

Chemical Analysis Report

SW-DIST-2023-11-17-01

Florida DEP Laboratory
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Tallahassee, FL 32399-2400
DOH Accreditation E31780

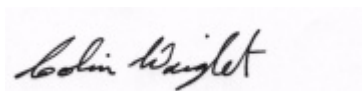
Event Description: **Sarasota Run Run 17**
Request ID: **RQ-2023-11-13-28**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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FL Dept. of Environmental Protection
13051 N. Telecom Parkway
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Certified by: Colin Wright, Program Administrator

Date Certified: 14-DEC-2023 11:57



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: 11/16/2023 09:55

Field ID: G3SW0108

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452201	DEP SOP: NU-094-1	Color (true)	7.7	A	PCU	P437980	
	EPA 180.1 Rev. 2.0	Turbidity	8.6		NTU	P437981	
	EPA 300.0 Rev. 2.1	Chloride	2.0E+04		mg Cl/L	P438318	
		Sulfate	2.7E+03		mg SO4/L	P438321	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P438165	
	SM 2540 C-2015	TDS	3.18E+04		mg/L	P438382	
	SM 2540 D-2015	TSS	5	I	mg/L	P438373	
	SM 4500-F- C-2011	Fluoride	1.2		mg F/L	P438167	
2452202	EPA 350.1 Rev. 2.0	Ammonia-N	0.095		mg N/L	P438501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.68		mg N/L	P438032	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P438185	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P438120	
	SM 5310 B-2011	Organic Carbon	4.4		mg C/L	P438155	

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: ISLAND PARK BOAT BASIN OFF DOCK

Collection Date/Time: 11/16/2023 10:15

Field ID: G3SW0061

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452199	DEP SOP: NU-094-1	Color (true)	2.5	U	PCU	P437980	
	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P437981	
	EPA 300.0 Rev. 2.1	Chloride	2.1E+04		mg Cl/L	P438318	
		Sulfate	3.0E+03		mg SO4/L	P438321	
	SM 2320 B-2011	Total Alkalinity	121		mg CaCO3/L	P438165	
	SM 2540 C-2015	TDS	3.52E+04		mg/L	P438382	
	SM 2540 D-2015	TSS	3	I	mg/L	P438373	
2452200	SM 4500-F- C-2011	Fluoride	1.3		mg F/L	P438167	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P438501	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.54		mg N/L	P438032	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P438185	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P438120	
2452215	SM 5310 B-2011	Organic Carbon	3.8	I	mg C/L	P438155	
	EPA 200.7 Rev. 4.4	Calcium	400		mg/L	P438062	
		Iron	120	U	ug/L	P438062	
		Magnesium	1.22E+03		mg/L	P438062	
		Potassium	377		mg/L	P438062	
		Sodium	1.04E+04		mg/L	P438062	
		Strontium	7.84E+03		ug/L	P438062	
		Tin	30	U	ug/L	P438062	
		Titanium	5.8	I	ug/L	P438062	
		Vanadium	10	U	ug/L	P438062	
		Zinc	25	U	ug/L	P438062	
	EPA 200.8 Rev. 5.4	Aluminum	110		ug/L	P438062	
		Antimony	0.24	I	ug/L	P438062	
		Arsenic	2.68		ug/L	P438062	
		Barium	11.6		ug/L	P438062	
		Beryllium	0.040	U	ug/L	P438062	
		Boron	4.17E+03		ug/L	P438062	
		Cadmium	0.080	U	ug/L	P438062	
		Chromium	4.0	U	ug/L	P438062	
		Cobalt	0.080	U	ug/L	P438062	
		Copper	3.3		ug/L	P438062	
		Lead	2.0	U	ug/L	P438062	
		Manganese	3.1	I	ug/L	P438062	
		Molybdenum	14.2		ug/L	P438062	
		Nickel	2.0	U	ug/L	P438062	
		Selenium	0.80	U	ug/L	P438062	
		Silver	0.040	U	ug/L	P438062	
		Thallium	1.0	U	ug/L	P438062	
	SM 2340 B-2011	Hardness	6.02E+03		mg/L	P438062	

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: Batch matrix spike recoveries for boron are unavailable because of high analyte concentration in the QC sample.

**Sample Location: WHITAKER BAYOU AT RINGLING COLLEGE
OF ART**

Collection Date/Time: 11/16/2023 10:45

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452214	EPA 8270E	Aldrin	0.66	U	ng/L	P438105	
		Alpha-BHC	0.10	U	ng/L	P438105	MS
		Alpha-Chlordane	0.20	U	ng/L	P438105	
		PCB-1016	2.0	U	ng/L	P438105	
		Beta-BHC	0.10	U	ng/L	P438105	
		PCB-1221	2.0	U	ng/L	P438105	
		Beta-Cyfluthrin	1.3	U	ng/L	P438105	MS
		PCB-1232	2.0	U	ng/L	P438105	
		Bifenthrin	0.51	U	ng/L	P438105	
		PCB-1242	2.0	U	ng/L	P438105	
		Carbophenothion	0.92	U	ng/L	P438105	
		PCB-1248	2.0	U	ng/L	P438105	
		Chlorothalonil	3.7	U	ng/L	P438105	
		PCB-1254	2.0	U	ng/L	P438105	
		Cis-Nonachlor	0.20	U	ng/L	P438105	
		PCB-1260	2.0	U	ng/L	P438105	
		Cypermethrin	1.5	U	ng/L	P438105	
		Dacthal	0.15	UJ	ng/L	P438105	LCS
		DDD-p,p'	0.26	U	ng/L	P438105	
		DDE-p,p'	0.20	U	ng/L	P438105	
		DDT-p,p'	0.82	U	ng/L	P438105	
		Delta-BHC	0.41	UJ	ng/L	P438105	LCS
		Deltamethrin	1.3	U	ng/L	P438105	
		Dichlobenil	0.26	U	ng/L	P438105	
		Dicofol	1.3	U	ng/L	P438105	
		Dieldrin	0.41	UJ	ng/L	P438105	LCS
		Endosulfan I	0.41	U	ng/L	P438105	
		Endosulfan II	0.92	U	ng/L	P438105	
		Endosulfan Sulfate	0.31	U	ng/L	P438105	
		Endrin	0.92	U	ng/L	P438105	
		Endrin Aldehyde	0.77	U	ng/L	P438105	
		Endrin Ketone	0.41	U	ng/L	P438105	MS
		Esfenvalerate	0.77	U	ng/L	P438105	
		Ethalfuralin	0.15	UJ	ng/L	P438105	LCS, MS
		Fenpropathrin	0.26	U	ng/L	P438105	
		Gamma-BHC	0.13	UJ	ng/L	P438105	LCS, MS
		Gamma-Chlordane	0.20	U	ng/L	P438105	
		Heptachlor	0.20	U	ng/L	P438105	
		Heptachlor Epoxide	0.26	UJ	ng/L	P438105	LCS
		Hexachlorobenzene**	1.0	U	ng/L	P438105	
		Kepone	14	U	ng/L	P438105	
		Lambda-Cyhalothrin	0.77	U	ng/L	P438105	
		Methoprene	0.77	U	ng/L	P438105	

Field ID: G3SW0060

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2452214	EPA 8270E	Methoxychlor	0.31	U	ng/L	P438105	
		MGK-264	0.20	U	ng/L	P438105	
		Mirex	0.36	U	ng/L	P438105	
		Oxychlordan	0.31	UJ	ng/L	P438105	
		Permethrin	1.6	U	ng/L	P438105	
		Phenothrin	0.92	U	ng/L	P438105	LCS, MS
		Piperonyl Butoxide	0.61	I	ng/L	P438105	
		Prallethrin	2.0	U	ng/L	P438105	
		Tau-Fluvalinate	0.26	U	ng/L	P438105	
		Tetramethrin	0.77	U	ng/L	P438105	
		Trans-Nonachlor	0.20	U	ng/L	P438105	LCS, MS
		Triclosan Methyl	0.15	UJ	ng/L	P438105	
		Trifluralin	0.20	UJ	ng/L	P438105	
		Chlordane	2.0	U	ng/L	P438105	
		Toxaphene	15	U	ng/L	P438105	
	EPA 8276						

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: DEP SOP: NU-094-1
Batch ID: P437980

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437981

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438062

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438062

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.012	I	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438318

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: P438321

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438501

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438032

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438185

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438120

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

Reference Method: EPA 8270E
Batch ID: P438105

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: P438105

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: P438105

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

Reference Method: SM 2320 B-2011

Batch ID: P438165

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

Reference Method: SM 2540 C-2015

Batch ID: P438382

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P438382

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P438373

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P438167

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P438155

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: P437980

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437981

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	99.5		P	85 - 115
Magnesium	99.3		P	85 - 115
Potassium	97.9		P	85 - 115
Sodium	101		P	85 - 115
Strontium	97.5		P	85 - 115
Tin	94.4		P	85 - 115
Titanium	95.5		P	85 - 115
Vanadium	96.5		P	85 - 115
Zinc	94.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438062

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	105		P	85 - 115
Arsenic	103		P	85 - 115
Barium	105		P	85 - 115
Beryllium	94.1		P	85 - 115
Boron	104		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	104		P	85 - 115
Cobalt	102		P	85 - 115
Copper	100		P	85 - 115
Lead	98.4		P	85 - 115
Manganese	102		P	85 - 115
Molybdenum	103		P	85 - 115
Nickel	101		P	85 - 115
Selenium	105		P	85 - 115
Silver	108		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438318

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438321

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438501

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438032

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: P438185

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438120

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

Reference Method: EPA 8270E
Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	42.0		P	30 - 96.0
Alpha-BHC	71.4		P	70 - 109
Alpha-Chlordane	45.7		P	45 - 107
Beta-BHC	76.6		P	64 - 138
Beta-Cyfluthrin	126		P	17 - 141
Bifenthrin	27.6		P	10 - 113
Carbophenothion	38.7		P	24 - 91.0
Chlorothalonil	70.4		P	26 - 180
Cis-Nonachlor	43.4		P	37 - 102
Cypermethrin	45.8		P	20 - 133
Dacthal	68.6		F	69 - 114
DDD-p,p'	43.1		P	42 - 105
DDE-p,p'	49.3		P	42 - 106
DDT-p,p'	50.5		P	42 - 107
Delta-BHC	64.7		F	67 - 144
Deltamethrin	63.6		P	15 - 149
Dichlobenil	54.0		P	46 - 117
Dicofol	55.9		P	34 - 114
Dieldrin	48.0		F	50 - 108
Endosulfan I	56.9		P	55 - 104
Endosulfan II	65.4		P	51 - 111
Endosulfan Sulfate	65.6		P	56 - 121

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Endrin	43.0		P	10 - 106
Endrin Aldehyde	37.8		P	34 - 114
Endrin Ketone	160		P	63 - 177
Esfenvalerate	52.6		P	29 - 143
Ethalfuralin	36.6		F	46 - 96.0
Fenpropathrin	47.1		P	28 - 115
Gamma-BHC	58.1		F	65 - 121
Gamma-Chlordane	39.0		P	39 - 103
Heptachlor	45.0		P	39 - 94.0
Heptachlor Epoxide	42.8		F	54 - 104
Hexachlorobenzene	36.5		P	36 - 100
Kepone	74.6		P	10 - 225
Lambda-Cyhalothrin	32.7		P	10 - 135
Methoprene	53.7		P	10 - 109
Methoxychlor	55.8		P	52 - 112
MGK-264	64.0		P	44 - 117
Mirex	24.0		P	20 - 90.0
Oxychlordane	127		F	44 - 102
PCB-1016	63.5		P	45 - 107
PCB-1260	76.2		P	40 - 118
Permethrin	36.9		P	18 - 135
Phenothrin	37.3		P	10 - 102
Piperonyl Butoxide	57.5		P	28 - 156
Prallethrin	51.8		P	28 - 113
Tau-Fluvalinate	52.7		P	10 - 123
Tetramethrin	58.8		P	18 - 158
Trans-Nonachlor	43.8		P	39 - 104
Triclosan Methyl	134		F	54 - 108
Trifluralin	34.0		F	46 - 97.0

Reference Method: EPA 8276

Batch ID: P438105

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	56.7		P	52 - 117
Toxaphene	62.1		P	44 - 125

Reference Method: SM 2320 B-2011

Batch ID: P438165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.5		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P438382

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	96.4		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P438373

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	97.6		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P438167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451742	Iron	90.5	91.8	P/P	70 - 130
2451742	Tin	76.5	79.1	P/P	70 - 130
2451742	Titanium	90.7	97.8	P/P	70 - 130
2451742	Vanadium	97.7	99.9	P/P	70 - 130
2451742	Zinc	93.0	94.8	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451742	Aluminum	110	113	P/P	70 - 130
2451742	Antimony	104	104	P/P	70 - 130
2451742	Arsenic	116	115	P/P	70 - 130
2451742	Barium	107	105	P/P	70 - 130
2451742	Beryllium	97.4	97.7	P/P	70 - 130
2451742	Cadmium	96.5	97.2	P/P	70 - 130
2451742	Chromium	97.9	98.4	P/P	70 - 130
2451742	Cobalt	94.0	93.2	P/P	70 - 130
2451742	Copper	88.3	88.5	P/P	70 - 130
2451742	Lead	107	105	P/P	70 - 130
2451742	Manganese	89.5	89.0	P/P	70 - 130
2451742	Molybdenum	120	117	P/P	70 - 130
2451742	Nickel	96.9	95.4	P/P	70 - 130
2451742	Selenium	105	104	P/P	70 - 130
2451742	Silver	99.8	98.1	P/P	70 - 130
2451742	Thallium	113	114	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438318

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452389	Chloride	104		P	90 - 110
2452437	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438321

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452389	Sulfate	105		P	90 - 110
2452437	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438501

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452160	Ammonia-N	99.6	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438032

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2450283	Kjeldahl Nitrogen	109	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438185

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452200	NO2NO3-N	101	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438120

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452154	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452172	Aldrin	46.1	53.6	P/P	24 - 81.0
2452172	Alpha-BHC	64.2	72.6	F/P	65 - 110
2452172	Alpha-Chlordane	56.5	55.7	P/P	43 - 119
2452172	Beta-BHC	58.7	54.3	P/P	54 - 165
2452172	Beta-Cyfluthrin	190	205	F/F	27 - 165
2452172	Bifenthrin	30.8	35.5	P/P	17 - 117
2452172	Carbophenothion	48.2	44.9	P/P	21 - 108
2452172	Chlorothalonil	95.4	132	P/P	10 - 255
2452172	Cis-Nonachlor	46.5	50.6	P/P	34 - 98.0
2452172	Cypermethrin	44.0	58.3	P/P	25 - 143
2452172	Dacthal	64.7	68.2	P/P	55 - 139
2452172	DDD-p,p'	49.6	47.6	P/P	30 - 109
2452172	DDE-p,p'	60.8	54.4	P/P	35 - 106
2452172	DDT-p,p'	46.6	55.3	P/P	41 - 101
2452172	Delta-BHC	64.4	61.6	P/P	58 - 165
2452172	Deltamethrin	60.0	82.7	P/P	10 - 194
2452172	Dichlobenil	52.7	43.6	P/P	22 - 114
2452172	Dicofol	61.6	63.4	P/P	17 - 133
2452172	Dieldrin	58.6	55.4	P/P	45 - 129
2452172	Endosulfan I	62.4	63.3	P/P	49 - 104
2452172	Endosulfan II	67.1	69.1	P/P	37 - 117
2452172	Endosulfan Sulfate	68.2	71.9	P/P	38 - 128
2452172	Endrin	55.9	51.1	P/P	35 - 116
2452172	Endrin Aldehyde	40.4	39.0	P/P	19 - 108
2452172	Endrin Ketone	261	215	F/F	44 - 134
2452172	Esfenvalerate	50.6	65.3	P/P	27 - 176
2452172	Ethalfuralin	40.0	36.1	F/F	49 - 100
2452172	Fenpropathrin	42.6	56.3	P/P	34 - 117
2452172	Gamma-BHC	62.1	54.0	P/F	59 - 129
2452172	Gamma-Chlordane	55.5	51.8	P/P	33 - 107
2452172	Heptachlor	51.6	57.3	P/P	37 - 94.0
2452172	Heptachlor Epoxide	41.7	43.8	P/P	38 - 118
2452172	Hexachlorobenzene	42.8	38.9	P/P	35 - 97.0
2452172	Kepone	82.2	93.4	P/P	10 - 221
2452172	Lambda-Cyhalothrin	34.5	44.2	P/P	23 - 190
2452172	Methoprene	50.9	58.5	P/P	21 - 109
2452172	Methoxychlor	50.4	61.9	P/P	46 - 118
2452172	MGK-264	64.8	62.3	P/P	39 - 122
2452172	Mirex	26.9	32.4	P/P	25 - 90.0
2452172	Oxychlordane	201	172	F/F	42 - 100

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452172	Permethrin	38.0	46.1	P/P	33 - 181
2452172	Phenothrin	46.2	44.3	P/P	12 - 125
2452172	Piperonyl Butoxide	45.2	54.6	P/P	10 - 178
2452172	Prallethrin	56.5	49.4	P/P	24 - 122
2452172	Tau-Fluvalinate	50.2	71.0	P/P	13 - 151
2452172	Tetramethrin	51.0	58.4	P/P	16 - 172
2452172	Trans-Nonachlor	61.4	54.9	P/P	39 - 100
2452172	Triclosan Methyl	173	169	F/F	43 - 110
2452172	Trifluralin	46.5	45.3	P/P	45 - 94.0
2452203	PCB-1016	69.8	63.5	P/P	45 - 107
2452203	PCB-1260	92.8	74.3	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P438105

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452203	Chlordane	66.2	65.4	P/P	43 - 123
2452203	Toxaphene	76.0	79.6	P/P	27 - 156

Reference Method: SM 4500-F- C-2011
Batch ID: P438167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2452153	Fluoride	99.7	101	P/P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P438155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2451949	Organic Carbon	85.3	87.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P437980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452201	Color (true)	9.49	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P437981

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452075	Turbidity	0.324	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P438062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451742	Calcium	2.47	Spike	P	0 - 20
2451742	Iron	1.27	Spike	P	0 - 20
2451742	Magnesium	2.25	Spike	P	0 - 20
2451742	Potassium	3.36	Spike	P	0 - 20
2451742	Sodium	3.52	Spike	P	0 - 20
2451742	Strontium	1.64	Spike	P	0 - 20
2451742	Tin	3.37	Spike	P	0 - 20
2451742	Titanium	6.60	Spike	P	0 - 20
2451742	Vanadium	2.18	Spike	P	0 - 20
2451742	Zinc	1.91	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P438062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451742	Aluminum	1.84	Spike	P	0 - 20
2451742	Antimony	0.869	Spike	P	0 - 20
2451742	Arsenic	1.44	Spike	P	0 - 20
2451742	Barium	1.52	Spike	P	0 - 20
2451742	Beryllium	0.326	Spike	P	0 - 20
2451742	Boron	2.49	Spike	P	0 - 20
2451742	Cadmium	0.734	Spike	P	0 - 20
2451742	Chromium	0.498	Spike	P	0 - 20
2451742	Cobalt	0.883	Spike	P	0 - 20
2451742	Copper	0.204	Spike	P	0 - 20
2451742	Lead	1.35	Spike	P	0 - 20
2451742	Manganese	0.404	Spike	P	0 - 20
2451742	Molybdenum	1.83	Spike	P	0 - 20
2451742	Nickel	1.53	Spike	P	0 - 20
2451742	Selenium	1.03	Spike	P	0 - 20
2451742	Silver	1.70	Spike	P	0 - 20
2451742	Thallium	0.909	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438318

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452389	Chloride	1.31	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P438321

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452389	Sulfate	2.33	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P438501

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452160	Ammonia-N	1.69	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P438032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2450283	Kjeldahl Nitrogen	5.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P438185

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452200	NO2NO3-N	2.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P438120

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452154	Total-P	0.144	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452172	Aldrin	14.9	Spike	P	0 - 41
2452172	Alpha-BHC	12.3	Spike	P	0 - 25
2452172	Alpha-Chlordane	1.39	Spike	P	0 - 32
2452172	Beta-BHC	7.66	Spike	P	0 - 33
2452172	Beta-Cyfluthrin	7.75	Spike	P	0 - 43
2452172	Bifenthrin	14.4	Spike	P	0 - 52
2452172	Carbophenothion	7.11	Spike	P	0 - 49
2452172	Chlorothalonil	32.1	Spike	P	0 - 82
2452172	Cis-Nonachlor	8.34	Spike	P	0 - 33

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452172	Cypermethrin	28.0	Spike	P	0 - 51
2452172	Dacthal	5.23	Spike	P	0 - 27
2452172	DDD-p,p'	4.23	Spike	P	0 - 39
2452172	DDE-p,p'	11.1	Spike	P	0 - 31
2452172	DDT-p,p'	17.0	Spike	P	0 - 29
2452172	Delta-BHC	4.54	Spike	P	0 - 35
2452172	Deltamethrin	31.7	Spike	P	0 - 100
2452172	Dichlobenil	18.9	Spike	P	0 - 40
2452172	Dicofol	2.84	Spike	P	0 - 37
2452172	Dieldrin	5.58	Spike	P	0 - 27
2452172	Endosulfan I	1.46	Spike	P	0 - 23
2452172	Endosulfan II	2.95	Spike	P	0 - 34
2452172	Endosulfan Sulfate	5.30	Spike	P	0 - 36
2452172	Endrin	8.90	Spike	P	0 - 45
2452172	Endrin Aldehyde	3.64	Spike	P	0 - 76
2452172	Endrin Ketone	19.0	Spike	P	0 - 43
2452172	Esfenvalerate	25.5	Spike	P	0 - 51
2452172	Ethalfuralin	10.2	Spike	P	0 - 22
2452172	Fenpropathrin	27.8	Spike	P	0 - 49
2452172	Gamma-BHC	14.0	Spike	P	0 - 28
2452172	Gamma-Chlordane	6.90	Spike	P	0 - 40
2452172	Heptachlor	10.4	Spike	P	0 - 29
2452172	Heptachlor Epoxide	4.89	Spike	P	0 - 33
2452172	Hexachlorobenzene	9.66	Spike	P	0 - 36
2452172	Kepone	12.7	Spike	P	0 - 85
2452172	Lambda-Cyhalothrin	24.8	Spike	P	0 - 55
2452172	Methoprene	13.9	Spike	P	0 - 53
2452172	Methoxychlor	20.5	Spike	P	0 - 50
2452172	MGK-264	4.06	Spike	P	0 - 43
2452172	Mirex	18.8	Spike	P	0 - 40
2452172	Oxychlordane	15.4	Spike	P	0 - 31
2452172	Permethrin	19.1	Spike	P	0 - 50
2452172	Phenothrin	4.19	Spike	P	0 - 58
2452172	Piperonyl Butoxide	17.3	Spike	P	0 - 100
2452172	Prallethrin	13.5	Spike	P	0 - 39
2452172	Tau-Fluvalinate	34.3	Spike	P	0 - 54
2452172	Tetramethrin	13.4	Spike	P	0 - 51
2452172	Trans-Nonachlor	11.2	Spike	P	0 - 39
2452172	Triclosan Methyl	2.41	Spike	P	0 - 31
2452172	Trifluralin	2.58	Spike	P	0 - 22
2452203	PCB-1016	9.47	Spike	P	0 - 25
2452203	PCB-1260	22.2	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P438105

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452203	Chlordane	1.15	Spike	P	0 - 28
2452203	Toxaphene	4.65	Spike	P	0 - 27

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P438165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452153	Total Alkalinity	1.40	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P438382

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452502	TDS	2.93	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P438167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2452153	Fluoride	0.986	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P438155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2451949	Organic Carbon	1.48	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2452214

Field Sample ID: G3SW0060

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	62.6	P	37 - 129
EPA 8270E	Decachlorobiphenyl	37.1	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	54.5	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	31.9	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	45.0	P	28 - 102
EPA 8276	PCNB	79.9	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A122801

Included Lab Sample IDs: 2452199, 2452201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A122805

Included Lab Sample IDs: 2452199, 2452201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: SM 5310 B-2011

Run ID: A122876

Included Lab Sample IDs: 2452200, 2452202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	95.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122877

Included Lab Sample IDs: 2452215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	97.9	94.5	P/P	90 - 110
Iron	94.0	90.3	P/P	90 - 110
Magnesium	93.7	90.3	P/P	90 - 110
Potassium	95.5	92.3	P/P	90 - 110
Sodium	96.1	92.9	P/P	90 - 110
Strontium	94.3	95.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122880

Included Lab Sample IDs: 2452215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	107	105	P/P	90 - 110
Antimony	103	104	P/P	90 - 110
Arsenic	106	106	P/P	90 - 110
Barium	104	104	P/P	90 - 110
Beryllium	104	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	104	104	P/P	90 - 110
Cobalt	103	103	P/P	90 - 110
Copper	104	103	P/P	90 - 110
Lead	98.6	99.5	P/P	90 - 110
Manganese	102	102	P/P	90 - 110
Molybdenum	103	103	P/P	90 - 110
Nickel	104	105	P/P	90 - 110
Selenium	104	104	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	102	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A122884

Included Lab Sample IDs: 2452199, 2452201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.0	101	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A122884

Included Lab Sample IDs: 2452199, 2452201

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A122887

Included Lab Sample IDs: 2452200, 2452202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122891

Included Lab Sample IDs: 2452200, 2452202

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122892

Included Lab Sample IDs: 2452200, 2452202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	99.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A122898

Included Lab Sample IDs: 2452215

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122921

Included Lab Sample IDs: 2452215

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	101	105	P/P	95 - 105
Titanium	99.5	104	P/P	95 - 105
Vanadium	100	104	P/P	95 - 105
Zinc	100	105	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A122949

Included Lab Sample IDs: 2452199, 2452201

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A123027

Included Lab Sample IDs: 2452200, 2452202

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.6	99.9	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A123074

Included Lab Sample IDs: 2452214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	91.7		P	80 - 120
PCB-1260	107		P	80 - 120

Reference Method: EPA 8270E

Run ID: A123139

Included Lab Sample IDs: 2452214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	114		P	80 - 120
Alpha-BHC	97.9		P	80 - 120
Alpha-Chlordane	100		P	80 - 120
Beta-BHC	94.1		P	80 - 120
Beta-Cyfluthrin	99.9		P	80 - 120
Bifenthrin	101		P	80 - 120
Carbophenothion	101		P	80 - 120
Chlorothalonil	100		P	80 - 120
Cis-Nonachlor	101		P	80 - 120
Cypermethrin	102		P	80 - 120
Dacthal	95.3		P	80 - 120
DDD-p,p'	98.5		P	80 - 120
DDE-p,p'	107		P	80 - 120
DDT-p,p'	93.2		P	80 - 120
Delta-BHC	95.7		P	80 - 120
Deltamethrin	97.9		P	80 - 120
Dichlobenil	89.2		P	80 - 120
Dicofol	90.3		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	98.5		P	80 - 120
Endosulfan II	97.7		P	80 - 120
Endosulfan Sulfate	101		P	80 - 120
Endrin	98.1		P	80 - 120
Endrin Aldehyde	101		P	80 - 120
Endrin Ketone	102		P	80 - 120
Esfenvalerate	99.7		P	80 - 120
Ethalfuralin	90.4		P	80 - 120
Fenpropathrin	103		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A123139
Included Lab Sample IDs: 2452214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Gamma-BHC	94.0		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	119		P	80 - 120
Heptachlor Epoxide	106		P	80 - 120
Hexachlorobenzene	99.7		P	80 - 120
Kepone	91.9		P	80 - 120
Lambda-Cyhalothrin	102		P	80 - 120
Methoprene	95.8		P	80 - 120
Methoxychlor	104		P	80 - 120
MGK-264	95.8		P	80 - 120
Mirex	99.8		P	80 - 120
Oxychlordane	108		P	80 - 120
Permethrin	98.9		P	80 - 120
Phenothrin	95.3		P	80 - 120
Piperonyl Butoxide	102		P	80 - 120
Prallethrin	98.3		P	80 - 120
Tau-Fluvalinate	105		P	80 - 120
Tetramethrin	101		P	80 - 120
Trans-Nonachlor	105		P	80 - 120
Triclosan Methyl	109		P	80 - 120
Trifluralin	103		P	80 - 120

Reference Method: EPA 8276
Run ID: A123154
Included Lab Sample IDs: 2452214

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	91.1		P	80 - 120
Toxaphene	89.6		P	80 - 120

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	101				9.49	
EPA 180.1 Rev. 2.0	Turbidity	104				0.324	
EPA 200.7 Rev. 4.4	Calcium	101					2.47
	Iron	99.5	90.5	91.8			1.27
	Magnesium	99.3					2.25
	Potassium	97.9					3.36
	Sodium	101					3.52
	Strontium	97.5					1.64
	Tin	94.4	76.5	79.1			3.37
	Titanium	95.5	90.7	97.8			6.60
	Vanadium	96.5	97.7	99.9			2.18
	Zinc	94.8	93.0	94.8			1.91
EPA 200.8 Rev. 5.4	Aluminum	102	110	113			1.84
	Antimony	105	104	104			0.869
	Arsenic	103	116	115			1.44
	Barium	105	107	105			1.52
	Beryllium	94.1	97.4	97.7			0.326
	Boron	104					2.49
	Cadmium	103	96.5	97.2			0.734
	Chromium	104	97.9	98.4			0.498
	Cobalt	102	94.0	93.2			0.883
	Copper	100	88.3	88.5			0.204
	Lead	98.4	107	105			1.35
	Manganese	102	89.5	89.0			0.404
	Molybdenum	103	120	117			1.83
	Nickel	101	96.9	95.4			1.53
	Selenium	105	105	104			1.03
	Silver	108	99.8	98.1			1.70
	Thallium	104	113	114			0.909
EPA 300.0 Rev. 2.1	Chloride	106	104	106		1.31	
	Sulfate	108	105	107		2.33	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	99.6	102			1.69
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	109	103			5.47
EPA 353.2 Rev. 2.0	NO2NO3-N	100	101	104			2.14
EPA 365.1 Rev. 2.0	Total-P	105	105	104			0.144
EPA 8270E	Aldrin	42.0	46.1	53.6			14.9
	Alpha-BHC	71.4	64.2	72.6			12.3
	Alpha-Chlordane	45.7	56.5	55.7			1.39
	Beta-BHC	76.6	58.7	54.3			7.66
	Beta-Cyfluthrin	126	190	205			7.75
	Bifenthrin	27.6	30.8	35.5			14.4
	Carbophenothion	38.7	48.2	44.9			7.11
	Chlorothalonil	70.4	95.4	132			32.1
	Cis-Nonachlor	43.4	46.5	50.6			8.34
	Cypermethrin	45.8	44.0	58.3			28.0
	Dacthal	68.6	64.7	68.2			5.23
	DDD-p,p'	43.1	49.6	47.6			4.23
	DDE-p,p'	49.3	60.8	54.4			11.1
	DDT-p,p'	50.5	46.6	55.3			17.0
	Delta-BHC	64.7	64.4	61.6			4.54
	Deltamethrin	63.6	60.0	82.7			31.7
	Dichlobenil	54.0	52.7	43.6			18.9
	Dicofol	55.9	61.6	63.4			2.84
	Dieldrin	48.0	58.6	55.4			5.58

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	MS
			LCS	SMP		
EPA 8270E	Endosulfan I	56.9	62.4	63.3		1.46
	Endosulfan II	65.4	67.1	69.1		2.95
	Endosulfan Sulfate	65.6	68.2	71.9		5.30
	Endrin	43.0	55.9	51.1		8.90
	Endrin Aldehyde	37.8	40.4	39.0		3.64
	Endrin Ketone	160	261	215		19.0
	Esfenvalerate	52.6	50.6	65.3		25.5
	Ethalfuralin	36.6	40.0	36.1		10.2
	Fenpropathrin	47.1	42.6	56.3		27.8
	Gamma-BHC	58.1	62.1	54.0		14.0
	Gamma-Chlordane	39.0	55.5	51.8		6.90
	Heptachlor	45.0	51.6	57.3		10.4
	Heptachlor Epoxide	42.8	41.7	43.8		4.89
	Hexachlorobenzene	36.5	42.8	38.9		9.66
	Kepone	74.6	82.2	93.4		12.7
	Lambda-Cyhalothrin	32.7	34.5	44.2		24.8
	Methoprene	53.7	50.9	58.5		13.9
	Methoxychlor	55.8	50.4	61.9		20.5
	MGK-264	64.0	64.8	62.3		4.06
	Mirex	24.0	26.9	32.4		18.8
	Oxychlordane	127	201	172		15.4
	PCB-1016	63.5	69.8	63.5		9.47
	PCB-1260	76.2	92.8	74.3		22.2
	Permethrin	36.9	38.0	46.1		19.1
	Phenothrin	37.3	46.2	44.3		4.19
	Piperonyl Butoxide	57.5	45.2	54.6		17.3
	Prallethrin	51.8	56.5	49.4		13.5
	Tau-Fluvalinate	52.7	50.2	71.0		34.3
	Tetramethrin	58.8	51.0	58.4		13.4
	Trans-Nonachlor	43.8	61.4	54.9		11.2
	Triclosan Methyl	134	173	169		2.41
	Trifluralin	34.0	46.5	45.3		2.58
EPA 8276	Chlordane	56.7	66.2	65.4		1.15
	Toxaphene	62.1	76.0	79.6		4.65
SM 2320 B-2011	Total Alkalinity	98.5			1.40	
SM 2540 C-2015	TDS	96.4			2.93	
SM 2540 D-2015	TSS	97.6				
SM 4500-F- C-2011	Fluoride	98.7	99.7	101		0.986
SM 5310 B-2011	Organic Carbon	96.4	85.3	87.3		1.48

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2452199, 2452201
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2452199, 2452201
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2452215
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2452215
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2452199, 2452201
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2452199, 2452201
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2452200, 2452202
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2452200, 2452202

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2452200, 2452202
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2452200, 2452202
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2452214
EPA 8270E	PCBs in water matrices by GC/MS/MS	2452214
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2452214
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2452199, 2452201
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2452215
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2452199, 2452201
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2452199, 2452201
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2452199, 2452201
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2452200, 2452202

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	11/17/2023			11/17/2023 13:50	Anna M. Plaviak	2452199
	11/17/2023			11/17/2023 13:52	Anna M. Plaviak	2452201
EPA 180.1 Rev. 2.0	11/17/2023			11/17/2023 13:04	Chandler E Cox	2452199
	11/17/2023			11/17/2023 13:05	Chandler E Cox	2452201
EPA 200.7 Rev. 4.4	11/17/2023	11/20/2023 12:25	George D Taylor	11/21/2023 23:16	Samatha Luckman	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/21/2023 23:26	Samatha Luckman	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/21/2023 23:34	Samatha Luckman	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/28/2023 16:33	Samatha Luckman	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/28/2023 16:41	Samatha Luckman	2452215
EPA 200.8 Rev. 5.4	11/17/2023	11/20/2023 12:25	George D Taylor	11/21/2023 17:13	Emily M Philpot	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/21/2023 19:16	Emily M Philpot	2452215
	11/17/2023	11/20/2023 12:25	George D Taylor	11/27/2023 17:14	Conrad Hartmann	2452215
	11/17/2023			11/28/2023 13:49	James L Waggeberby	2452199
EPA 300.0 Rev. 2.1	11/17/2023			11/28/2023 14:04	James L Waggeberby	2452201
	11/17/2023			12/05/2023 14:46	Ping Hua	2452200
EPA 350.1 Rev. 2.0	11/17/2023			12/05/2023 14:47	Ping Hua	2452202
	11/17/2023	11/20/2023 21:15	Simonne.V. Calhoun	11/27/2023 13:40	Ping Hua	2452200
EPA 351.2 Rev. 2.0	11/17/2023	11/20/2023 21:15	Simonne.V. Calhoun	11/27/2023 13:42	Ping Hua	2452202
	11/17/2023			11/27/2023 13:30	Fadila Guebre	2452200
EPA 353.2 Rev. 2.0	11/17/2023			11/27/2023 13:39	Fadila Guebre	2452202
	11/17/2023	11/21/2023 12:58	Adam P Silver	11/27/2023 12:33	Chandler E Cox	2452200
	11/17/2023	11/21/2023 12:58	Adam P Silver	11/27/2023 12:34	Chandler E Cox	2452202
EPA 8270E	11/17/2023	11/21/2023 09:00	Julie Wi	12/02/2023 00:17	Lipi Saha	2452214
	11/17/2023	11/21/2023 09:00	Julie Wi	12/04/2023 23:07	Julie Wi	2452214
EPA 8276	11/17/2023	11/21/2023 09:00	Julie Wi	12/10/2023 15:26	Arthur Maknenko	2452214
SM 2320 B-2011	11/17/2023			11/22/2023 02:13	Chandler E Cox	2452199
	11/17/2023			11/22/2023 02:27	Chandler E Cox	2452201
SM 2340 B-2011	11/17/2023			11/21/2023 23:26	Samatha Luckman	2452215
SM 2540 C-2015	11/17/2023			11/21/2023 16:31	Yijie Li	2452199, 2452201
SM 2540 D-2015	11/17/2023			11/21/2023 16:31	Yijie Li	2452199, 2452201
SM 4500-F- C-2011	11/17/2023			11/22/2023 00:14	Chandler E Cox	2452199
	11/17/2023			11/22/2023 00:19	Chandler E Cox	2452201
	11/17/2023			11/22/2023 03:21	Kenneth H Lee	2452200
SM 5310 B-2011	11/17/2023			11/22/2023 03:42	Kenneth H Lee	2452202