

Chemical Analysis Report

NW-DIST-2023-09-26-01

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

Event Description: **Navarre Run**
Request ID: **RQ-2023-09-25-10**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
Pensacola, FL 32502-5794
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 23-OCT-2023 11:11

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line extending from the end of the name.

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: DISCHARGE FROM TIGER POINT GOLF
COURSE AT MAPLEWOOD DRIVE**

Collection Date/Time: 09/25/2023 09:10

Field ID: G4NW0211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440026	DEP SOP: NU-094-1	Color (true)	110		PCU	P435525	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P435529	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P435834	
		Sulfate	5.8		mg SO4/L	P435837	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P435733	
	SM 2540 C-2015	TDS	81		mg/L	P436126	
	SM 2540 D-2015	TSS	2	U	mg/L	P435854	
2440027	SM 4500-F- C-2011	Fluoride	0.037	I	mg F/L	P435736	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.61		mg N/L	P435696	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P436039	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P436141	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P435691	
2440028	SM 5310 B-2011	Organic Carbon	14		mg C/L	P435753	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.19		mg P/L	P435521	
2440032	EPA 8270E	Aldrin	0.69	U	ng/L	P435980	
		Alpha-BHC	0.11	U	ng/L	P435980	
		Alpha-Chlordane	0.21	U	ng/L	P435980	
		PCB-1016	2.1	U	ng/L	P435980	
		Beta-BHC	0.11	U	ng/L	P435980	
		PCB-1221	2.1	U	ng/L	P435980	
		Beta-Cyfluthrin	1.3	U	ng/L	P435980	
		PCB-1232	2.1	U	ng/L	P435980	
		Bifenthrin	0.53	U	ng/L	P435980	
		PCB-1242	2.1	U	ng/L	P435980	
		Carbophenothion	0.96	U	ng/L	P435980	
		PCB-1248	2.1	U	ng/L	P435980	
		Chlorothalonil	3.8	U	ng/L	P435980	
		PCB-1254	2.1	U	ng/L	P435980	
		Cis-Nonachlor	0.21	U	ng/L	P435980	
		PCB-1260	2.1	U	ng/L	P435980	
		Cypermethrin	1.6	U	ng/L	P435980	
		Dacthal	0.16	U	ng/L	P435980	
		DDD-p,p'	0.27	U	ng/L	P435980	
		DDE-p,p'	0.21	U	ng/L	P435980	
		DDT-p,p'	0.85	U	ng/L	P435980	
		Delta-BHC	0.43	U	ng/L	P435980	
		Deltamethrin	1.3	U	ng/L	P435980	
		Dichlobenil	0.27	U	ng/L	P435980	
		Dicofol	1.3	U	ng/L	P435980	
		Dieldrin	0.44	I	ng/L	P435980	
		Endosulfan I	0.43	U	ng/L	P435980	
		Endosulfan II	0.96	U	ng/L	P435980	

Field ID: G4NW0211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440032	EPA 8270E	Endosulfan Sulfate	0.32	U	ng/L	P435980	CCV
		Endrin	0.96	U	ng/L	P435980	
		Endrin Aldehyde	0.80	U	ng/L	P435980	
		Endrin Ketone	0.43	U	ng/L	P435980	
		Esfenvalerate	0.80	U	ng/L	P435980	
		Ethalfuralin	0.16	U	ng/L	P435980	
		Fenpropathrin	0.27	U	ng/L	P435980	
		Gamma-BHC	0.13	U	ng/L	P435980	
		Gamma-Chlordane	0.21	U	ng/L	P435980	
		Heptachlor	0.21	U	ng/L	P435980	
		Heptachlor Epoxide	0.27	U	ng/L	P435980	
		Hexachlorobenzene**	1.1	U	ng/L	P435980	
		Kepone	14	UJ	ng/L	P435980	
		Lambda-Cyhalothrin	0.80	U	ng/L	P435980	
		Methoprene	0.80	U	ng/L	P435980	
		Methoxychlor	0.32	U	ng/L	P435980	
		MGK-264	0.21	U	ng/L	P435980	
		Mirex	0.37	U	ng/L	P435980	
		Oxychlordane	0.32	U	ng/L	P435980	
		Permethrin	1.7	U	ng/L	P435980	
		Phenothrin	0.96	U	ng/L	P435980	
		Piperonyl Butoxide	3.7		ng/L	P435980	
		Prallethrin	2.1	U	ng/L	P435980	
		Tau-Fluvalinate	0.27	U	ng/L	P435980	
		Tetramethrin	0.80	U	ng/L	P435980	
		Trans-Nonachlor	0.21	U	ng/L	P435980	
		Triclosan Methyl	0.16	U	ng/L	P435980	
		Trifluralin	0.21	U	ng/L	P435980	
		EPA 8276	Chlordane	2.1	U	ng/L	P435980
			Toxaphene	16	U	ng/L	P435980
2440044	EPA 200.7 Rev. 4.4	Calcium	7.15		mg/L	P435588	
		Iron	310		ug/L	P435588	
		Magnesium	2.64		mg/L	P435588	
		Potassium	2.9		mg/L	P435588	
		Sodium	14.3		mg/L	P435588	
		Strontium	26.5		ug/L	P435588	
		Tin	3.0	U	ug/L	P435588	
		Titanium	1.3	I	ug/L	P435588	
		Vanadium	2.0	U	ug/L	P435588	
		Zinc	5.0	U	ug/L	P435588	
	EPA 200.8 Rev. 5.4	Aluminum	256		ug/L	P435588	
		Antimony	0.050	U	ug/L	P435588	
		Arsenic	3.32		ug/L	P435588	
		Barium	6.21		ug/L	P435588	
		Beryllium	0.016	I	ug/L	P435588	

Field ID: G4NW0211

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440044	EPA 200.8 Rev. 5.4	Boron	60.7		ug/L	P435588	
		Cadmium	0.020	U	ug/L	P435588	
		Chromium	0.83	I	ug/L	P435588	
		Cobalt	0.075	I	ug/L	P435588	
		Copper	0.51	I	ug/L	P435588	
		Lead	0.20	U	ug/L	P435588	
		Manganese	10.9		ug/L	P435588	
		Molybdenum	0.15	U	ug/L	P435588	
		Nickel	0.68	I	ug/L	P435588	
		Selenium	0.20	U	ug/L	P435588	
		Silver	0.010	U	ug/L	P435588	
		Thallium	0.10	U	ug/L	P435588	
	SM 2340 B-2011	Hardness	28.7		mg/L	P435588	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: FB

Collection Date/Time: 09/25/2023 09:20

Field ID: FB_09252023

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440029	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P435521	
2440045	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P435588	
		Iron	30	U	ug/L	P435588	
		Magnesium	0.040	U	mg/L	P435588	
		Potassium	0.30	U	mg/L	P435588	
		Sodium	0.50	U	mg/L	P435588	
		Strontium	2.0	U	ug/L	P435588	
		Tin	3.0	U	ug/L	P435588	
		Titanium	0.75	U	ug/L	P435588	
		Vanadium	2.0	U	ug/L	P435588	
		Zinc	5.0	U	ug/L	P435588	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P435588	
		Antimony	0.050	U	ug/L	P435588	
		Arsenic	0.050	U	ug/L	P435588	
		Barium	0.20	U	ug/L	P435588	
		Beryllium	0.010	U	ug/L	P435588	
		Boron	2.0	U	ug/L	P435588	
		Cadmium	0.020	U	ug/L	P435588	
		Chromium	0.40	U	ug/L	P435588	
		Cobalt	0.020	U	ug/L	P435588	
		Copper	0.40	U	ug/L	P435588	
		Lead	0.20	U	ug/L	P435588	
		Manganese	0.10	U	ug/L	P435588	
		Molybdenum	0.15	U	ug/L	P435588	
		Nickel	0.50	U	ug/L	P435588	
		Selenium	0.20	U	ug/L	P435588	
		Silver	0.010	U	ug/L	P435588	
		Thallium	0.10	U	ug/L	P435588	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P435588	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

SM 2340 B-2011: Batch matrix spike recoveries for calcium are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Sample Location: TOM KING CREEK SOUTH OF BAREFOOT CREEK CIR

Collection Date/Time: 09/25/2023 10:15

Field ID: G4NW0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440181	EPA 8270E	Aldrin	0.66	U	ng/L	P435980	
		Alpha-BHC	0.10	U	ng/L	P435980	
		Alpha-Chlordane	0.20	U	ng/L	P435980	
		PCB-1016	2.0	U	ng/L	P435980	
		Beta-BHC	0.10	U	ng/L	P435980	
		PCB-1221	2.0	U	ng/L	P435980	
		Beta-Cyfluthrin	1.3	U	ng/L	P435980	
		PCB-1232	2.0	U	ng/L	P435980	
		Bifenthrin	0.51	U	ng/L	P435980	
		PCB-1242	2.0	U	ng/L	P435980	
		PCB-1248	2.0	U	ng/L	P435980	
		Chlorothalonil	3.7	U	ng/L	P435980	
		PCB-1254	2.0	U	ng/L	P435980	
		Cis-Nonachlor	0.20	U	ng/L	P435980	
		PCB-1260	2.0	U	ng/L	P435980	
		Cypermethrin	1.5	U	ng/L	P435980	
		Dacthal	0.15	U	ng/L	P435980	
		DDD-p,p'	0.25	U	ng/L	P435980	
		DDE-p,p'	0.20	U	ng/L	P435980	
		DDT-p,p'	0.81	U	ng/L	P435980	
		Delta-BHC	0.41	U	ng/L	P435980	
		Deltamethrin	1.3	U	ng/L	P435980	
		Dichlobenil	0.25	U	ng/L	P435980	
		Dicofol	1.3	U	ng/L	P435980	
		Dieldrin	0.41	U	ng/L	P435980	
		Endosulfan I	0.41	U	ng/L	P435980	
		Endosulfan II	0.92	U	ng/L	P435980	
		Endosulfan Sulfate	0.31	U	ng/L	P435980	
		Endrin	0.92	U	ng/L	P435980	
		Endrin Aldehyde	0.76	U	ng/L	P435980	
		Endrin Ketone	0.41	U	ng/L	P435980	
		Esfenvalerate	0.76	U	ng/L	P435980	
		Ethalfuralin	0.15	U	ng/L	P435980	
		Fenpropathrin	0.25	U	ng/L	P435980	
		Gamma-BHC	0.13	U	ng/L	P435980	
		Gamma-Chlordane	0.20	U	ng/L	P435980	
		Heptachlor	0.20	U	ng/L	P435980	
		Heptachlor Epoxide	0.25	U	ng/L	P435980	
		Hexachlorobenzene**	1.0	U	ng/L	P435980	
		Kepone	14	UJ	ng/L	P435980	CCV
		Lambda-Cyhalothrin	0.76	U	ng/L	P435980	
		Methoprene	0.76	U	ng/L	P435980	
		Methoxychlor	0.31	U	ng/L	P435980	

Field ID: G4NW0019

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440181	EPA 8270E	MGK-264	0.20	U	ng/L	P435980	
		Mirex	0.36	U	ng/L	P435980	
		Oxychlordane	0.31	U	ng/L	P435980	
		Permethrin	1.6	U	ng/L	P435980	
		Phenothrin	0.92	U	ng/L	P435980	
		Piperonyl Butoxide	0.28	I	ng/L	P435980	
		Prallethrin	2.0	U	ng/L	P435980	
		Tau-Fluvalinate	0.25	U	ng/L	P435980	
		Tetramethrin	0.76	U	ng/L	P435980	
		Trans-Nonachlor	0.20	U	ng/L	P435980	
		Triclosan Methyl	0.15	U	ng/L	P435980	
		Trifluralin	0.20	U	ng/L	P435980	
	EPA 8276	Chlordane	2.0	U	ng/L	P435980	
		Toxaphene	15	U	ng/L	P435980	

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

**Sample Location: TRIBUTARY TO TOM KING CREEK
DOWNSTREAM OF VALLEY RD**

Collection Date/Time: 09/25/2023 10:25

Field ID: G4NW0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440182	EPA 8270E	Aldrin	0.68	U	ng/L	P435980	
		Alpha-BHC	0.11	U	ng/L	P435980	
		Alpha-Chlordane	0.21	U	ng/L	P435980	
		PCB-1016	2.1	U	ng/L	P435980	
		Beta-BHC	0.11	U	ng/L	P435980	
		PCB-1221	2.1	U	ng/L	P435980	
		Beta-Cyfluthrin	1.3	U	ng/L	P435980	
		PCB-1232	2.1	U	ng/L	P435980	
		Bifenthrin	0.53	U	ng/L	P435980	
		PCB-1242	2.1	U	ng/L	P435980	
		PCB-1248	2.1	U	ng/L	P435980	
		Chlorothalonil	3.8	U	ng/L	P435980	
		PCB-1254	2.1	U	ng/L	P435980	
		Cis-Nonachlor	0.21	U	ng/L	P435980	
		PCB-1260	2.1	U	ng/L	P435980	
		Cypermethrin	1.6	U	ng/L	P435980	
		Dacthal	0.16	U	ng/L	P435980	
		DDD-p,p'	0.26	U	ng/L	P435980	
		DDE-p,p'	0.21	U	ng/L	P435980	
		DDT-p,p'	0.84	U	ng/L	P435980	
		Delta-BHC	0.42	U	ng/L	P435980	
		Deltamethrin	1.3	U	ng/L	P435980	
		Dichlobenil	0.26	U	ng/L	P435980	
		Dicofol	1.3	U	ng/L	P435980	
		Dieldrin	0.42	U	ng/L	P435980	
		Endosulfan I	0.42	U	ng/L	P435980	
		Endosulfan II	0.95	U	ng/L	P435980	
		Endosulfan Sulfate	0.32	U	ng/L	P435980	
		Endrin	0.95	U	ng/L	P435980	
		Endrin Aldehyde	0.79	U	ng/L	P435980	
		Endrin Ketone	0.42	U	ng/L	P435980	
		Esfenvalerate	0.79	U	ng/L	P435980	
		Ethalfuralin	0.16	U	ng/L	P435980	
		Fenpropathrin	0.26	U	ng/L	P435980	
		Gamma-BHC	0.13	U	ng/L	P435980	
		Gamma-Chlordane	0.21	U	ng/L	P435980	
		Heptachlor	0.21	U	ng/L	P435980	
		Heptachlor Epoxide	0.26	U	ng/L	P435980	
		Hexachlorobenzene**	1.1	U	ng/L	P435980	
		Kepone	14	UJ	ng/L	P435980	CCV
		Lambda-Cyhalothrin	0.79	U	ng/L	P435980	
		Methoprene	0.79	U	ng/L	P435980	
		Methoxychlor	0.32	U	ng/L	P435980	

Field ID: G4NW0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440182	EPA 8270E	MGK-264	0.21	U	ng/L	P435980	
		Mirex	0.37	U	ng/L	P435980	
		Oxychlordane	0.32	U	ng/L	P435980	
		Permethrin	1.7	U	ng/L	P435980	
		Phenothrin	0.95	U	ng/L	P435980	
		Piperonyl Butoxide	0.16	U	ng/L	P435980	
		Prallethrin	2.1	U	ng/L	P435980	
		Tau-Fluvalinate	0.26	U	ng/L	P435980	
		Tetramethrin	0.79	U	ng/L	P435980	
		Trans-Nonachlor	0.21	U	ng/L	P435980	
		Triclosan Methyl	0.16	U	ng/L	P435980	
		Trifluralin	0.21	U	ng/L	P435980	
	EPA 8276	Chlordane	2.1	U	ng/L	P435980	
		Toxaphene	16	U	ng/L	P435980	

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

Sample Location: EAST BAY RIV HWY 87 BRID

Collection Date/Time: 09/25/2023 10:45

Field ID: G4NW0015

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2440183	EPA 200.7 Rev. 4.4	Calcium	11.5		mg/L	P435804	
		Iron	120	I	ug/L	P435804	
		Magnesium	35.3		mg/L	P435804	
		Potassium	10.6		mg/L	P435804	
		Sodium	278		mg/L	P435804	
		Strontium	192		ug/L	P435804	
		Tin	9.8	I	ug/L	P435804	
		Titanium	2.2	U	ug/L	P435804	
		Vanadium	6.0	U	ug/L	P435804	
	EPA 200.8 Rev. 5.4	Zinc	15	U	ug/L	P435804	
		Aluminum	101		ug/L	P435804	
		Antimony	0.20	U	ug/L	P435804	
		Arsenic	0.22	I	ug/L	P435804	
		Barium	5.2		ug/L	P435804	
		Beryllium	0.040	U	ug/L	P435804	
		Boron	129		ug/L	P435804	
		Cadmium	0.080	U	ug/L	P435804	
		Chromium	1.6	U	ug/L	P435804	
		Cobalt	0.93		ug/L	P435804	
		Copper	1.6	U	ug/L	P435804	
		Lead	0.80	U	ug/L	P435804	
		Manganese	3.6		ug/L	P435804	
		Molybdenum	0.60	U	ug/L	P435804	
		Nickel	2.0	U	ug/L	P435804	
		Selenium	0.80	U	ug/L	P435804	
		Silver	0.040	U	ug/L	P435804	
		Thallium	0.40	U	ug/L	P435804	
	SM 2340 B-2011	Hardness	174		mg/L	P435804	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium, magnesium, potassium and sodium 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.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P435525

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435529

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435588

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 200.7 Rev. 4.4
Batch ID: P435804

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: P435588

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435588

Component	Result	Code	Units
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435804

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435834

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P435837

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435696

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436039

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436039

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436141

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435691

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

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

Reference Method: EPA 8270E
Batch ID: P435980

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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P435980

Component	Result	Code	Units
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: P435980

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

Reference Method: SM 2320 B-2011

Batch ID: P435733

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

Reference Method: SM 2540 C-2015

Batch ID: P436126

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P435854

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2015
Batch ID: P435854

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P435736

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P435753

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: P435525

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: P435529

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	106		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	101		P	85 - 115
Sodium	104		P	85 - 115
Strontium	103		P	85 - 115
Tin	103		P	85 - 115
Titanium	102		P	85 - 115
Vanadium	103		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	80 - 120
Iron	103		P	80 - 120
Magnesium	100		P	80 - 120
Potassium	98.5		P	80 - 120
Sodium	100		P	80 - 120
Strontium	101		P	80 - 120
Tin	103		P	80 - 120
Titanium	101		P	80 - 120
Vanadium	101		P	80 - 120
Zinc	99.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	101		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	99.3		P	85 - 115
Barium	104		P	85 - 115
Beryllium	102		P	85 - 115
Boron	104		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	104		P	85 - 115
Cobalt	102		P	85 - 115
Copper	99.2		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435588

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	97.1		P	85 - 115
Manganese	103		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	100		P	85 - 115
Selenium	99.0		P	85 - 115
Silver	112		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435804

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	99.7		P	85 - 115
Arsenic	102		P	85 - 115
Barium	104		P	85 - 115
Beryllium	96.0		P	85 - 115
Boron	105		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	101		P	85 - 115
Cobalt	101		P	85 - 115
Copper	98.8		P	85 - 115
Lead	96.5		P	85 - 115
Manganese	104		P	85 - 115
Molybdenum	100		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	104		P	85 - 115
Silver	111		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435834

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435837

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P435696

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P436039

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P436039

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P436141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	103		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P435691

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P435521

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.7		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P435980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	78.6		P	30 - 96.0
Alpha-BHC	77.6		P	70 - 109
Alpha-Chlordane	82.7		P	45 - 107
Beta-BHC	90.6		P	64 - 138
Beta-Cyfluthrin	106		P	17 - 141
Bifenthrin	89.8		P	10 - 113
Carbophenothion	68.6		P	24 - 91.0
Chlorothalonil	61.8		P	26 - 180
Cis-Nonachlor	93.8		P	37 - 102
Cypermethrin	98.0		P	20 - 133
Dacthal	88.7		P	69 - 114
DDD-p,p'	89.1		P	42 - 105
DDE-p,p'	77.1		P	42 - 106
DDT-p,p'	82.7		P	42 - 107
Delta-BHC	99.5		P	67 - 144
Deltamethrin	102		P	15 - 149
Dichlobenil	87.9		P	46 - 117
Dicofol	72.9		P	34 - 114
Dieldrin	82.4		P	50 - 108
Endosulfan I	82.1		P	55 - 104
Endosulfan II	90.8		P	51 - 111
Endosulfan Sulfate	77.1		P	56 - 121
Endrin	85.1		P	10 - 106
Endrin Aldehyde	91.1		P	34 - 114
Endrin Ketone	72.0		P	63 - 177
Esfenvalerate	107		P	29 - 143
Ethalfuralin	73.6		P	46 - 96.0
Fenpropathrin	97.5		P	28 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P435980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Gamma-BHC	76.0		P	65 - 121
Gamma-Chlordane	84.0		P	39 - 103
Heptachlor	74.9		P	39 - 94.0
Heptachlor Epoxide	92.0		P	54 - 104
Hexachlorobenzene	91.5		P	36 - 100
Kepone	50.4		P	10 - 225
Lambda-Cyhalothrin	102		P	10 - 135
Methoprene	77.4		P	10 - 109
Methoxychlor	69.0		P	52 - 112
MGK-264	104		P	44 - 117
Mirex	87.7		P	20 - 90.0
Oxychlordane	77.7		P	44 - 102
PCB-1016	80.0		P	45 - 107
PCB-1260	78.2		P	40 - 118
Permethrin	102		P	18 - 135
Phenothrin	96.2		P	10 - 102
Piperonyl Butoxide	89.9		P	28 - 156
Prallethrin	88.6		P	28 - 113
Tau-Fluvalinate	109		P	10 - 123
Tetramethrin	97.6		P	18 - 158
Trans-Nonachlor	87.4		P	39 - 104
Triclosan Methyl	76.8		P	54 - 108
Trifluralin	72.7		P	46 - 97.0

Reference Method: EPA 8276

Batch ID: P435980

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	72.8		P	52 - 117
Toxaphene	86.7		P	44 - 125

Reference Method: SM 2320 B-2011

Batch ID: P435733

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	97.3		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P436126

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

Reference Method: SM 2540 D-2015

Batch ID: P435854

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	93.9		P	85 - 106

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P435736

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

Reference Method: SM 5310 B-2011
Batch ID: P435753

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P435588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439344	Iron	103		P	75 - 125
2439344	Magnesium	103		P	75 - 125
2439344	Potassium	102		P	75 - 125
2439344	Sodium	103		P	75 - 125
2439344	Strontium	100		P	75 - 125
2439344	Tin	101		P	75 - 125
2439344	Titanium	102		P	75 - 125
2439344	Vanadium	102		P	75 - 125
2439344	Zinc	100		P	75 - 125
2439877	Calcium	99.9		P	80 - 120
2439877	Iron	104	104	P/P	80 - 120
2439877	Magnesium	105	104	P/P	80 - 120
2439877	Potassium	98.7	97.5	P/P	80 - 120
2439877	Sodium	99.8		P	80 - 120
2439877	Strontium	100	99.5	P/P	80 - 120
2439877	Tin	101	99.2	P/P	80 - 120
2439877	Titanium	101	102	P/P	80 - 120
2439877	Vanadium	101	103	P/P	80 - 120
2439877	Zinc	101	101	P/P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P435804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440935	Iron	105	99.8	P/P	70 - 130
2440935	Strontium	112	101	P/P	70 - 130
2440935	Tin	100	102	P/P	70 - 130
2440935	Titanium	101	104	P/P	70 - 130
2440935	Vanadium	102	102	P/P	70 - 130
2440935	Zinc	95.2	97.6	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439344	Aluminum	94.1		P	75 - 125
2439344	Antimony	100		P	75 - 125
2439344	Arsenic	103		P	75 - 125
2439344	Barium	104		P	75 - 125
2439344	Beryllium	97.7		P	75 - 125
2439344	Boron	102		P	75 - 125
2439344	Cadmium	105		P	75 - 125
2439344	Chromium	104		P	75 - 125
2439344	Cobalt	100		P	75 - 125
2439344	Copper	93.2		P	75 - 125
2439344	Lead	98.4		P	75 - 125
2439344	Manganese	99.2		P	75 - 125
2439344	Molybdenum	105		P	75 - 125
2439344	Nickel	95.8		P	75 - 125
2439344	Selenium	99.3		P	75 - 125
2439344	Silver	109		P	75 - 125
2439344	Thallium	107		P	75 - 125

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435588

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439877	Aluminum	98.9	99.0	P/P	80 - 120
2439877	Antimony	102	101	P/P	80 - 120
2439877	Arsenic	102	100	P/P	80 - 120
2439877	Barium	104	103	P/P	80 - 120
2439877	Beryllium	103	103	P/P	80 - 120
2439877	Boron	103	102	P/P	80 - 120
2439877	Cadmium	102	103	P/P	80 - 120
2439877	Chromium	105	103	P/P	80 - 120
2439877	Cobalt	101	101	P/P	80 - 120
2439877	Copper	98.3	97.4	P/P	80 - 120
2439877	Lead	96.6	97.0	P/P	80 - 120
2439877	Manganese	102	102	P/P	80 - 120
2439877	Molybdenum	102	101	P/P	80 - 120
2439877	Nickel	99.1	98.2	P/P	80 - 120
2439877	Selenium	100	98.1	P/P	80 - 120
2439877	Silver	112	110	P/P	80 - 120
2439877	Thallium	107	106	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440935	Aluminum	103	102	P/P	70 - 130
2440935	Antimony	99.2	101	P/P	70 - 130
2440935	Arsenic	112	114	P/P	70 - 130
2440935	Barium	105	107	P/P	70 - 130
2440935	Beryllium	108	103	P/P	70 - 130
2440935	Cadmium	92.9	98.2	P/P	70 - 130
2440935	Chromium	104	106	P/P	70 - 130
2440935	Cobalt	99.0	101	P/P	70 - 130
2440935	Copper	95.1	96.8	P/P	70 - 130
2440935	Lead	100	101	P/P	70 - 130
2440935	Manganese	105	105	P/P	70 - 130
2440935	Molybdenum	110	113	P/P	70 - 130
2440935	Nickel	96.7	98.2	P/P	70 - 130
2440935	Selenium	109	114	P/P	70 - 130
2440935	Silver	101	102	P/P	70 - 130
2440935	Thallium	106	108	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435834

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440108	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435837

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439916	Sulfate	103		P	90 - 110
2440108	Sulfate	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P435696

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439919	Ammonia-N	101	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P436039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440060	Kjeldahl Nitrogen	96.1	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P436141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439919	NO2NO3-N	98.4	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P435691

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440027	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P435521

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439824	O-Phosphate-P	98.3	98.7	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P435980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440178	Aldrin	50.5	54.7	P/P	24 - 81.0
2440178	Alpha-BHC	83.6	77.1	P/P	65 - 110
2440178	Alpha-Chlordane	60.5	58.0	P/P	43 - 119
2440178	Beta-BHC	77.2	76.3	P/P	54 - 165
2440178	Beta-Cyfluthrin	80.8	82.1	P/P	27 - 165
2440178	Bifenthrin	63.8	68.2	P/P	17 - 117
2440178	Carbophenothion	53.7	50.1	P/P	21 - 108
2440178	Chlorothalonil	51.8	45.2	P/P	10 - 255
2440178	Cis-Nonachlor	56.2	65.8	P/P	34 - 98.0
2440178	Cypermethrin	85.0	81.4	P/P	25 - 143
2440178	Dacthal	69.0	67.6	P/P	55 - 139
2440178	DDD-p,p'	58.7	66.8	P/P	30 - 109
2440178	DDE-p,p'	50.8	53.6	P/P	35 - 106
2440178	DDT-p,p'	89.3	99.5	P/P	41 - 101
2440178	Delta-BHC	85.8	84.4	P/P	58 - 165
2440178	Deltamethrin	114	107	P/P	10 - 194
2440178	Dichlobenil	59.9	48.0	P/P	22 - 114
2440178	Dicofol	65.9	66.7	P/P	17 - 133
2440178	Dieldrin	57.2	65.3	P/P	45 - 129
2440178	Endosulfan I	69.4	68.5	P/P	49 - 104
2440178	Endosulfan II	60.5	60.2	P/P	37 - 117
2440178	Endosulfan Sulfate	73.6	65.8	P/P	38 - 128

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P435980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440178	Endrin	55.8	63.3	P/P	35 - 116
2440178	Endrin Aldehyde	58.6	44.8	P/P	19 - 108
2440178	Endrin Ketone	70.9	61.5	P/P	44 - 134
2440178	Esfenvalerate	92.8	96.3	P/P	27 - 176
2440178	Ethalfuralin	59.4	62.4	P/P	49 - 100
2440178	Fenpropathrin	76.3	70.6	P/P	34 - 117
2440178	Gamma-BHC	73.0	68.4	P/P	59 - 129
2440178	Gamma-Chlordane	63.8	60.4	P/P	33 - 107
2440178	Heptachlor	65.5	64.5	P/P	37 - 94.0
2440178	Heptachlor Epoxide	70.3	68.8	P/P	38 - 118
2440178	Hexachlorobenzene	60.3	58.5	P/P	35 - 97.0
2440178	Kepone	28.7	30.7	P/P	10 - 221
2440178	Lambda-Cyhalothrin	80.3	78.6	P/P	23 - 190
2440178	Methoprene	43.6	52.6	P/P	21 - 109
2440178	Methoxychlor	75.3	63.6	P/P	46 - 118
2440178	MGK-264	93.7	79.4	P/P	39 - 122
2440178	Mirex	52.8	52.6	P/P	25 - 90.0
2440178	Oxychlordane	62.6	70.0	P/P	42 - 100
2440178	Permethrin	68.6	71.9	P/P	33 - 181
2440178	Phenothrin	61.4	61.6	P/P	12 - 125
2440178	Piperonyl Butoxide	105	92.3	P/P	10 - 178
2440178	Prallethrin	66.1	66.2	P/P	24 - 122
2440178	Tau-Fluvalinate	87.0	92.6	P/P	13 - 151
2440178	Tetramethrin	89.3	84.8	P/P	16 - 172
2440178	Trans-Nonachlor	66.8	63.4	P/P	39 - 100
2440178	Triclosan Methyl	56.8	57.0	P/P	43 - 110
2440178	Trifluralin	55.2	60.5	P/P	45 - 94.0
2440271	PCB-1016	79.8	91.5	P/P	45 - 107
2440271	PCB-1260	74.6	86.7	P/P	40 - 112

Reference Method: EPA 8276

Batch ID: P435980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2440271	Chlordane	59.2	69.4	P/P	43 - 123
2440271	Toxaphene	66.1	73.5	P/P	27 - 156

Reference Method: SM 4500-F- C-2011

Batch ID: P435736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439796	Fluoride	101	101	P/P	94 - 106

Reference Method: SM 5310 B-2011

Batch ID: P435753

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2439957	Organic Carbon	95.1	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P435525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439955	Color (true)	1.04	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P435529

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440112	Turbidity	10.2	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439877	Calcium	1.27	Spike	P	0 - 20
2439877	Iron	0.463	Spike	P	0 - 20
2439877	Magnesium	0.342	Spike	P	0 - 20
2439877	Potassium	0.943	Spike	P	0 - 20
2439877	Sodium	0.521	Spike	P	0 - 20
2439877	Strontium	0.552	Spike	P	0 - 20
2439877	Tin	1.67	Spike	P	0 - 20
2439877	Titanium	0.525	Spike	P	0 - 20
2439877	Vanadium	1.25	Spike	P	0 - 20
2439877	Zinc	0.436	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P435804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440935	Calcium	4.84	Spike	P	0 - 20
2440935	Iron	4.77	Spike	P	0 - 20
2440935	Magnesium	4.85	Spike	P	0 - 20
2440935	Potassium	1.16	Spike	P	0 - 20
2440935	Sodium	2.10	Spike	P	0 - 20
2440935	Strontium	4.04	Spike	P	0 - 20
2440935	Tin	1.60	Spike	P	0 - 20
2440935	Titanium	2.80	Spike	P	0 - 20
2440935	Vanadium	0.277	Spike	P	0 - 20
2440935	Zinc	2.51	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P435588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439877	Aluminum	0.157	Spike	P	0 - 20
2439877	Antimony	0.529	Spike	P	0 - 20
2439877	Arsenic	1.92	Spike	P	0 - 20
2439877	Barium	0.913	Spike	P	0 - 20
2439877	Beryllium	0.0568	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435588

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439877	Boron	0.854	Spike	P	0 - 20
2439877	Cadmium	1.16	Spike	P	0 - 20
2439877	Chromium	1.44	Spike	P	0 - 20
2439877	Cobalt	0.305	Spike	P	0 - 20
2439877	Copper	0.825	Spike	P	0 - 20
2439877	Lead	0.361	Spike	P	0 - 20
2439877	Manganese	0.534	Spike	P	0 - 20
2439877	Molybdenum	1.11	Spike	P	0 - 20
2439877	Nickel	0.901	Spike	P	0 - 20
2439877	Selenium	2.01	Spike	P	0 - 20
2439877	Silver	1.10	Spike	P	0 - 20
2439877	Thallium	0.243	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P435804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440935	Aluminum	1.32	Spike	P	0 - 20
2440935	Antimony	1.86	Spike	P	0 - 20
2440935	Arsenic	1.77	Spike	P	0 - 20
2440935	Barium	1.57	Spike	P	0 - 20
2440935	Beryllium	4.71	Spike	P	0 - 20
2440935	Boron	0.0573	Spike	P	0 - 20
2440935	Cadmium	5.57	Spike	P	0 - 20
2440935	Chromium	1.12	Spike	P	0 - 20
2440935	Cobalt	2.07	Spike	P	0 - 20
2440935	Copper	1.73	Spike	P	0 - 20
2440935	Lead	0.948	Spike	P	0 - 20
2440935	Manganese	0.448	Spike	P	0 - 20
2440935	Molybdenum	2.33	Spike	P	0 - 20
2440935	Nickel	1.62	Spike	P	0 - 20
2440935	Selenium	4.04	Spike	P	0 - 20
2440935	Silver	1.40	Spike	P	0 - 20
2440935	Thallium	1.95	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435834

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439916	Chloride	0.00286	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P435837

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439916	Sulfate	0.503	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P435696

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439919	Ammonia-N	0.484	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P436039

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440060	Kjeldahl Nitrogen	5.27	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P436141

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439919	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P435691

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440027	Total-P	1.53	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P435521

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439824	O-Phosphate-P	0.406	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P435980

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440178	Aldrin	7.98	Spike	P	0 - 41
2440178	Alpha-BHC	8.12	Spike	P	0 - 25
2440178	Alpha-Chlordane	4.29	Spike	P	0 - 32
2440178	Beta-BHC	1.14	Spike	P	0 - 33
2440178	Beta-Cyfluthrin	1.64	Spike	P	0 - 43
2440178	Bifenthrin	6.69	Spike	P	0 - 52
2440178	Carbophenothion	6.91	Spike	P	0 - 30
2440178	Chlorothalonil	13.8	Spike	P	0 - 82
2440178	Cis-Nonachlor	15.8	Spike	P	0 - 33
2440178	Cypermethrin	4.30	Spike	P	0 - 51
2440178	Dacthal	2.09	Spike	P	0 - 27
2440178	DDD-p,p'	12.9	Spike	P	0 - 39
2440178	DDE-p,p'	5.21	Spike	P	0 - 31
2440178	DDT-p,p'	10.8	Spike	P	0 - 29
2440178	Delta-BHC	1.65	Spike	P	0 - 35
2440178	Deltamethrin	6.53	Spike	P	0 - 100

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P435980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440178	Dichlobenil	22.0	Spike	P	0 - 40
2440178	Dicofol	1.20	Spike	P	0 - 37
2440178	Dieldrin	13.1	Spike	P	0 - 27
2440178	Endosulfan I	1.28	Spike	P	0 - 23
2440178	Endosulfan II	0.462	Spike	P	0 - 34
2440178	Endosulfan Sulfate	11.1	Spike	P	0 - 36
2440178	Endrin	12.5	Spike	P	0 - 45
2440178	Endrin Aldehyde	26.6	Spike	P	0 - 76
2440178	Endrin Ketone	14.2	Spike	P	0 - 43
2440178	Esfenvalerate	3.69	Spike	P	0 - 51
2440178	Ethalfuralin	4.94	Spike	P	0 - 22
2440178	Fenpropathrin	7.76	Spike	P	0 - 49
2440178	Gamma-BHC	6.53	Spike	P	0 - 28
2440178	Gamma-Chlordane	5.52	Spike	P	0 - 40
2440178	Heptachlor	1.54	Spike	P	0 - 29
2440178	Heptachlor Epoxide	1.62	Spike	P	0 - 33
2440178	Hexachlorobenzene	2.95	Spike	P	0 - 36
2440178	Kepone	6.65	Spike	P	0 - 85
2440178	Lambda-Cyhalothrin	2.14	Spike	P	0 - 55
2440178	Methoprene	18.6	Spike	P	0 - 53
2440178	Methoxychlor	16.9	Spike	P	0 - 50
2440178	MGK-264	16.6	Spike	P	0 - 43
2440178	Mirex	0.347	Spike	P	0 - 40
2440178	Oxychlordane	11.1	Spike	P	0 - 31
2440178	Permethrin	4.61	Spike	P	0 - 50
2440178	Phenothrin	0.342	Spike	P	0 - 58
2440178	Piperonyl Butoxide	13.1	Spike	P	0 - 100
2440178	Prallethrin	0.147	Spike	P	0 - 39
2440178	Tau-Fluvalinate	6.28	Spike	P	0 - 54
2440178	Tetramethrin	5.19	Spike	P	0 - 51
2440178	Trans-Nonachlor	5.22	Spike	P	0 - 39
2440178	Triclosan Methyl	0.346	Spike	P	0 - 31
2440178	Trifluralin	9.12	Spike	P	0 - 22
2440271	PCB-1016	13.7	Spike	P	0 - 25
2440271	PCB-1260	15.0	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P435980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2440271	Chlordane	15.9	Spike	P	0 - 28
2440271	Toxaphene	10.6	Spike	P	0 - 27

Reference Method: SM 2320 B-2011
Batch ID: P435733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439796	Total Alkalinity	1.06	Sample	P	0 - 3.9

Quality Assurance Report Precision

Reference Method: SM 2540 C-2015
Batch ID: P436126

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439771	TDS	7.66	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P435736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439796	Fluoride	0.0	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P435753

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2439957	Organic Carbon	0.364	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2440032

Field Sample ID: G4NW0211

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	95.9	P	37 - 129
EPA 8270E	Decachlorobiphenyl	76.0	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	56.4	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	69.7	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	70.6	P	28 - 102
EPA 8276	PCNB	95.4	P	49 - 115

Lab Sample ID: 2440181

Field Sample ID: G4NW0019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	75.4	P	37 - 129
EPA 8270E	Decachlorobiphenyl	90.5	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	44.6	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	53.6	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	54.9	P	28 - 102
EPA 8276	PCNB	77.3	P	49 - 115

Lab Sample ID: 2440182

Field Sample ID: G4NW0020

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	78.2	P	37 - 129
EPA 8270E	Decachlorobiphenyl	78.4	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	49.7	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	74.7	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	57.1	P	28 - 102
EPA 8276	PCNB	106	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A121771

Included Lab Sample IDs: 2440026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	98.9	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A121772

Included Lab Sample IDs: 2440028, 2440029

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.6	P/P	90 - 110
O-Phosphate-P	98.6	99.4	P/P	90 - 110

Reference Method: DEP SOP: NU-094-1

Run ID: A121773

Included Lab Sample IDs: 2440026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A121774

Included Lab Sample IDs: 2440026

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A121829

Included Lab Sample IDs: 2440027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.9	99.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121837

Included Lab Sample IDs: 2440044, 2440045

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	102	P/P	90 - 110
Calcium	102	101	P/P	95 - 105
Iron	100	99.9	P/P	90 - 110
Iron	102	101	P/P	95 - 105
Magnesium	101	101	P/P	90 - 110
Magnesium	103	102	P/P	95 - 105
Potassium	98.4	98.9	P/P	90 - 110
Potassium	99.8	99.0	P/P	95 - 105
Sodium	100	100	P/P	95 - 105
Sodium	99.7	99.6	P/P	90 - 110
Strontium	101	100	P/P	90 - 110
Strontium	99.8	101	P/P	95 - 105
Tin	101	101	P/P	95 - 105
Tin	103	103	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121837

Included Lab Sample IDs: 2440044, 2440045

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Titanium	100	101	P/P	95 - 105
Titanium	100	101	P/P	90 - 110
Vanadium	100	100	P/P	95 - 105
Vanadium	101	102	P/P	90 - 110
Zinc	100	102	P/P	95 - 105
Zinc	103	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A121840

Included Lab Sample IDs: 2440044, 2440045

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	98.8	P/P	90 - 110
Aluminum	97.8	96.6	P/P	90 - 110
Antimony	96.7	98.0	P/P	90 - 110
Antimony	98.9	99.2	P/P	90 - 110
Arsenic	101	99.6	P/P	90 - 110
Arsenic	100	102	P/P	90 - 110
Barium	100	102	P/P	90 - 110
Barium	101	100	P/P	90 - 110
Beryllium	104	103	P/P	90 - 110
Beryllium	95.0	102	P/P	90 - 110
Boron	102	94.9	P/P	90 - 110
Boron	97.7	101	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	105	106	P/P	90 - 110
Chromium	105	106	P/P	90 - 110
Cobalt	100	102	P/P	90 - 110
Cobalt	103	101	P/P	90 - 110
Copper	98.1	99.2	P/P	90 - 110
Copper	98.6	98.6	P/P	90 - 110
Lead	93.8	95.5	P/P	90 - 110
Lead	95.2	96.1	P/P	90 - 110
Manganese	103	104	P/P	90 - 110
Manganese	104	104	P/P	90 - 110
Molybdenum	101	101	P/P	90 - 110
Molybdenum	98.6	99.4	P/P	90 - 110
Nickel	101	99.4	P/P	90 - 110
Nickel	98.8	101	P/P	90 - 110
Selenium	100	102	P/P	90 - 110
Selenium	102	103	P/P	90 - 110
Silver	100	102	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	102	102	P/P	90 - 110
Thallium	98.1	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011
Run ID: A121844
Included Lab Sample IDs: 2440026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.7	95.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A121844
Included Lab Sample IDs: 2440026

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A121845
Included Lab Sample IDs: 2440027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.6	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A121853
Included Lab Sample IDs: 2440027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	94.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A121931
Included Lab Sample IDs: 2440183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	104	P/P	90 - 110
Antimony	94.0	95.0	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Barium	99.6	102	P/P	90 - 110
Beryllium	98.2	100	P/P	90 - 110
Boron	98.9	96.3	P/P	90 - 110
Cadmium	98.6	98.3	P/P	90 - 110
Chromium	98.6	103	P/P	90 - 110
Cobalt	101	98.9	P/P	90 - 110
Copper	99.6	97.2	P/P	90 - 110
Lead	93.6	92.8	P/P	90 - 110
Manganese	98.9	106	P/P	90 - 110
Molybdenum	98.7	97.5	P/P	90 - 110
Nickel	99.8	98.2	P/P	90 - 110
Selenium	99.0	103	P/P	90 - 110
Silver	100	99.1	P/P	90 - 110
Thallium	97.9	97.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A121939
Included Lab Sample IDs: 2440183

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A121939

Included Lab Sample IDs: 2440183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	103	101	P/P	90 - 110
Potassium	100	103	P/P	90 - 110
Sodium	101	102	P/P	90 - 110
Strontium	96.4	99.5	P/P	90 - 110
Tin	97.7	97.3	P/P	90 - 110
Titanium	98.7	98.6	P/P	90 - 110
Vanadium	97.3	96.8	P/P	90 - 110
Zinc	95.8	97.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A122012

Included Lab Sample IDs: 2440027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.5	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A122017

Included Lab Sample IDs: 2440183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	104	P/P	90 - 110
Magnesium	106	106	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A122026

Included Lab Sample IDs: 2440032, 2440181, 2440182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	92.9		P	80 - 120
PCB-1260	96.7		P	80 - 120

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A122047

Included Lab Sample IDs: 2440027

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	92.6	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A122069

Included Lab Sample IDs: 2440032, 2440181, 2440182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	96.8		P	80 - 120
Alpha-Chlordane	90.7		P	80 - 120
Beta-BHC	108		P	80 - 120
Beta-Cyfluthrin	114		P	80 - 120
Bifenthrin	109		P	80 - 120
Carbophenothion	90.4		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E

Run ID: A122069

Included Lab Sample IDs: 2440032, 2440181, 2440182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlorothalonil	88.3		P	80 - 120
Cis-Nonachlor	116		P	80 - 120
Cypermethrin	107		P	80 - 120
Dacthal	103		P	80 - 120
DDD-p,p'	99.9		P	80 - 120
DDE-p,p'	99.6		P	80 - 120
DDT-p,p'	103		P	80 - 120
Delta-BHC	112		P	80 - 120
Deltamethrin	102		P	80 - 120
Dichlobenil	94.2		P	80 - 120
Dicofol	103		P	80 - 120
Dieldrin	98.3		P	80 - 120
Endosulfan I	80.9		P	80 - 120
Endosulfan II	111		P	80 - 120
Endosulfan Sulfate	87.4		P	80 - 120
Endrin	97.7		P	80 - 120
Endrin Aldehyde	105		P	80 - 120
Endrin Ketone	88.2		P	80 - 120
Esfenvalerate	107		P	80 - 120
Ethalfuralin	97.4		P	80 - 120
Fenpropathrin	116		P	80 - 120
Gamma-BHC	103		P	80 - 120
Gamma-Chlordane	84.7		P	80 - 120
Heptachlor	87.3		P	80 - 120
Heptachlor Epoxide	95.1		P	80 - 120
Hexachlorobenzene	98.9		P	80 - 120
Kepone	74.1*		F	80 - 120
Lambda-Cyhalothrin	108		P	80 - 120
Methoprene	80.3		P	80 - 120
Methoxychlor	95.8		P	80 - 120
MGK-264	91.4		P	80 - 120
Mirex	107		P	80 - 120
Oxychlordane	87.0		P	80 - 120
Permethrin	113		P	80 - 120
Phenothrin	117		P	80 - 120
Piperonyl Butoxide	81.9		P	80 - 120
Prallethrin	97.3		P	80 - 120
Tau-Fluvalinate	110		P	80 - 120
Tetramethrin	102		P	80 - 120
Trans-Nonachlor	103		P	80 - 120
Triclosan Methyl	87.1		P	80 - 120
Trifluralin	107		P	80 - 120

Reference Method: EPA 8276

Run ID: A122106

Included Lab Sample IDs: 2440032, 2440181

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	97.2		P	80 - 120
Toxaphene	91.4		P	80 - 120

Quality Assurance Report

Calibration Verification

Reference Method: EPA 8276
Run ID: A122156
Included Lab Sample IDs: 2440182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	103		P	80 - 120
Toxaphene	100		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)	100					1.04	
EPA 180.1 Rev. 2.0	Turbidity	104					10.2	
EPA 200.7 Rev. 4.4	Calcium	105	99.9					1.27
	Calcium	102						4.84
	Iron	106	104	104	103			0.463
	Iron	103	105	99.8				4.77
	Magnesium	108	105	104	103			0.342
	Magnesium	100						4.85
	Potassium	101	98.7	97.5	102			0.943
	Potassium	98.5						1.16
	Sodium	104	99.8	103				0.521
	Sodium	100						2.10
	Strontium	103	100	99.5	100			0.552
	Strontium	101	112	101				4.04
	Tin	103	101	99.2	101			1.67
	Tin	103	100	102				1.60
	Titanium	102	101	102	102			0.525
	Titanium	101	101	104				2.80
	Vanadium	103	101	103	102			1.25
	Vanadium	101	102	102				0.277
	Zinc	104	101	101	100			0.436
	Zinc	99.3	95.2	97.6				2.51
EPA 200.8 Rev. 5.4	Aluminum	101	98.9	99.0	94.1			0.157
	Aluminum	103	103	102				1.32
	Antimony	101	102	101	100			0.529
	Antimony	99.7	99.2	101				1.86
	Arsenic	99.3	102	100	103			1.92
	Arsenic	102	112	114				1.77
	Barium	104	104	103	104			0.913
	Barium	104	105	107				1.57
	Beryllium	102	103	103	97.7			0.0568
	Beryllium	96.0	108	103				4.71
	Boron	104	103	102	102			0.854
	Boron	105						0.0573
	Cadmium	102	102	103	105			1.16
	Cadmium	103	92.9	98.2				5.57
	Chromium	104	105	103	104			1.44
	Chromium	101	104	106				1.12
	Cobalt	102	101	101	100			0.305
	Cobalt	101	99.0	101				2.07
	Copper	99.2	98.3	97.4	93.2			0.825
	Copper	98.8	95.1	96.8				1.73
	Lead	97.1	96.6	97.0	98.4			0.361
	Lead	96.5	100	101				0.948
	Manganese	103	102	102	99.2			0.534
	Manganese	104	105	105				0.448
	Molybdenum	100	102	101	105			1.11
	Molybdenum	100	110	113				2.33
	Nickel	100	99.1	98.2	95.8			0.901
	Nickel	99.9	96.7	98.2				1.62
	Selenium	99.0	100	98.1	99.3			2.01
	Selenium	104	109	114				4.04
	Silver	112	112	110	109			1.10
	Silver	111	101	102				1.40

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.8 Rev. 5.4	Thallium	100	107	106	107		0.243
	Thallium	103	106	108			1.95
EPA 300.0 Rev. 2.1	Chloride	102	105			0.0028	
	Sulfate	104	103	102		0.503	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	100			0.484
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	96.1	105			5.27
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	103	98.4	98.4			0.0
EPA 365.1 Rev. 2.0	Total-P	101	105	103			1.53
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.7	98.3	98.7			0.406
EPA 8270E	Aldrin	78.6	50.5	54.7			7.98
	Alpha-BHC	77.6	83.6	77.1			8.12
	Alpha-Chlordane	82.7	60.5	58.0			4.29
	Beta-BHC	90.6	77.2	76.3			1.14
	Beta-Cyfluthrin	106	80.8	82.1			1.64
	Bifenthrin	89.8	63.8	68.2			6.69
	Carbophenothion	68.6	53.7	50.1			6.91
	Chlorothalonil	61.8	51.8	45.2			13.8
	Cis-Nonachlor	93.8	56.2	65.8			15.8
	Cypermethrin	98.0	85.0	81.4			4.30
	Dacthal	88.7	69.0	67.6			2.09
	DDD-p,p'	89.1	66.8	58.7			12.9
	DDE-p,p'	77.1	50.8	53.6			5.21
	DDT-p,p'	82.7	89.3	99.5			10.8
	Delta-BHC	99.5	85.8	84.4			1.65
	Deltamethrin	102	114	107			6.53
	Dichlobenil	87.9	59.9	48.0			22.0
	Dicofol	72.9	65.9	66.7			1.20
	Dieldrin	82.4	57.2	65.3			13.1
	Endosulfan I	82.1	69.4	68.5			1.28
	Endosulfan II	90.8	60.5	60.2			0.462
	Endosulfan Sulfate	77.1	73.6	65.8			11.1
	Endrin	85.1	55.8	63.3			12.5
	Endrin Aldehyde	91.1	58.6	44.8			26.6
	Endrin Ketone	72.0	70.9	61.5			14.2
	Esfenvalerate	107	92.8	96.3			3.69
	Ethalfuralin	73.6	59.4	62.4			4.94
	Fenpropathrin	97.5	76.3	70.6			7.76
	Gamma-BHC	76.0	73.0	68.4			6.53
	Gamma-Chlordane	84.0	63.8	60.4			5.52
	Heptachlor	74.9	65.5	64.5			1.54
	Heptachlor Epoxide	92.0	70.3	68.8			1.62
	Hexachlorobenzene	91.5	60.3	58.5			2.95
	Kepone	50.4	28.7	30.7			6.65
	Lambda-Cyhalothrin	102	80.3	78.6			2.14
	Methoprene	77.4	43.6	52.6			18.6
	Methoxychlor	69.0	75.3	63.6			16.9
	MGK-264	104	93.7	79.4			16.6
	Mirex	87.7	52.8	52.6			0.347
	Oxychlordane	77.7	62.6	70.0			11.1
	PCB-1016	80.0	79.8	91.5			13.7
	PCB-1260	78.2	74.6	86.7			15.0
	Permethrin	102	68.6	71.9			4.61
	Phenothrin	96.2	61.4	61.6			0.342
	Piperonyl Butoxide	89.9	105	92.3			13.1

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8270E	Prallethrin	88.6	66.1	66.2		0.147
	Tau-Fluvalinate	109	87.0	92.6		6.28
	Tetramethrin	97.6	89.3	84.8		5.19
	Trans-Nonachlor	87.4	66.8	63.4		5.22
	Triclosan Methyl	76.8	56.8	57.0		0.346
	Trifluralin	72.7	55.2	60.5		9.12
EPA 8276	Chlordane	72.8	59.2	69.4		15.9
	Toxaphene	86.7	66.1	73.5		10.6
SM 2320 B-2011	Total Alkalinity	97.3			1.06	
SM 2540 C-2015	TDS	101			7.66	
SM 2540 D-2015	TSS	93.9				
SM 4500-F- C-2011	Fluoride	101	101	101		0.0
SM 5310 B-2011	Organic Carbon	95.8	95.1	95.6		0.364

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2440026
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2440026
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2440044, 2440045, 2440183
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2440044, 2440045, 2440183
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2440026
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2440026
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2440027
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2440027
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2440027
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2440027
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2440028, 2440029
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2440032, 2440181, 2440182
EPA 8270E	PCBs in water matrices by GC/MS/MS	2440032, 2440181, 2440182
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2440032, 2440181, 2440182
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2440026
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2440044, 2440045, 2440183
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2440026
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2440026
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2440026
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2440027

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	09/26/2023			09/26/2023 15:48	Alexis Price	2440026
EPA 180.1 Rev. 2.0	09/26/2023			09/26/2023 15:00	Khloe J Berg	2440026
EPA 200.7 Rev. 4.4	09/26/2023	09/27/2023 13:05	George D Taylor	09/28/2023 12:46	Samatha Luckman	2440045
	09/26/2023	09/27/2023 13:05	George D Taylor	09/28/2023 15:59	Samatha Luckman	2440044
	09/26/2023	10/02/2023 12:30	George D Taylor	10/03/2023 08:47	McKinley C Carter	2440183
	09/26/2023	10/02/2023 12:30	George D Taylor	10/06/2023 20:07	Samatha Luckman	2440183
EPA 200.8 Rev. 5.4	09/26/2023	09/27/2023 13:05	George D Taylor	09/28/2023 16:06	Emily M Philpot	2440045
	09/26/2023	09/27/2023 13:05	George D Taylor	09/28/2023 20:06	Emily M Philpot	2440044
	09/26/2023	10/02/2023 12:30	George D Taylor	10/03/2023 16:45	Emily M Philpot	2440183
EPA 300.0 Rev. 2.1	09/26/2023			09/28/2023 13:34	James L Waggeberby	2440026
EPA 350.1 Rev. 2.0	09/26/2023			09/28/2023 15:23	Ping Hua	2440027
EPA 351.2 Rev. 2.0	09/26/2023	10/05/2023 15:15	Simonne.V. Calhoun	10/10/2023 13:34	Samantha L Bates	2440027
EPA 353.2 Rev. 2.0	09/26/2023			10/06/2023 12:44	Fadila Guebre	2440027
EPA 365.1 Rev. 2.0	09/26/2023	09/28/2023 13:36	Alexis Price	09/29/2023 11:16	Chandler E Cox	2440027
EPA 365.1 Rev. 2.0 dissolved	09/26/2023			09/26/2023 15:20	Elise M. Gillis	2440029
	09/26/2023			09/26/2023 15:26	Elise M. Gillis	2440028
EPA 8270E	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/05/2023 04:22	Julie Wi	2440032
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/05/2023 05:52	Julie Wi	2440181
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/05/2023 06:22	Julie Wi	2440182
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/09/2023 03:48	Julie Wi	2440032
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/09/2023 04:52	Julie Wi	2440181
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/09/2023 05:25	Julie Wi	2440182
EPA 8276	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/08/2023 08:55	Arthur Maknenko	2440032
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/08/2023 11:47	Arthur Maknenko	2440181
	09/26/2023	10/02/2023 08:30	Rasheda Ghaffari	10/14/2023 06:09	Arthur Maknenko	2440182
SM 2320 B-2011	09/26/2023			09/29/2023 06:09	Adam P Silver	2440026
SM 2340 B-2011	09/26/2023			09/28/2023 12:46	Samatha Luckman	2440045
	09/26/2023			09/28/2023 15:59	Samatha Luckman	2440044
	09/26/2023			10/06/2023 20:07	Samatha Luckman	2440183
SM 2540 C-2015	09/26/2023			09/27/2023 15:41	Yijie Li	2440026
SM 2540 D-2015	09/26/2023			09/27/2023 15:41	Yijie Li	2440026
SM 4500-F- C-2011	09/26/2023			09/29/2023 06:09	Adam P Silver	2440026
SM 5310 B-2011	09/26/2023			09/29/2023 01:49	Khloe J Berg	2440027