

Chemical Analysis Report

SW-DIST-2023-10-04-01

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

Event Description: **Sarasota Run Run 17**
Request ID: **RQ-2023-10-02-71**
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
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Certified by: Chris Bowen, Environmental Administrator

Date Certified: 25-OCT-2023 11:20



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: Island Park Boat Basin off Dock

Collection Date/Time: 10/03/2023 10:05

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2442816	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P435963	
	EPA 180.1 Rev. 2.0	Turbidity	5.4		NTU	P435962	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+04		mg Cl/L	P436174	
		Sulfate	2.9E+03		mg SO4/L	P436177	
	SM 2320 B-2011	Total Alkalinity	118		mg CaCO3/L	P436358	
	SM 2540 C-2015	TDS	3.80E+04		mg/L	P436671	
	SM 2540 D-2015	TSS	7	I	mg/L	P436496	
2442817	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P436360	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.056		mg N/L	P436135	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P436273	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.014		mg N/L	P436448	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P436335	
2442826	SM 5310 B-2011	Organic Carbon	4.0		mg C/L	P436473	
	EPA 200.7 Rev. 4.4	Calcium	439		mg/L	P436194	
		Iron	120	U	ug/L	P436194	
		Magnesium	1.34E+03		mg/L	P436194	
		Manganese	4.0	U	ug/L	P436194	
		Potassium	410		mg/L	P436194	
		Sodium	1.04E+04		mg/L	P436194	
		Strontium	8.20E+03		ug/L	P436194	
		Tin	30	U	ug/L	P436194	
		Titanium	3.1	I	ug/L	P436194	
		Vanadium	8.0	U	ug/L	P436194	
		Zinc	20	U	ug/L	P436194	
	EPA 200.8 Rev. 5.4	Aluminum	121		ug/L	P436194	
		Antimony	0.20	I	ug/L	P436194	
		Arsenic	2.44		ug/L	P436194	
		Barium	11.5		ug/L	P436194	
		Beryllium	0.040	U	ug/L	P436194	
		Boron	4.65E+03		ug/L	P436194	
		Cadmium	0.080	U	ug/L	P436194	
		Chromium	4.0	U	ug/L	P436194	
		Cobalt	0.20	U	ug/L	P436194	
		Copper	5.5		ug/L	P436194	
		Lead	0.80	U	ug/L	P436194	
		Molybdenum	13.3		ug/L	P436194	
		Nickel	5.0	U	ug/L	P436194	
		Selenium	0.80	U	ug/L	P436194	
		Silver	0.040	U	ug/L	P436194	
		Thallium	0.40	U	ug/L	P436194	
	SM 2340 B-2011	Hardness	6.61E+03		mg/L	P436194	

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium, sodium and strontium are unavailable because of high analyte concentration in the QC sample.
EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 10/12/2023.

Sample Location: Hudson Bayou Tidal by Marie Selby Botanical Gardens **Collection Date/Time:** 10/03/2023 10:40

Field ID: G3SW0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2442818	DEP SOP: NU-094-1	Color (true)	4.2	I	PCU	P435963	
	EPA 180.1 Rev. 2.0	Turbidity	8.5		NTU	P435962	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+04		mg Cl/L	P436174	
		Sulfate	2.8E+03		mg SO4/L	P436177	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P436358	
	SM 2540 C-2015	TDS	3.70E+04		mg/L	P436671	
	SM 2540 D-2015	TSS	6	I	mg/L	P436496	
	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P436360	
2442819	EPA 350.1 Rev. 2.0	Ammonia-N	0.040		mg N/L	P436135	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P436273	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P436448	
	EPA 365.1 Rev. 2.0	Total-P	0.090		mg P/L	P436335	
	SM 5310 B-2011	Organic Carbon	4.3		mg C/L	P436473	

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: Whitaker Bayou at Ringling College of Art

Collection Date/Time: 10/03/2023 11:10

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2442825	EPA 8270E	Aldrin	0.68	U	ng/L	P435920	
		Alpha-BHC	0.10	U	ng/L	P435920	
		Alpha-Chlordane	0.21	U	ng/L	P435920	
		PCB-1016	2.1	U	ng/L	P435920	
		Beta-BHC	0.10	U	ng/L	P435920	
		PCB-1221	2.1	U	ng/L	P435920	
		Beta-Cyfluthrin	1.3	U	ng/L	P435920	
		PCB-1232	2.1	U	ng/L	P435920	
		Bifenthrin	0.52	U	ng/L	P435920	
		PCB-1242	2.1	U	ng/L	P435920	
		Carbophenothion	0.94	U	ng/L	P435920	
		PCB-1248	2.1	U	ng/L	P435920	
		Chlorothalonil	3.8	U	ng/L	P435920	
		PCB-1254	2.1	U	ng/L	P435920	
		Cis-Nonachlor	0.21	U	ng/L	P435920	
		PCB-1260	2.1	U	ng/L	P435920	
		Cypermethrin	1.6	U	ng/L	P435920	
		Dacthal	0.16	U	ng/L	P435920	
		DDD-p,p'	0.26	U	ng/L	P435920	
		DDE-p,p'	0.21	U	ng/L	P435920	
		DDT-p,p'	0.83	U	ng/L	P435920	
		Delta-BHC	0.86	I	ng/L	P435920	
		Deltamethrin	1.3	U	ng/L	P435920	
		Dichlobenil	0.26	U	ng/L	P435920	
		Dicofol	1.3	U	ng/L	P435920	
		Dieldrin	0.42	U	ng/L	P435920	
		Endosulfan I	0.42	U	ng/L	P435920	
		Endosulfan II	0.94	U	ng/L	P435920	
		Endosulfan Sulfate	0.31	U	ng/L	P435920	
		Endrin	0.94	U	ng/L	P435920	
		Endrin Aldehyde	0.78	U	ng/L	P435920	
		Endrin Ketone	0.42	U	ng/L	P435920	
		Esfenvalerate	0.78	U	ng/L	P435920	
		Ethalfuralin	0.16	U	ng/L	P435920	
		Fenpropathrin	0.26	U	ng/L	P435920	
		Gamma-BHC	0.13	U	ng/L	P435920	
		Gamma-Chlordane	0.39	I	ng/L	P435920	
		Heptachlor	0.21	U	ng/L	P435920	
		Heptachlor Epoxide	0.26	U	ng/L	P435920	
		Hexachlorobenzene**	1.0	U	ng/L	P435920	
		Kepone	14	U	ng/L	P435920	
		Lambda-Cyhalothrin	0.78	U	ng/L	P435920	
		Methoprene	0.78	U	ng/L	P435920	
		Methoxychlor	0.31	U	ng/L	P435920	

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2442825	EPA 8270E	MGK-264	0.21	U	ng/L	P435920	
		Mirex	0.36	U	ng/L	P435920	
		Oxychlordane	0.31	U	ng/L	P435920	
		Permethrin	1.7	U	ng/L	P435920	
		Phenothrin	0.94	U	ng/L	P435920	
		Piperonyl Butoxide	4.0		ng/L	P435920	
		Prallethrin	2.1	U	ng/L	P435920	
		Tau-Fluvalinate	0.26	U	ng/L	P435920	
		Tetramethrin	0.78	U	ng/L	P435920	
		Trans-Nonachlor	0.21	U	ng/L	P435920	
		Triclosan Methyl	0.16	U	ng/L	P435920	
		Trifluralin	0.94	I	ng/L	P435920	
	EPA 8276	Chlordane	2.1	UJ	ng/L	P435920	SUR
		Toxaphene	16	UJ	ng/L	P435920	SUR

Ref. Method and Comment:
EPA 8276: Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P435963

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435962

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/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: P436194

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
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: P436174

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: P436177

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436135

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436335

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

Reference Method: EPA 8270E
Batch ID: P435920

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P435920

Component	Result	Code	Units
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P435920

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

Reference Method: SM 2320 B-2011

Batch ID: P436358

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

Reference Method: SM 2540 C-2015

Batch ID: P436671

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P436671

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P436496

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P436473

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: P435963

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435962

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	103		P	85 - 115
Magnesium	101		P	85 - 115
Manganese	100		P	85 - 115
Potassium	98.7		P	85 - 115
Sodium	96.3		P	85 - 115
Strontium	101		P	85 - 115
Tin	106		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P436194

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.6		P	85 - 115
Antimony	96.0		P	85 - 115
Arsenic	96.9		P	85 - 115
Barium	101		P	85 - 115
Beryllium	90.9		P	85 - 115
Boron	95.7		P	85 - 115
Cadmium	98.6		P	85 - 115
Chromium	96.7		P	85 - 115
Cobalt	96.5		P	85 - 115
Copper	95.4		P	85 - 115
Lead	94.3		P	85 - 115
Molybdenum	96.5		P	85 - 115
Nickel	96.8		P	85 - 115
Selenium	97.3		P	85 - 115
Silver	106		P	85 - 115
Thallium	98.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436174

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436177

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436135

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

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: P436335

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

Reference Method: EPA 8270E
Batch ID: P435920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	50.4		P	24 - 81.0
Alpha-BHC	86.0		P	65 - 110
Alpha-Chlordane	92.1		P	43 - 119
Beta-BHC	109		P	54 - 165
Beta-Cyfluthrin	70.0		P	27 - 165
Bifenthrin	49.5		P	17 - 117
Carbophenothion	36.4		P	21 - 108
Chlorothalonil	124		P	10 - 255
Cis-Nonachlor	84.7		P	34 - 98.0
Cypermethrin	47.4		P	25 - 143
Dacthal	86.6		P	55 - 139
DDD-p,p'	59.0		P	30 - 109
DDE-p,p'	51.5		P	35 - 106
DDT-p,p'	63.3		P	41 - 101
Delta-BHC	142		P	58 - 165
Deltamethrin	81.7		P	10 - 194
Dichlobenil	78.7		P	22 - 114
Dicofol	77.0		P	17 - 133
Dieldrin	59.5		P	45 - 129
Endosulfan I	66.7		P	49 - 104
Endosulfan II	68.6		P	37 - 117
Endosulfan Sulfate	93.4		P	38 - 128

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P435920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Endrin	55.5		P	35 - 116
Endrin Aldehyde	82.4		P	19 - 108
Endrin Ketone	91.6		P	44 - 134
Esfenvalerate	80.6		P	27 - 176
Ethalfuralin	76.2		P	49 - 100
Fenpropathrin	60.6		P	34 - 117
Gamma-BHC	109		P	59 - 129
Gamma-Chlordane	99.4		P	33 - 107
Heptachlor	57.3		P	37 - 94.0
Heptachlor Epoxide	75.7		P	38 - 118
Hexachlorobenzene	64.6		P	35 - 97.0
Kepone	88.8		P	10 - 221
Lambda-Cyhalothrin	37.2		P	23 - 190
Methoprene	45.0		P	21 - 109
Methoxychlor	78.7		P	46 - 118
MGK-264	99.0		P	39 - 122
Mirex	50.4		P	25 - 90.0
Oxychlordane	64.7		P	42 - 100
PCB-1016	69.2		P	45 - 107
PCB-1260	76.3		P	40 - 118
Permethrin	62.9		P	33 - 181
Phenothrin	53.3		P	12 - 125
Piperonyl Butoxide	91.1		P	10 - 178
Prallethrin	63.1		P	24 - 122
Tau-Fluvalinate	67.6		P	13 - 151
Tetramethrin	72.4		P	16 - 172
Trans-Nonachlor	64.1		P	39 - 100
Triclosan Methyl	67.1		P	43 - 110
Trifluralin	63.5		P	45 - 94.0

Reference Method: EPA 8276

Batch ID: P435920

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	90.2		P	52 - 117
Toxaphene	85.9		P	44 - 125

Reference Method: SM 2320 B-2011

Batch ID: P436358

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	96.3		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P436671

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.2		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P436496

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

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P436473

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P436194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443482	Iron	96.5	99.7	P/P	70 - 130
2443482	Manganese	92.9	98.5	P/P	80 - 120
2443482	Tin	93.7	97.1	P/P	70 - 130
2443482	Titanium	97.5	101	P/P	70 - 130
2443482	Vanadium	101	105	P/P	70 - 130
2443482	Zinc	100	102	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P436194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443482	Aluminum	95.6	96.1	P/P	70 - 130
2443482	Antimony	96.6	98.0	P/P	70 - 130
2443482	Arsenic	103	105	P/P	70 - 130
2443482	Barium	101	102	P/P	70 - 130
2443482	Beryllium	98.4	103	P/P	70 - 130
2443482	Boron	84.7	94.7	P/P	70 - 130
2443482	Cadmium	93.7	95.3	P/P	70 - 130
2443482	Chromium	89.0	89.7	P/P	70 - 130
2443482	Cobalt	90.8	90.4	P/P	70 - 130
2443482	Copper	86.7	93.8	P/P	70 - 130
2443482	Lead	95.1	96.7	P/P	70 - 130
2443482	Molybdenum	103	106	P/P	70 - 130
2443482	Nickel	91.7	92.2	P/P	70 - 130
2443482	Selenium	100	102	P/P	70 - 130
2443482	Silver	95.7	97.7	P/P	70 - 130
2443482	Thallium	99.0	101	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P436174

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442729	Chloride	105		P	90 - 110
2442758	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P436177

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442729	Sulfate	96.4		P	90 - 110
2442758	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P436135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442649	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P436273

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442648	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442648	NO2NO3-N	96.7	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442171	Total-P	98.7	98.8	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P435920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442830	Aldrin	44.1	44.9	P/P	24 - 81.0
2442830	Alpha-BHC	85.7	73.0	P/P	65 - 110
2442830	Alpha-Chlordane	107	86.2	P/P	43 - 119
2442830	Beta-BHC	124	115	P/P	54 - 165
2442830	Beta-Cyfluthrin	69.6	67.8	P/P	27 - 165
2442830	Bifenthrin	43.4	42.7	P/P	17 - 117
2442830	Carbophenothion	66.2	59.5	P/P	21 - 108
2442830	Chlorothalonil	130	105	P/P	10 - 255
2442830	Cis-Nonachlor	90.2	75.4	P/P	34 - 98.0
2442830	Cypermethrin	47.6	44.8	P/P	25 - 143
2442830	Dacthal	93.1	78.5	P/P	55 - 139
2442830	DDD-p,p'	63.2	55.2	P/P	30 - 109
2442830	DDE-p,p'	61.3	50.3	P/P	35 - 106
2442830	DDT-p,p'	69.5	59.5	P/P	41 - 101
2442830	Delta-BHC	154	153	P/P	58 - 165
2442830	Deltamethrin	91.9	88.3	P/P	10 - 194
2442830	Dichlobenil	87.6	66.7	P/P	22 - 114
2442830	Dicofol	80.8	76.5	P/P	17 - 133
2442830	Dieldrin	62.9	55.9	P/P	45 - 129
2442830	Endosulfan I	69.3	59.3	P/P	49 - 104
2442830	Endosulfan II	79.2	76.5	P/P	37 - 117
2442830	Endosulfan Sulfate	103	82.9	P/P	38 - 128
2442830	Endrin	69.6	56.7	P/P	35 - 116
2442830	Endrin Aldehyde	86.8	71.1	P/P	19 - 108
2442830	Endrin Ketone	102	88.3	P/P	44 - 134
2442830	Esfenvalerate	81.4	79.3	P/P	27 - 176
2442830	Ethalfuralin	57.2	54.1	P/P	49 - 100
2442830	Fenpropathrin	66.8	54.9	P/P	34 - 117
2442830	Gamma-BHC	97.0	100	P/P	59 - 129
2442830	Gamma-Chlordane	99.0	94.3	P/P	33 - 107
2442830	Heptachlor	48.4	50.0	P/P	37 - 94.0
2442830	Heptachlor Epoxide	74.7	70.6	P/P	38 - 118
2442830	Hexachlorobenzene	70.8	60.9	P/P	35 - 97.0
2442830	Kepone	101	98.5	P/P	10 - 221

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P435920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442830	Lambda-Cyhalothrin	33.7	37.1	P/P	23 - 190
2442830	Methoprene	38.9	35.4	P/P	21 - 109
2442830	Methoxychlor	88.5	75.8	P/P	46 - 118
2442830	MGK-264	101	98.4	P/P	39 - 122
2442830	Mirex	52.5	55.7	P/P	25 - 90.0
2442830	Oxychlordane	63.2	51.5	P/P	42 - 100
2442830	Permethrin	63.6	57.9	P/P	33 - 181
2442830	Phenothrin	49.3	49.6	P/P	12 - 125
2442830	Piperonyl Butoxide	99.2	76.2	P/P	10 - 178
2442830	Prallethrin	66.2	72.1	P/P	24 - 122
2442830	Tau-Fluvalinate	72.7	69.4	P/P	13 - 151
2442830	Tetramethrin	71.7	69.4	P/P	16 - 172
2442830	Trans-Nonachlor	66.0	65.0	P/P	39 - 100
2442830	Triclosan Methyl	70.9	57.6	P/P	43 - 110
2442830	Trifluralin	62.4	50.4	P/P	45 - 94.0
2443209	PCB-1016	71.0	74.9	P/P	45 - 107
2443209	PCB-1260	71.2	72.2	P/P	40 - 112

Reference Method: EPA 8276

Batch ID: P435920

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443209	Chlordane	73.9	81.0	P/P	43 - 123
2443209	Toxaphene	71.7	85.1	P/P	27 - 156

Reference Method: SM 4500-F- C-2011

Batch ID: P436360

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2443462	Fluoride	99.9	101	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P436473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2442297	Organic Carbon	93.4	90.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P435963

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442647	Color (true)	1.77	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442971	Turbidity	2.25	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P436194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443482	Calcium	1.26	Spike	P	0 - 20
2443482	Iron	3.01	Spike	P	0 - 20
2443482	Magnesium	2.35	Spike	P	0 - 20
2443482	Manganese	5.00	Spike	P	0 - 20
2443482	Potassium	1.89	Spike	P	0 - 20
2443482	Sodium	1.84	Spike	P	0 - 20
2443482	Strontium	1.78	Spike	P	0 - 20
2443482	Tin	3.29	Spike	P	0 - 20
2443482	Titanium	3.34	Spike	P	0 - 20
2443482	Vanadium	3.93	Spike	P	0 - 20
2443482	Zinc	1.30	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P436194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443482	Aluminum	0.498	Spike	P	0 - 20
2443482	Antimony	1.47	Spike	P	0 - 20
2443482	Arsenic	1.69	Spike	P	0 - 20
2443482	Barium	0.976	Spike	P	0 - 20
2443482	Beryllium	4.84	Spike	P	0 - 20
2443482	Boron	1.84	Spike	P	0 - 20
2443482	Cadmium	1.68	Spike	P	0 - 20
2443482	Chromium	0.770	Spike	P	0 - 20
2443482	Cobalt	0.428	Spike	P	0 - 20
2443482	Copper	7.35	Spike	P	0 - 20
2443482	Lead	1.69	Spike	P	0 - 20
2443482	Molybdenum	2.01	Spike	P	0 - 20
2443482	Nickel	0.472	Spike	P	0 - 20
2443482	Selenium	2.14	Spike	P	0 - 20
2443482	Silver	2.10	Spike	P	0 - 20
2443482	Thallium	2.34	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436174

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442729	Chloride	0.394	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P436177

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442729	Sulfate	0.904	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P436135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442649	Ammonia-N	0.183	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436273

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442648	Kjeldahl Nitrogen	0.347	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442648	NO2NO3-N	0.516	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P436335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442171	Total-P	0.0660	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P435920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442830	Aldrin	1.80	Spike	P	0 - 41
2442830	Alpha-BHC	14.4	Spike	P	0 - 25
2442830	Alpha-Chlordane	21.8	Spike	P	0 - 32
2442830	Beta-BHC	7.46	Spike	P	0 - 33
2442830	Beta-Cyfluthrin	2.61	Spike	P	0 - 43
2442830	Bifenthrin	1.67	Spike	P	0 - 52
2442830	Carbophenothion	10.8	Spike	P	0 - 30
2442830	Chlorothalonil	21.3	Spike	P	0 - 82
2442830	Cis-Nonachlor	17.9	Spike	P	0 - 33

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P435920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442830	Cypermethrin	5.89	Spike	P	0 - 51
2442830	Dacthal	16.1	Spike	P	0 - 27
2442830	DDD-p,p'	13.6	Spike	P	0 - 39
2442830	DDE-p,p'	19.8	Spike	P	0 - 31
2442830	DDT-p,p'	15.5	Spike	P	0 - 29
2442830	Delta-BHC	0.730	Spike	P	0 - 35
2442830	Deltamethrin	4.09	Spike	P	0 - 100
2442830	Dichlobenil	27.1	Spike	P	0 - 40
2442830	Dicofol	5.52	Spike	P	0 - 37
2442830	Dieldrin	11.1	Spike	P	0 - 27
2442830	Endosulfan I	14.9	Spike	P	0 - 23
2442830	Endosulfan II	3.47	Spike	P	0 - 34
2442830	Endosulfan Sulfate	21.9	Spike	P	0 - 36
2442830	Endrin	20.5	Spike	P	0 - 45
2442830	Endrin Aldehyde	19.9	Spike	P	0 - 76
2442830	Endrin Ketone	14.3	Spike	P	0 - 43
2442830	Esfenvalerate	2.65	Spike	P	0 - 51
2442830	Ethalfuralin	4.73	Spike	P	0 - 22
2442830	Fenpropathrin	19.6	Spike	P	0 - 49
2442830	Gamma-BHC	2.98	Spike	P	0 - 28
2442830	Gamma-Chlordane	4.51	Spike	P	0 - 40
2442830	Heptachlor	3.32	Spike	P	0 - 29
2442830	Heptachlor Epoxide	5.63	Spike	P	0 - 33
2442830	Hexachlorobenzene	15.0	Spike	P	0 - 36
2442830	Kepone	2.93	Spike	P	0 - 85
2442830	Lambda-Cyhalothrin	9.85	Spike	P	0 - 55
2442830	Methoprene	9.42	Spike	P	0 - 53
2442830	Methoxychlor	15.5	Spike	P	0 - 50
2442830	MGK-264	2.67	Spike	P	0 - 43
2442830	Mirex	5.91	Spike	P	0 - 40
2442830	Oxychlordane	20.5	Spike	P	0 - 31
2442830	Permethrin	9.32	Spike	P	0 - 50
2442830	Phenothrin	0.457	Spike	P	0 - 58
2442830	Piperonyl Butoxide	26.2	Spike	P	0 - 100
2442830	Prallethrin	8.44	Spike	P	0 - 39
2442830	Tau-Fluvalinate	4.62	Spike	P	0 - 54
2442830	Tetramethrin	3.20	Spike	P	0 - 51
2442830	Trans-Nonachlor	1.58	Spike	P	0 - 39
2442830	Triclosan Methyl	20.7	Spike	P	0 - 31
2442830	Trifluralin	18.6	Spike	P	0 - 22
2443209	PCB-1016	5.42	Spike	P	0 - 25
2443209	PCB-1260	1.43	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P435920

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443209	Chlordane	9.22	Spike	P	0 - 28
2443209	Toxaphene	17.2	Spike	P	0 - 27

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P436358

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443462	Total Alkalinity	1.08	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P436671

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442759	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P436360

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2443462	Fluoride	0.480	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P436473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2442297	Organic Carbon	2.19	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2442825
Field Sample ID: G3SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	86.6	P	37 - 129
EPA 8270E	Decachlorobiphenyl	62.7	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	56.3	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	56.4	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	75.6	P	28 - 102
EPA 8276	PCNB	165	F	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121948

Included Lab Sample IDs: 2442816, 2442818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.4	99.2	P/P	90 - 110
Sulfate	101	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121951

Included Lab Sample IDs: 2442816, 2442818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: DEP SOP: NU-094-1

Run ID: A121952

Included Lab Sample IDs: 2442816, 2442818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.7	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A122010

Included Lab Sample IDs: 2442817, 2442819

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122061

Included Lab Sample IDs: 2442826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.6	97.5	P/P	90 - 110
Antimony	93.4	94.6	P/P	90 - 110
Arsenic	100	100	P/P	90 - 110
Barium	99.2	101	P/P	90 - 110
Beryllium	99.1	98.8	P/P	90 - 110
Cadmium	98.4	99.3	P/P	90 - 110
Cobalt	100	98.8	P/P	90 - 110
Copper	97.4	96.8	P/P	90 - 110
Lead	94.4	95.1	P/P	90 - 110
Molybdenum	97.9	98.6	P/P	90 - 110
Nickel	100	99.6	P/P	90 - 110
Selenium	99.6	102	P/P	90 - 110
Silver	98.5	99.3	P/P	90 - 110
Thallium	96.5	96.9	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A122079

Included Lab Sample IDs: 2442816, 2442818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.4	95.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A122079

Included Lab Sample IDs: 2442816, 2442818

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122103

Included Lab Sample IDs: 2442826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	101	103	P/P	90 - 110
Chromium	99.5	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122118

Included Lab Sample IDs: 2442817, 2442819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122126

Included Lab Sample IDs: 2442817, 2442819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A122134

Included Lab Sample IDs: 2442817, 2442819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.0	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122149

Included Lab Sample IDs: 2442817, 2442819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	97.0	P/P	90 - 110

Reference Method: EPA 8276

Run ID: A122163

Included Lab Sample IDs: 2442825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.1		P	80 - 120
Toxaphene	91.0		P	80 - 120

Reference Method: EPA 8270E

Run ID: A122187

Included Lab Sample IDs: 2442825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A122187
Included Lab Sample IDs: 2442825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	97.6		P	80 - 120
PCB-1260	95.2		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122190
Included Lab Sample IDs: 2442826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.5	104	P/P	90 - 110
Iron	100	99.2	P/P	90 - 110
Magnesium	99.8	98.3	P/P	90 - 110
Potassium	95.4	98.3	P/P	90 - 110
Sodium	92.9	97.0	P/P	90 - 110
Strontium	102	102	P/P	90 - 110
Titanium	104	104	P/P	90 - 110
Vanadium	103	103	P/P	90 - 110
Zinc	105	104	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122235
Included Lab Sample IDs: 2442826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	102	101	P/P	95 - 105

Reference Method: EPA 8270E
Run ID: A122254
Included Lab Sample IDs: 2442825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.4		P	80 - 120
Alpha-BHC	94.9		P	80 - 120
Alpha-Chlordane	105		P	80 - 120
Beta-BHC	95.2		P	80 - 120
Beta-Cyfluthrin	90.0		P	80 - 120
Bifenthrin	88.6		P	80 - 120
Carbophenothion	93.8		P	80 - 120
Chlorothalonil	85.0		P	80 - 120
Cis-Nonachlor	104		P	80 - 120
Cypermethrin	92.4		P	80 - 120
Dacthal	97.4		P	80 - 120
DDD-p,p'	97.1		P	80 - 120
DDE-p,p'	102		P	80 - 120
DDT-p,p'	91.5		P	80 - 120
Delta-BHC	93.9		P	80 - 120
Deltamethrin	88.8		P	80 - 120
Dichlobenil	96.8		P	80 - 120
Dicofol	98.2		P	80 - 120
Dieldrin	95.9		P	80 - 120
Endosulfan I	88.4		P	80 - 120
Endosulfan II	98.7		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A122254
Included Lab Sample IDs: 2442825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endosulfan Sulfate	110		P	80 - 120
Endrin	99.5		P	80 - 120
Endrin Aldehyde	109		P	80 - 120
Endrin Ketone	96.7		P	80 - 120
Esfenvalerate	82.4		P	80 - 120
Ethalfuralin	95.0		P	80 - 120
Fenpropathrin	92.3		P	80 - 120
Gamma-BHC	99.6		P	80 - 120
Gamma-Chlordane	106		P	80 - 120
Heptachlor	88.3		P	80 - 120
Heptachlor Epoxide	94.5		P	80 - 120
Hexachlorobenzene	85.7		P	80 - 120
Kepone	96.5		P	80 - 120
Lambda-Cyhalothrin	87.4		P	80 - 120
Methoprene	97.6		P	80 - 120
Methoxychlor	88.3		P	80 - 120
MGK-264	96.3		P	80 - 120
Mirex	108		P	80 - 120
Oxychlordane	97.3		P	80 - 120
Permethrin	88.5		P	80 - 120
Phenothrin	88.6		P	80 - 120
Piperonyl Butoxide	80.0		P	80 - 120
Prallethrin	94.0		P	80 - 120
Tau-Fluvalinate	83.1		P	80 - 120
Tetramethrin	81.6		P	80 - 120
Trans-Nonachlor	98.5		P	80 - 120
Triclosan Methyl	92.6		P	80 - 120
Trifluralin	98.7		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A122271
Included Lab Sample IDs: 2442826

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	99.6	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)	100					1.77	
EPA 180.1 Rev. 2.0	Turbidity	105					2.25	
EPA 200.7 Rev. 4.4	Calcium	102						1.26
	Iron	103		96.5	99.7			3.01
	Magnesium	101						2.35
	Manganese	100		92.9	98.5			5.00
	Potassium	98.7						1.89
	Sodium	96.3						1.84
	Strontium	101						1.78
	Tin	106		93.7	97.1			3.29
	Titanium	103		97.5	101			3.34
	Vanadium	103		101	105			3.93
	Zinc	105		100	102			1.30
EPA 200.8 Rev. 5.4	Aluminum	95.6		95.6	96.1			0.498
	Antimony	96.0		96.6	98.0			1.47
	Arsenic	96.9		103	105			1.69
	Barium	101		101	102			0.976
	Beryllium	90.9		98.4	103			4.84
	Boron	95.7		84.7	94.7			1.84
	Cadmium	98.6		93.7	95.3			1.68
	Chromium	96.7		89.0	89.7			0.770
	Cobalt	96.5		90.8	90.4			0.428
	Copper	95.4		86.7	93.8			7.35
	Lead	94.3		95.1	96.7			1.69
	Molybdenum	96.5		103	106			2.01
	Nickel	96.8		91.7	92.2			0.472
	Selenium	97.3		100	102			2.14
	Silver	106		95.7	97.7			2.10
	Thallium	98.6		99.0	101			2.34
EPA 300.0 Rev. 2.1	Chloride	99.5		105	105		0.394	
	Sulfate	95.1		96.4	105		0.904	
EPA 350.1 Rev. 2.0	Ammonia-N	103		102	102			0.183
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		102	102			0.347
EPA 353.2 Rev. 2.0	NO2NO3-N	102		96.7	97.2			0.516
EPA 365.1 Rev. 2.0	Total-P	104		98.7	98.8			0.0660
EPA 8270E	Aldrin	50.4		44.1	44.9			1.80
	Alpha-BHC	86.0		85.7	73.0			14.4
	Alpha-Chlordane	92.1		107	86.2			21.8
	Beta-BHC	109		124	115			7.46
	Beta-Cyfluthrin	70.0		69.6	67.8			2.61
	Bifenthrin	49.5		42.7	43.4			1.67
	Carbophenothion	36.4		59.5	66.2			10.8
	Chlorothalonil	124		105	130			21.3
	Cis-Nonachlor	84.7		75.4	90.2			17.9
	Cypermethrin	47.4		44.8	47.6			5.89
	Dacthal	86.6		78.5	93.1			16.1
	DDD-p,p'	59.0		55.2	63.2			13.6
	DDE-p,p'	51.5		50.3	61.3			19.8
	DDT-p,p'	63.3		59.5	69.5			15.5
	Delta-BHC	142		153	154			0.730
	Deltamethrin	81.7		88.3	91.9			4.09
	Dichlobenil	78.7		66.7	87.6			27.1
	Dicofol	77.0		76.5	80.8			5.52
	Dieldrin	59.5		55.9	62.9			11.1

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision	MS
						SMP	
EPA 8270E	Endosulfan I	66.7	59.3	69.3			14.9
	Endosulfan II	68.6	76.5	79.2			3.47
	Endosulfan Sulfate	93.4	82.9	103			21.9
	Endrin	55.5	56.7	69.6			20.5
	Endrin Aldehyde	82.4	71.1	86.8			19.9
	Endrin Ketone	91.6	88.3	102			14.3
	Esfenvalerate	80.6	79.3	81.4			2.65
	Ethalfuralin	76.2	54.1	57.2			4.73
	Fenpropathrin	60.6	54.9	66.8			19.6
	Gamma-BHC	109	100	97.0			2.98
	Gamma-Chlordane	99.4	94.3	99.0			4.51
	Heptachlor	57.3	48.4	50.0			3.32
	Heptachlor Epoxide	75.7	70.6	74.7			5.63
	Hexachlorobenzene	64.6	60.9	70.8			15.0
	Kepone	88.8	98.5	101			2.93
	Lambda-Cyhalothrin	37.2	37.1	33.7			9.85
	Methoprene	45.0	35.4	38.9			9.42
	Methoxychlor	78.7	75.8	88.5			15.5
	MGK-264	99.0	98.4	101			2.67
	Mirex	50.4	55.7	52.5			5.91
	Oxychlordane	64.7	51.5	63.2			20.5
	PCB-1016	69.2	71.0	74.9			5.42
	PCB-1260	76.3	71.2	72.2			1.43
	Permethrin	62.9	57.9	63.6			9.32
	Phenothrin	53.3	49.6	49.3			0.457
	Piperonyl Butoxide	91.1	76.2	99.2			26.2
	Prallethrin	63.1	72.1	66.2			8.44
	Tau-Fluvalinate	67.6	69.4	72.7			4.62
	Tetramethrin	72.4	69.4	71.7			3.20
	Trans-Nonachlor	64.1	65.0	66.0			1.58
	Triclosan Methyl	67.1	57.6	70.9			20.7
	Trifluralin	63.5	50.4	62.4			18.6
EPA 8276	Chlordane	90.2	73.9	81.0			9.22
	Toxaphene	85.9	71.7	85.1			17.2
SM 2320 B-2011	Total Alkalinity	96.3				1.08	
SM 2540 C-2015	TDS	97.2				0.0	
SM 2540 D-2015	TSS	98.4					
SM 4500-F- C-2011	Fluoride	100	99.9	101			0.480
SM 5310 B-2011	Organic Carbon	94.9	93.4	90.8			2.19

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2442816, 2442818
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2442816, 2442818
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2442826
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2442826
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2442816, 2442818
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2442816, 2442818
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2442817, 2442819
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2442817, 2442819

Reference Method Descriptions

Method	Description	Associated Samples
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2442817, 2442819
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2442817, 2442819
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2442825
EPA 8270E	PCBs in water matrices by GC/MS/MS	2442825
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2442825
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2442816, 2442818
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2442826
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2442816, 2442818
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2442816, 2442818
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2442816, 2442818
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2442817, 2442819

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	10/04/2023			10/04/2023 15:46	Samantha L Bates	2442816, 2442818
EPA 180.1 Rev. 2.0	10/04/2023			10/04/2023 14:53	Alexis Price	2442816
	10/04/2023			10/04/2023 14:54	Alexis Price	2442818
EPA 200.7 Rev. 4.4	10/04/2023	10/09/2023 15:15	George D Taylor	10/16/2023 22:29	McKinley C Carter	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/16/2023 22:51	McKinley C Carter	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/18/2023 17:03	Samatha Luckman	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/20/2023 23:14	Samatha Luckman	2442826
EPA 200.8 Rev. 5.4	10/04/2023	10/09/2023 15:15	George D Taylor	10/10/2023 20:03	Conrad Hartmann	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/10/2023 21:14	Conrad Hartmann	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/11/2023 15:55	Conrad Hartmann	2442826
	10/04/2023	10/09/2023 15:15	George D Taylor	10/11/2023 16:43	Conrad Hartmann	2442826
EPA 300.0 Rev. 2.1	10/04/2023			10/07/2023 05:16	James L Waggeberby	2442816
	10/04/2023			10/07/2023 05:31	James L Waggeberby	2442818
EPA 350.1 Rev. 2.0	10/04/2023			10/06/2023 13:45	Ping Hua	2442817
	10/04/2023			10/06/2023 13:59	Ping Hua	2442819
EPA 351.2 Rev. 2.0	10/04/2023	10/11/2023 12:38	Ping Hua	10/12/2023 12:51	Ping Hua	2442817
	10/04/2023	10/11/2023 12:38	Ping Hua	10/12/2023 12:52	Ping Hua	2442819
EPA 353.2 Rev. 2.0	10/04/2023			10/12/2023 14:32	Fadila Guebre	2442817
	10/04/2023			10/12/2023 14:33	Fadila Guebre	2442819
EPA 365.1 Rev. 2.0	10/04/2023	10/11/2023 13:38	Adam P Silver	10/13/2023 13:05	James L Waggeberby	2442817
	10/04/2023	10/11/2023 13:38	Adam P Silver	10/13/2023 13:06	James L Waggeberby	2442819
EPA 8270E	10/04/2023	10/09/2023 08:00	Fe-Val Siddell	10/12/2023 05:07	Julie Wi	2442825
	10/04/2023	10/09/2023 08:00	Fe-Val Siddell	10/18/2023 02:24	Julie Wi	2442825
EPA 8276	10/04/2023	10/09/2023 08:00	Fe-Val Siddell	10/12/2023 13:45	Lipi Saha	2442825
SM 2320 B-2011	10/04/2023			10/10/2023 04:11	Dale L. Simmons	2442816
	10/04/2023			10/10/2023 04:25	Dale L. Simmons	2442818
SM 2340 B-2011	10/04/2023			10/16/2023 22:51	McKinley C Carter	2442826
SM 2540 C-2015	10/04/2023			10/09/2023 15:48	Yijie Li	2442816, 2442818
SM 2540 D-2015	10/04/2023			10/09/2023 15:48	Yijie Li	2442816, 2442818
SM 4500-F- C-2011	10/04/2023			10/10/2023 02:31	Dale L. Simmons	2442816
	10/04/2023			10/10/2023 02:36	Dale L. Simmons	2442818
SM 5310 B-2011	10/04/2023			10/13/2023 03:54	Elise M. Gillis	2442817
	10/04/2023			10/13/2023 04:31	Elise M. Gillis	2442819