta-Cyfluthrin	92.0		P	20 - 161
Bifenthrin	63.3		P	10 - 119
Carbophenothion	81.0		P	19 - 94.0
Chlorothalonil	114		P	26 - 186
Cis-Nonachlor	75.5		P	42 - 119
Cypermethrin	85.2		P	22 - 150
Dacthal	92.5		P	72 - 119
DDD-p,p'	100		P	45 - 107
DDE-p,p'	91.3		P	48 - 106
DDT-p,p'	80.5		P	48 - 110
Delta-BHC	122		P	54 - 140
Deltamethrin	95.8		P	22 - 189
Dichlobenil	98.6		P	36 - 117
Dicofol	84.1		P	46 - 155
Dieldrin	95.1		P	54 - 110
Endosulfan I	83.9		P	59 - 105
Endosulfan II	96.6		P	51 - 118
Endosulfan Sulfate	119		P	57 - 121
Endrin	95.7		P	10 - 120
Endrin Aldehyde	89.6		P	34 - 118
Endrin Ketone	102		P	69 - 177
Esfenvalerate	83.5		P	23 - 168
Ethalfuralin	81.8		P	49 - 99.0
Fenpropathrin	84.5		P	34 - 117
Gamma-BHC	99.7		P	72 - 117
Gamma-Chlordane	79.8		P	43 - 106
Heptachlor	73.7		P	41 - 98.0
Heptachlor Epoxide	82.7		P	57 - 106
Hexachlorobenzene	74.4		P	36 - 99.0
Kepone	157		P	16 - 215
Lambda-Cyhalothrin	80.2		P	21 - 177
Methoprene	80.6		P	10 - 119
Methoxychlor	99.8		P	60 - 112
MGK-264	108		P	26 - 122
Mirex	76.1		P	10 - 169
Oxychlordane	81.0		P	43 - 105

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P424460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
PCB-1016	83.9		P	48 - 112
PCB-1260	96.4		P	44 - 118
Permethrin	93.4		P	24 - 148
Phenothrin	87.2		P	10 - 106
Piperonyl Butoxide	122		P	10 - 139
Prallethrin	109		P	17 - 109
Tau-Fluvalinate	79.3		P	13 - 131
Tetramethrin	118		P	10 - 132
Trans-Nonachlor	73.6		P	44 - 106
Triclosan Methyl	80.3		P	59 - 109
Trifluralin	82.2		P	44 - 101

Reference Method: EPA 8276
Batch ID: P424460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	98.6		P	53 - 126
Toxaphene	113		P	56 - 211

Reference Method: SM 2320 B-2011
Batch ID: P424906

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	93.1		F	94 - 106

Reference Method: SM 2540 D-2015
Batch ID: P424829

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.0		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P425320

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.8		F	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P424636

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2379389	Iron	104	101	P/P	80 - 120
2379389	Titanium	109	108	P/P	80 - 120
2379389	Vanadium	106	104	P/P	80 - 120
2379389	Zinc	108	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424584

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2379389	Aluminum	97.6	99.3	P/P	70 - 130
2379389	Antimony	98.6	102	P/P	70 - 130
2379389	Arsenic	102	111	P/P	70 - 130
2379389	Beryllium	99.1	99.1	P/P	70 - 130
2379389	Cadmium	98.8	101	P/P	70 - 130
2379389	Chromium	90.2	91.7	P/P	70 - 130
2379389	Cobalt	99.7	102	P/P	70 - 130
2379389	Copper	104	108	P/P	70 - 130
2379389	Lead	98.9	100	P/P	70 - 130
2379389	Manganese	80.3	93.0	P/P	70 - 130
2379389	Molybdenum	101	107	P/P	70 - 130
2379389	Nickel	89.7	111	P/P	70 - 130
2379389	Selenium	102	106	P/P	70 - 130
2379389	Silver	89.5	92.0	P/P	70 - 130
2379389	Thallium	100	104	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425100

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380314	Ammonia-N	105	108	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424679

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380314	Kjeldahl Nitrogen	98.3	97.3	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P424899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380072	NO2NO3-N	97.6	97.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P424648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380483	Total-P	101	101	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P424484

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380451	O-Phosphate-P	97.8	99.2	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P424460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380065	Aldrin	66.9	59.5	P/P	20 - 82.0
2380065	Alpha-BHC	96.4	104	P/P	71 - 109
2380065	Alpha-Chlordane	110	103	F/P	42 - 106
2380065	Beta-BHC	133	143	P/P	69 - 180
2380065	Beta-Cyfluthrin	104	90.6	P/P	18 - 175
2380065	Bifenthrin	71.8	67.1	P/P	21 - 128
2380065	Carbophenothion	100	97.9	P/P	10 - 126
2380065	Chlorothalonil	137	138	P/P	10 - 300
2380065	Cis-Nonachlor	78.7	76.9	P/P	34 - 106
2380065	Cypermethrin	93.2	83.0	P/P	22 - 158
2380065	Dacthal	103	94.5	P/P	54 - 116
2380065	DDD-p,p'	102	99.9	P/P	34 - 107
2380065	DDE-p,p'	105	97.2	P/P	33 - 110
2380065	DDT-p,p'	77.8	75.9	P/P	50 - 122
2380065	Delta-BHC	135	138	P/P	77 - 193
2380065	Deltamethrin	107	104	P/P	10 - 195
2380065	Dichlobenil	64.3	65.9	P/P	25 - 113
2380065	Dicofol	80.7	87.8	P/P	38 - 247
2380065	Dieldrin	106	103	P/P	45 - 118
2380065	Endosulfan I	94.3	86.0	P/P	51 - 106
2380065	Endosulfan II	97.6	90.3	P/P	37 - 122
2380065	Endosulfan Sulfate	109	118	P/P	43 - 132
2380065	Endrin	106	104	F/F	29 - 101
2380065	Endrin Aldehyde	89.1	83.0	P/P	19 - 110
2380065	Endrin Ketone	97.4	107	P/P	60 - 140
2380065	Esfenvalerate	110	108	P/P	26 - 199
2380065	Ethalfuralin	77.2	76.1	P/P	45 - 99.0
2380065	Fenpropathrin	78.9	77.2	P/P	35 - 120
2380065	Gamma-BHC	93.2	94.4	P/P	63 - 128
2380065	Gamma-Chlordane	97.0	86.7	P/P	40 - 104
2380065	Heptachlor	73.6	73.5	P/P	36 - 97.0
2380065	Heptachlor Epoxide	88.9	82.1	P/P	49 - 184
2380065	Hexachlorobenzene	73.0	71.0	P/P	39 - 96.0
2380065	Kepone	174	175	P/P	10 - 217
2380065	Lambda-Cyhalothrin	86.7	89.4	P/P	21 - 193
2380065	Methoprene	103	102	P/P	20 - 106
2380065	Methoxychlor	98.3	101	P/P	53 - 118
2380065	MGK-264	119	115	F/P	40 - 118
2380065	Mirex	73.8	62.9	P/P	26 - 92.0
2380065	Oxychlordane	90.9	82.5	P/P	44 - 99.0
2380065	Permethrin	101	94.3	P/P	33 - 182
2380065	Phenothrin	89.8	90.0	P/P	10 - 129
2380065	Piperonyl Butoxide	136	140	P/P	10 - 211
2380065	Prallethrin	132	123	F/F	24 - 113
2380065	Tau-Fluvalinate	99.0	93.6	P/P	14 - 149
2380065	Tetramethrin	125	126	P/P	17 - 151

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P424460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380065	Trans-Nonachlor	88.1	70.6	P/P	42 - 102
2380065	Triclosan Methyl	98.5	95.6	P/P	48 - 108
2380065	Trifluralin	76.3	78.2	P/P	47 - 96.0
2380515	PCB-1016	86.1	89.4	P/P	46 - 111
2380515	PCB-1260	89.7	121	P/F	45 - 114

Reference Method: EPA 8276

Batch ID: P424460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380515	Chlordane	93.5	99.3	P/P	53 - 126
2380515	Toxaphene	292	294	F/F	56 - 211

Reference Method: SM 4500-F- C-2011

Batch ID: P425320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380071	Fluoride	100	100	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P424636

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2380818	Organic Carbon	97.3	95.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P424499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380241	Turbidity	9.38	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P424584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2379389	Calcium	1.69	Spike	P	0 - 20
2379389	Iron	1.57	Spike	P	0 - 20
2379389	Magnesium	0.578	Spike	P	0 - 20
2379389	Strontium	2.99	Spike	P	0 - 20
2379389	Titanium	1.48	Spike	P	0 - 20
2379389	Vanadium	1.64	Spike	P	0 - 20
2379389	Zinc	2.21	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P424584

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2379389	Aluminum	1.46	Spike	P	0 - 20
2379389	Antimony	3.22	Spike	P	0 - 20
2379389	Arsenic	4.21	Spike	P	0 - 20
2379389	Beryllium	0.0258	Spike	P	0 - 20
2379389	Cadmium	1.78	Spike	P	0 - 20
2379389	Chromium	1.52	Spike	P	0 - 20
2379389	Cobalt	1.13	Spike	P	0 - 20
2379389	Copper	3.93	Spike	P	0 - 20
2379389	Lead	1.31	Spike	P	0 - 20
2379389	Manganese	3.61	Spike	P	0 - 20
2379389	Molybdenum	4.52	Spike	P	0 - 20
2379389	Nickel	4.14	Spike	P	0 - 20
2379389	Selenium	3.48	Spike	P	0 - 20
2379389	Silver	2.72	Spike	P	0 - 20
2379389	Thallium	4.17	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P425100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380314	Ammonia-N	1.53	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P424679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380314	Kjeldahl Nitrogen	0.940	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P424899

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380072	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P424648

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380483	Total-P	0.436	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P424484

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380451	O-Phosphate-P	1.32	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P424460

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380065	Aldrin	11.6	Spike	P	0 - 41
2380065	Alpha-BHC	7.91	Spike	P	0 - 25
2380065	Alpha-Chlordane	6.14	Spike	P	0 - 33
2380065	Beta-BHC	7.09	Spike	P	0 - 36
2380065	Beta-Cyfluthrin	14.0	Spike	P	0 - 42
2380065	Bifenthrin	6.65	Spike	P	0 - 53
2380065	Carbophenothion	2.25	Spike	P	0 - 49
2380065	Chlorothalonil	1.02	Spike	P	0 - 71
2380065	Cis-Nonachlor	2.41	Spike	P	0 - 29
2380065	Cypermethrin	11.5	Spike	P	0 - 40
2380065	Dacthal	8.72	Spike	P	0 - 26
2380065	DDD-p,p'	1.71	Spike	P	0 - 39
2380065	DDE-p,p'	7.69	Spike	P	0 - 33
2380065	DDT-p,p'	2.45	Spike	P	0 - 40
2380065	Delta-BHC	2.18	Spike	P	0 - 37
2380065	Deltamethrin	2.54	Spike	P	0 - 100
2380065	Dichlobenil	2.47	Spike	P	0 - 40
2380065	Dicofol	8.39	Spike	P	0 - 31
2380065	Dieldrin	2.64	Spike	P	0 - 27
2380065	Endosulfan I	9.21	Spike	P	0 - 23
2380065	Endosulfan II	7.79	Spike	P	0 - 28
2380065	Endosulfan Sulfate	8.10	Spike	P	0 - 38
2380065	Endrin	2.47	Spike	P	0 - 63
2380065	Endrin Aldehyde	7.12	Spike	P	0 - 60
2380065	Endrin Ketone	8.99	Spike	P	0 - 37
2380065	Esfenvalerate	1.83	Spike	P	0 - 52
2380065	Ethalfuralin	1.46	Spike	P	0 - 23
2380065	Fenpropathrin	2.18	Spike	P	0 - 32
2380065	Gamma-BHC	1.22	Spike	P	0 - 17
2380065	Gamma-Chlordane	11.2	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P424460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380065	Heptachlor	0.0170	Spike	P	0 - 29
2380065	Heptachlor Epoxide	7.99	Spike	P	0 - 25
2380065	Hexachlorobenzene	2.80	Spike	P	0 - 36
2380065	Kepone	0.797	Spike	P	0 - 93
2380065	Lambda-Cyhalothrin	3.02	Spike	P	0 - 55
2380065	Methoprene	1.01	Spike	P	0 - 53
2380065	Methoxychlor	2.70	Spike	P	0 - 29
2380065	MGK-264	3.48	Spike	P	0 - 35
2380065	Mirex	15.9	Spike	P	0 - 46
2380065	Oxychlordane	9.60	Spike	P	0 - 29
2380065	Permethrin	7.21	Spike	P	0 - 44
2380065	Phenothrin	0.180	Spike	P	0 - 56
2380065	Piperonyl Butoxide	2.66	Spike	P	0 - 100
2380065	Prallethrin	6.85	Spike	P	0 - 42
2380065	Tau-Fluvalinate	5.66	Spike	P	0 - 54
2380065	Tetramethrin	1.19	Spike	P	0 - 51
2380065	Trans-Nonachlor	22.0	Spike	P	0 - 37
2380065	Triclosan Methyl	2.98	Spike	P	0 - 31
2380065	Trifluralin	2.47	Spike	P	0 - 30
2380515	PCB-1016	3.80	Spike	P	0 - 32
2380515	PCB-1260	29.9	Spike	P	0 - 31

Reference Method: EPA 8276

Batch ID: P424460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380515	Chlordane	4.57	Spike	P	0 - 25
2380515	Toxaphene	0.553	Spike	P	0 - 26

Reference Method: SM 2320 B-2011

Batch ID: P424906

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380254	Total Alkalinity	0.825	Sample	P	0 - 3.8

Reference Method: SM 4500-F- C-2011

Batch ID: P425320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380071	Fluoride	0.0	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011

Batch ID: P424636

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2380818	Organic Carbon	1.42	Spike	P	0 - 20

Quality Assurance Report Precision

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

Quality Assurance Report Surrogates

Lab Sample ID: 2380340

Field Sample ID: G3SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	100	P	29 - 130
EPA 8270E	Decachlorobiphenyl	86.8	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	69.4	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	69.2	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	61.7	P	30 - 101
EPA 8276	PCNB	99.8	P	48 - 121

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A116877

Included Lab Sample IDs: 2380315, 2380318

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116882

Included Lab Sample IDs: 2380313, 2380316

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

Reference Method: SM 5310 B-2011

Run ID: A116931

Included Lab Sample IDs: 2380314, 2380317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	91.4	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A116983

Included Lab Sample IDs: 2380340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	101		P	80 - 120
PCB-1260	104		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116989

Included Lab Sample IDs: 2380314, 2380317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	98.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A117017

Included Lab Sample IDs: 2380314, 2380317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.3	95.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117025

Included Lab Sample IDs: 2380359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.6	102	P/P	90 - 110
Antimony	96.2	98.0	P/P	90 - 110
Arsenic	99.1	101	P/P	90 - 110
Beryllium	95.2	95.5	P/P	90 - 110
Cadmium	97.0	97.8	P/P	90 - 110
Chromium	92.6	94.7	P/P	90 - 110
Cobalt	96.9	96.7	P/P	90 - 110
Copper	98.7	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117025

Included Lab Sample IDs: 2380359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	95.4	96.9	P/P	90 - 110
Molybdenum	95.6	96.3	P/P	90 - 110
Nickel	99.8	103	P/P	90 - 110
Selenium	98.8	100	P/P	90 - 110
Silver	96.9	98.4	P/P	90 - 110
Thallium	95.9	96.7	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A117031

Included Lab Sample IDs: 2380340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.9		P	80 - 120
Toxaphene	88.8		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A117048

Included Lab Sample IDs: 2380359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	101	P/P	90 - 110
Iron	101	101	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Strontium	99.6	101	P/P	90 - 110
Tin	101	101	P/P	90 - 110
Titanium	98.8	99.1	P/P	90 - 110
Vanadium	98.6	98.6	P/P	90 - 110
Zinc	105	103	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117052

Included Lab Sample IDs: 2380359

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	93.9	93.3	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A117057

Included Lab Sample IDs: 2380340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	90.8		P	80 - 120
Alpha-BHC	108		P	80 - 120
Alpha-Chlordane	112		P	80 - 120
Beta-BHC	120		P	80 - 120
Beta-Cyfluthrin	110		P	80 - 120
Bifenthrin	103		P	80 - 120
Carbophenothion	112		P	80 - 120
Chlorothalonil	111		P	80 - 120
Cis-Nonachlor	94.0		P	80 - 120
Cypermethrin	90.5		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A117057
Included Lab Sample IDs: 2380340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dacthal	92.3		P	80 - 120
DDD-p,p'	114		P	80 - 120
DDE-p,p'	108		P	80 - 120
DDT-p,p'	101		P	80 - 120
Delta-BHC	119		P	80 - 120
Deltamethrin	110		P	80 - 120
Dichlobenil	107		P	80 - 120
Dicofol	95.0		P	80 - 120
Dieldrin	107		P	80 - 120
Endosulfan I	88.6		P	80 - 120
Endosulfan II	89.8		P	80 - 120
Endosulfan Sulfate	105		P	80 - 120
Endrin	107		P	80 - 120
Endrin Aldehyde	91.2		P	80 - 120
Endrin Ketone	97.7		P	80 - 120
Esfenvalerate	99.2		P	80 - 120
Ethalfuralin	99.5		P	80 - 120
Fenpropathrin	104		P	80 - 120
Gamma-BHC	93.8		P	80 - 120
Gamma-Chlordane	92.2		P	80 - 120
Heptachlor	93.3		P	80 - 120
Heptachlor Epoxide	91.0		P	80 - 120
Hexachlorobenzene	111		P	80 - 120
Kepone	65.4*		F	80 - 120
Lambda-Cyhalothrin	94.8		P	80 - 120
Methoprene	109		P	80 - 120
Methoxychlor	102		P	80 - 120
MGK-264	94.8		P	80 - 120
Mirex	93.9		P	80 - 120
Oxychlordane	97.9		P	80 - 120
Permethrin	114		P	80 - 120
Phenothrin	116		P	80 - 120
Piperonyl Butoxide	92.2		P	80 - 120
Prallethrin	104		P	80 - 120
Tau-Fluvalinate	105		P	80 - 120
Tetramethrin	109		P	80 - 120
Trans-Nonachlor	88.2		P	80 - 120
Triclosan Methyl	94.3		P	80 - 120
Trifluralin	99.7		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117060
Included Lab Sample IDs: 2380314, 2380317

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A117062

Included Lab Sample IDs: 2380313, 2380316

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	94.0	94.9	P/P	90 - 110
Total Alkalinity	94.9	94.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117140

Included Lab Sample IDs: 2380314, 2380317

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	97.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117235

Included Lab Sample IDs: 2380313, 2380316

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	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
EPA 180.1 Rev. 2.0	Turbidity	100				9.38	
EPA 200.7 Rev. 4.4	Calcium	102					1.69
	Iron	102	104	101			1.57
	Magnesium	100					0.578
	Strontium	103					2.99
	Tin	104					
	Titanium	103	109	108			1.48
	Vanadium	103	106	104			1.64
	Zinc	107	108	105			2.21
EPA 200.8 Rev. 5.4	Aluminum	98.9	97.6	99.3			1.46
	Antimony	96.9	98.6	102			3.22
	Arsenic	97.9	102	111			4.21
	Beryllium	88.8	99.1	99.1			0.0258
	Cadmium	98.9	98.8	101			1.78
	Chromium	94.0	90.2	91.7			1.52
	Cobalt	97.4	99.7	102			1.13
	Copper	97.4	104	108			3.93
	Lead	91.4	98.9	100			1.31
	Manganese	95.3	80.3	93.0			3.61
	Molybdenum	96.1	101	107			4.52
	Nickel	99.4	89.7	111			4.14
	Selenium	97.6	102	106			3.48
	Silver	96.5	89.5	92.0			2.72
	Thallium	97.8	100	104			4.17
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	105	108			1.53
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	98.3	97.3			0.940
EPA 353.2 Rev. 2.0	NO2NO3-N	100	97.6	97.6			0.0
EPA 365.1 Rev. 2.0	Total-P	104	101	101			0.436
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.9	97.8	99.2			1.32
EPA 8270E	Aldrin	65.4	66.9	59.5			11.6
	Alpha-BHC	97.9	96.4	104			7.91
	Alpha-Chlordane	88.7	110	103			6.14
	Beta-BHC	130	133	143			7.09
	Beta-Cyfluthrin	92.0	104	90.6			14.0
	Bifenthrin	63.3	71.8	67.1			6.65
	Carbophenothion	81.0	100	97.9			2.25
	Chlorothalonil	114	137	138			1.02
	Cis-Nonachlor	75.5	78.7	76.9			2.41
	Cypermethrin	85.2	93.2	83.0			11.5
	Dacthal	92.5	103	94.5			8.72
	DDD-p,p'	100	102	99.9			1.71
	DDE-p,p'	91.3	105	97.2			7.69
	DDT-p,p'	80.5	77.8	75.9			2.45
	Delta-BHC	122	135	138			2.18
	Deltamethrin	95.8	107	104			2.54
	Dichlobenil	98.6	64.3	65.9			2.47
	Dicofol	84.1	80.7	87.8			8.39
	Dieldrin	95.1	106	103			2.64
	Endosulfan I	83.9	94.3	86.0			9.21
	Endosulfan II	96.6	97.6	90.3			7.79
	Endosulfan Sulfate	119	109	118			8.10
	Endrin	95.7	106	104			2.47
	Endrin Aldehyde	89.6	89.1	83.0			7.12
	Endrin Ketone	102	97.4	107			8.99

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Esfenvalerate	83.5	110	108			1.83
	Ethalfuralin	81.8	77.2	76.1			1.46
	Fenpropathrin	84.5	78.9	77.2			2.18
	Gamma-BHC	99.7	93.2	94.4			1.22
	Gamma-Chlordane	79.8	97.0	86.7			11.2
	Heptachlor	73.7	73.6	73.5			0.0170
	Heptachlor Epoxide	82.7	88.9	82.1			7.99
	Hexachlorobenzene	74.4	73.0	71.0			2.80
	Kepone	157	174	175			0.797
	Lambda-Cyhalothrin	80.2	86.7	89.4			3.02
	Methoprene	80.6	103	102			1.01
	Methoxychlor	99.8	98.3	101			2.70
	MGK-264	108	119	115			3.48
	Mirex	76.1	73.8	62.9			15.9
	Oxychlordane	81.0	90.9	82.5			9.60
	PCB-1016	83.9	86.1	89.4			3.80
	PCB-1260	96.4	121	89.7			29.9
	Permethrin	93.4	101	94.3			7.21
	Phenothrin	87.2	89.8	90.0			0.180
	Piperonyl Butoxide	122	136	140			2.66
	Prallethrin	109	132	123			6.85
	Tau-Fluvalinate	79.3	99.0	93.6			5.66
	Tetramethrin	118	125	126			1.19
	Trans-Nonachlor	73.6	88.1	70.6			22.0
	Triclosan Methyl	80.3	98.5	95.6			2.98
	Trifluralin	82.2	76.3	78.2			2.47
EPA 8276	Chlordane	98.6	93.5	99.3			4.57
	Toxaphene	113	292	294			0.553
SM 2320 B-2011	Total Alkalinity	93.1				0.825	
SM 2540 D-2015	TSS	96.0					
SM 4500-F- C-2011	Fluoride	94.8	100	100			0.0
SM 5310 B-2011	Organic Carbon	98.6	97.3	95.4			1.42

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2380313, 2380316
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2380359
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2380359
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2380314, 2380317
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2380314, 2380317
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2380314, 2380317
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2380314, 2380317
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2380315, 2380318
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2380340
EPA 8270E	PCBs in water matrices by GC/MS/MS	2380340
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2380340
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2380313, 2380316
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2380313, 2380316
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2380313, 2380316

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2380314, 2380317

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	01/12/2023			01/12/2023 13:49	Anna M. Plaviak	2380313
	01/12/2023			01/12/2023 13:50	Anna M. Plaviak	2380316
EPA 200.7 Rev. 4.4	01/12/2023	01/17/2023 10:50	George D Taylor	01/23/2023 18:03	McKinley C Carter	2380359
	01/12/2023	01/17/2023 10:50	George D Taylor	01/23/2023 18:11	McKinley C Carter	2380359
EPA 200.8 Rev. 5.4	01/12/2023	01/17/2023 10:50	George D Taylor	01/20/2023 23:14	Emily M Philpot	2380359
	01/12/2023	01/17/2023 10:50	George D Taylor	01/21/2023 01:10	Emily M Philpot	2380359
	01/12/2023	01/17/2023 10:50	George D Taylor	01/23/2023 15:42	Emily M Philpot	2380359
	01/12/2023	01/17/2023 10:50	George D Taylor	01/27/2023 13:24	Ping Hua	2380314
EPA 350.1 Rev. 2.0	01/12/2023			01/27/2023 13:28	Ping Hua	2380317
	01/12/2023			01/27/2023 13:28	Ping Hua	2380317
EPA 351.2 Rev. 2.0	01/12/2023	01/19/2023 14:22	Judith K. Clark	01/20/2023 13:02	Judith K. Clark	2380314
	01/12/2023	01/19/2023 14:22	Judith K. Clark	01/20/2023 13:07	Judith K. Clark	2380317
EPA 353.2 Rev. 2.0	01/12/2023			01/24/2023 10:07	Beverly Y. Sanders	2380314
	01/12/2023			01/24/2023 10:08	Beverly Y. Sanders	2380317
EPA 365.1 Rev. 2.0	01/12/2023	01/18/2023 15:47	Adam P Silver	01/19/2023 15:27	James L Waggeberby	2380314
	01/12/2023	01/18/2023 15:47	Adam P Silver	01/19/2023 15:28	James L Waggeberby	2380317
EPA 365.1 Rev. 2.0 dissolved	01/12/2023			01/12/2023 14:20	Elise M. Gillis	2380315
	01/12/2023			01/12/2023 14:21	Elise M. Gillis	2380318
EPA 8270E	01/12/2023	01/13/2023 08:00	Fe-Val Siddell	01/18/2023 20:32	Vandana T. Nagar	2380340
	01/12/2023	01/13/2023 08:00	Fe-Val Siddell	01/18/2023 22:21	Julie Wi	2380340
EPA 8276	01/12/2023	01/13/2023 08:00	Fe-Val Siddell	01/19/2023 10:41	Lipi Saha	2380340
SM 2320 B-2011	01/12/2023			01/24/2023 03:36	Dale L. Simmons	2380313
	01/12/2023			01/24/2023 04:20	Dale L. Simmons	2380316
SM 2540 D-2015	01/12/2023			01/17/2023 15:22	Yijie Li	2380313, 2380316
SM 4500-F- C-2011	01/12/2023			02/02/2023 04:29	Dale L. Simmons	2380313
	01/12/2023			02/02/2023 04:35	Dale L. Simmons	2380316
SM 5310 B-2011	01/12/2023			01/18/2023 00:45	Elise M. Gillis	2380314
	01/12/2023			01/18/2023 01:20	Elise M. Gillis	2380317