

Chemical Analysis Report

TLH-ROC-2022-08-04-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Run 5**
Request ID: **RQ-2022-05-02-71**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

For additional information please contact
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 26-AUG-2022 11:23



NON-CONFORMANCE REPORT INCLUDED

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: Sally Ward Spring

Collection Date/Time: 08/04/2022 08:45

Field ID: G1TLHR0153

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346363	DEP SOP: NU-094-1	Color (true)	6.3		PCU	P417682	
	EPA 180.1 Rev. 2.0	Turbidity	0.10	I	NTU	P417670	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P418021	
		Sulfate	13		mg SO4/L	P418026	
	SM 2320 B-2011	Total Alkalinity	150		mg CaCO3/L	P418046	
	SM 2540 C-2011	TDS	204	A	mg/L	P418184	
	SM 2540 D-2011	TSS	2	UA	mg/L	P418228	
	SM 4500-F- C-2011	Fluoride	0.15		mg F/L	P418050	
2346365	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P417973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.15	I	mg N/L	P417860	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.57		mg N/L	P417757	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P417925	
	SM 5310 B-2011	Organic Carbon	2.9		mg C/L	P417814	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Indian Springs

Collection Date/Time: 08/04/2022 09:25

Field ID: G1TLHR0154

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346364	DEP SOP: NU-094-1	Color (true)	5.0	I	PCU	P417682	
	EPA 180.1 Rev. 2.0	Turbidity	0.40	I	NTU	P417670	
	EPA 300.0 Rev. 2.1	Chloride	7.8		mg Cl/L	P418021	
		Sulfate	8.8		mg SO4/L	P418026	
	SM 2320 B-2011	Total Alkalinity	141	A	mg CaCO3/L	P418046	
	SM 2540 C-2011	TDS	173		mg/L	P418184	
	SM 2540 D-2011	TSS	2	U	mg/L	P418228	
	SM 4500-F- C-2011	Fluoride	0.14		mg F/L	P418050	
2346366	EPA 350.1 Rev. 2.0	Ammonia-N	0.011	Y	mg N/L	P417831	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	UY	mg N/L	P417861	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.19	Y	mg N/L	P417875	
	EPA 365.1 Rev. 2.0	Total-P	0.019	Y	mg P/L	P417925	
	SM 5310 B-2011	Organic Carbon	1.1	Y	mg C/L	P417899	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 350.1 Rev. 2.0: Sample stored outside of the acceptable temperature range. Please see NCR.

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample. Sample stored outside of the acceptable temperature range. Please see NCR.

EPA 353.2 Rev. 2.0: Sample stored outside of the acceptable temperature range. Please see NCR.

EPA 365.1 Rev. 2.0: Total-P: Sample stored outside of the acceptable temperature range. Please see NCR.

SM 5310 B-2011: Sample stored outside of the acceptable temperature range. Please see NCR.

Sample Location: MOORE BRANCH @ CODY CHURCH RD

Collection Date/Time: 08/04/2022 10:10

Field ID: G1TLHR0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346369	EPA 8270E	Aldrin	0.70	U	ng/L	P417708	
		Alpha-BHC	0.11	U	ng/L	P417708	
		Alpha-Chlordane	0.21	U	ng/L	P417708	
		Beta-BHC	0.11	U	ng/L	P417708	
		Beta-Cyfluthrin	1.3	U	ng/L	P417708	
		Bifenthrin	0.54	U	ng/L	P417708	
		Carbophenothion	0.97	U	ng/L	P417708	
		Chlorothalonil	1.3	U	ng/L	P417708	
		Cis-Nonachlor	0.21	U	ng/L	P417708	
		Cypermethrin	1.6	U	ng/L	P417708	
		Dacthal	0.16	U	ng/L	P417708	
		DDD-p,p'	0.27	U	ng/L	P417708	
		DDE-p,p'	0.21	U	ng/L	P417708	
		DDT-p,p'	0.27	U	ng/L	P417708	
		Delta-BHC	0.43	U	ng/L	P417708	
		Deltamethrin	1.3	U	ng/L	P417708	
		Dichlobenil	0.27	U	ng/L	P417708	
		Dicofol	1.3	U	ng/L	P417708	
		Dieldrin	0.43	U	ng/L	P417708	
		Endosulfan I	0.43	U	ng/L	P417708	
		Endosulfan II	0.43	U	ng/L	P417708	
		Endosulfan Sulfate	0.32	U	ng/L	P417708	
		Endrin	0.43	U	ng/L	P417708	
		Endrin Aldehyde	0.80	U	ng/L	P417708	
		Endrin Ketone	0.43	U	ng/L	P417708	
		Esfenvalerate	0.80	U	ng/L	P417708	
		Ethalfuralin	0.16	U	ng/L	P417708	
		Fenpropathrin	0.27	U	ng/L	P417708	
		Gamma-BHC	0.13	U	ng/L	P417708	
		Gamma-Chlordane	0.21	U	ng/L	P417708	
		Heptachlor	0.21	U	ng/L	P417708	
		Heptachlor Epoxide	0.27	U	ng/L	P417708	
		Hexachlorobenzene**	1.1	U	ng/L	P417708	
		Kepone	5.4	U	ng/L	P417708	
		Lambda-Cyhalothrin	0.80	U	ng/L	P417708	
		Methoprene	0.80	U	ng/L	P417708	
		Methoxychlor	0.32	U	ng/L	P417708	
		MGK-264	0.21	U	ng/L	P417708	
		Mirex	0.38	U	ng/L	P417708	
		Oxychlordane	0.32	U	ng/L	P417708	
		Permethrin	1.7	U	ng/L	P417708	
		Phenothrin	0.97	U	ng/L	P417708	
		Piperonyl Butoxide	0.16	U	ng/L	P417708	
		Prallethrin	2.1	U	ng/L	P417708	

Field ID: G1TLHR0041

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2346369	EPA 8270E	Tau-Fluvalinate	0.27	U	ng/L	P417708	
		Tetramethrin	0.80	U	ng/L	P417708	
		Trans-Nonachlor	0.21	U	ng/L	P417708	
		Triclosan Methyl	0.16	U	ng/L	P417708	
		Trifluralin	0.21	U	ng/L	P417708	
	EPA 8276	Chlordane	2.7	U	ng/L	P417708	
		Toxaphene	16	U	ng/L	P417708	
2346370	EPA 200.7 Rev. 4.4	Calcium	1.18		mg/L	P417780	
		Iron	856		ug/L	P417780	
		Magnesium	0.68		mg/L	P417780	
		Potassium	0.30	U	mg/L	P417780	
		Sodium	2.57		mg/L	P417780	
		Strontium	6.21	I	ug/L	P417780	
		Tin	3.0	U	ug/L	P417780	
		Titanium	1.08	I	ug/L	P417780	
		Vanadium	2.0	U	ug/L	P417780	
		Zinc	5.0	U	ug/L	P417780	
	EPA 200.8 Rev. 5.4	Aluminum	257		ug/L	P417780	
		Antimony	0.050	U	ug/L	P417780	
		Arsenic	0.30		ug/L	P417780	
		Barium	12.1		ug/L	P417780	
		Beryllium	0.042		ug/L	P417780	
		Boron	11.6		ug/L	P417780	
		Cadmium	0.020	U	ug/L	P417780	
		Chromium	0.51	I	ug/L	P417780	
		Cobalt	0.193		ug/L	P417780	
		Copper	0.40	U	ug/L	P417780	
		Lead	0.20	U	ug/L	P417780	
		Manganese	45.9		ug/L	P417780	
		Molybdenum	0.15	U	ug/L	P417780	
		Nickel	0.50	U	ug/L	P417780	
		Selenium	0.20	U	ug/L	P417780	
		Silver	0.010	U	ug/L	P417780	
		Thallium	0.10	U	ug/L	P417780	
	SM 2340 B-2011	Hardness	5.75		mg/L	P417780	

Non-Conformance Report

NCR ID: 9501

Event(s)

TLH-ROC-2022-08-04-01

Job(s)

TLH-2022-08-04-104

Sample(s)

2346366

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Receiving

Observation: Sample left unrefrigerated for more than 24 hours.

Resolution: Sample placed in refrigerator on 08/08/2022 at 13:05. Any data generated after this date/time will be qualified.

Authorized by/Date: Kyle Klug 8/9/2022

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P417682

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417780

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: P417780

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: P418021

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: P418026

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417861

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417757

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417875

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417925

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

Reference Method: EPA 8270E
Batch ID: P417708

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P417708

Component	Result	Code	Units
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	1.2	U	ng/L
Chlorothalonil	1.2	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.25	U	ng/L
DDT-p,p'	0.25	U	ng/L
Delta-BHC	0.40	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan II	0.40	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.40	U	ng/L
Endrin	0.40	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P417708

Component	Result	Code	Units
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P417708

Component	Result	Code	Units
Chlordane	2.5	U	ng/L
Chlordane	2.5	U	ng/L
Toxaphene	15	U	ng/L
Toxaphene	15	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P418046

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

Reference Method: SM 2540 C-2011
Batch ID: P418184

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P418228

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P417814

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

Reference Method: SM 5310 B-2011
Batch ID: P417899

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: P417682

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	104		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	96.5		P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417780

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	108		P	85 - 115
Magnesium	108		P	85 - 115
Potassium	102		P	85 - 115
Sodium	105		P	85 - 115
Strontium	107		P	85 - 115
Tin	103		P	85 - 115
Titanium	105		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417780

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.9		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	99.2		P	85 - 115
Barium	102		P	85 - 115
Beryllium	93.7		P	85 - 115
Boron	100		P	85 - 115
Cadmium	97.5		P	85 - 115
Chromium	97.2		P	85 - 115
Cobalt	93.9		P	85 - 115
Copper	96.9		P	85 - 115
Lead	91.5		P	85 - 115
Manganese	98.8		P	85 - 115
Molybdenum	95.5		P	85 - 115
Nickel	97.3		P	85 - 115
Selenium	100		P	85 - 115
Silver	96.5		P	85 - 115
Thallium	91.9		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417861

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417757

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P417925

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

Reference Method: EPA 8270E
Batch ID: P417708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	65.7		P	10 - 92.0
Alpha-BHC	88.3		P	75 - 107
Alpha-Chlordane	80.8		P	50 - 108
Beta-BHC	98.2		P	36 - 138

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P417708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beta-Cyfluthrin	108		P	20 - 161
Bifenthrin	87.4		P	10 - 119
Carbophenothion	75.3		P	19 - 94.0
Chlorothalonil	96.9		P	26 - 186
Cis-Nonachlor	83.6		P	42 - 119
Cypermethrin	115		P	22 - 150
Dacthal	105		P	72 - 119
DDD-p,p'	79.5		P	45 - 107
DDE-p,p'	89.6		P	48 - 106
DDT-p,p'	83.1		P	48 - 110
Delta-BHC	110		P	54 - 140
Deltamethrin	110		P	22 - 189
Dichlobenil	80.2		P	36 - 117
Dicofol	85.7		P	46 - 155
Dieldrin	92.1		P	54 - 110
Endosulfan I	90.0		P	59 - 105
Endosulfan II	88.9		P	51 - 118
Endosulfan Sulfate	90.6		P	57 - 121
Endrin	88.4		P	10 - 120
Endrin Aldehyde	73.3		P	34 - 118
Endrin Ketone	90.4		P	69 - 177
Esfenvalerate	113		P	23 - 168
Ethalfuralin	86.2		P	49 - 99.0
Fenpropathrin	91.0		P	34 - 117
Gamma-BHC	98.3		P	72 - 117
Gamma-Chlordane	86.0		P	43 - 106
Heptachlor	74.3		P	41 - 98.0
Heptachlor Epoxide	88.0		P	57 - 106
Hexachlorobenzene	68.6		P	36 - 99.0
Kepone	31.3		P	16 - 215
Lambda-Cyhalothrin	95.7		P	21 - 177
Methoprene	90.7		P	10 - 119
Methoxychlor	92.1		P	60 - 112
MGK-264	92.7		P	26 - 122
Mirex	70.1		P	10 - 169
Oxychlordane	87.4		P	43 - 105
Permethrin	105		P	24 - 148
Phenothrin	78.4		P	10 - 106
Piperonyl Butoxide	127		P	10 - 139
Prallethrin	104		P	17 - 109
Tau-Fluvalinate	101		P	13 - 131
Tetramethrin	103		P	10 - 132
Trans-Nonachlor	92.9		P	44 - 106
Triclosan Methyl	86.3		P	59 - 109
Trifluralin	82.8		P	44 - 101

Reference Method: EPA 8276

Batch ID: P417708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	113		P	61 - 116
Toxaphene	122		P	48 - 124

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P418046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	94 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417814

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P417899

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P417780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346370	Calcium	107	106	P/P	80 - 120
2346370	Iron	109	111	P/P	80 - 120
2346370	Magnesium	108	109	P/P	80 - 120
2346370	Potassium	107	105	P/P	80 - 120
2346370	Sodium	106	108	P/P	80 - 120
2346370	Strontium	108	108	P/P	80 - 120
2346370	Tin	104	101	P/P	80 - 120
2346370	Titanium	106	105	P/P	80 - 120
2346370	Vanadium	103	102	P/P	80 - 120
2346370	Zinc	105	103	P/P	80 - 120
2346511	Calcium	104		P	80 - 120
2346511	Iron	109		P	80 - 120
2346511	Magnesium	106		P	80 - 120
2346511	Potassium	99.8		P	80 - 120
2346511	Sodium	104		P	80 - 120
2346511	Strontium	105		P	80 - 120
2346511	Tin	101		P	80 - 120
2346511	Titanium	104		P	80 - 120
2346511	Vanadium	102		P	80 - 120
2346511	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P417780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346370	Aluminum	100	99.5	P/P	80 - 120
2346370	Antimony	100	101	P/P	80 - 120
2346370	Arsenic	98.9	98.7	P/P	80 - 120
2346370	Barium	102	102	P/P	80 - 120
2346370	Beryllium	92.1	92.0	P/P	80 - 120
2346370	Boron	102	104	P/P	80 - 120
2346370	Cadmium	97.5	97.4	P/P	80 - 120
2346370	Chromium	97.6	98.6	P/P	80 - 120
2346370	Cobalt	93.1	93.6	P/P	80 - 120
2346370	Copper	96.2	96.3	P/P	80 - 120
2346370	Lead	92.5	93.2	P/P	80 - 120
2346370	Manganese	98.9	101	P/P	80 - 120
2346370	Molybdenum	96.2	96.4	P/P	80 - 120
2346370	Nickel	97.3	98.2	P/P	80 - 120
2346370	Selenium	99.4	97.4	P/P	80 - 120
2346370	Silver	96.4	96.0	P/P	80 - 120
2346370	Thallium	93.5	94.7	P/P	80 - 120
2346511	Aluminum	95.3		P	80 - 120
2346511	Antimony	99.9		P	80 - 120
2346511	Arsenic	97.4		P	80 - 120
2346511	Barium	98.9		P	80 - 120
2346511	Beryllium	92.5		P	80 - 120
2346511	Boron	99.8		P	80 - 120
2346511	Cadmium	97.0		P	80 - 120
2346511	Chromium	94.4		P	80 - 120
2346511	Cobalt	91.3		P	80 - 120
2346511	Copper	90.7		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417780

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346511	Lead	92.0		P	80 - 120
2346511	Manganese	98.0		P	80 - 120
2346511	Molybdenum	95.0		P	80 - 120
2346511	Nickel	94.1		P	80 - 120
2346511	Selenium	94.4		P	80 - 120
2346511	Silver	91.1		P	80 - 120
2346511	Thallium	93.6		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346156	Chloride	96.8		P	90 - 110
2346288	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346156	Sulfate	91.9		P	90 - 110
2346288	Sulfate	93.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346366	Ammonia-N	99.8	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346336	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346365	Kjeldahl Nitrogen	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417757

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346289	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2345668	NO2NO3-N	98.0	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417925

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346375	Total-P	104	103	P/P	90 - 110

Reference Method: EPA 8270E

Batch ID: P417708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346396	Aldrin	78.1	63.1	P/P	20 - 82.0
2346396	Alpha-BHC	90.7	82.7	P/P	71 - 109
2346396	Alpha-Chlordane	86.4	69.2	P/P	42 - 106
2346396	Beta-BHC	118	94.7	P/P	69 - 180
2346396	Beta-Cyfluthrin	100	92.7	P/P	18 - 175
2346396	Bifenthrin	91.4	78.3	P/P	21 - 128
2346396	Carbophenothion	58.9	49.1	P/P	10 - 126
2346396	Chlorothalonil	134	110	P/P	10 - 300
2346396	Cis-Nonachlor	87.4	70.5	P/P	34 - 106
2346396	Cypermethrin	106	93.8	P/P	22 - 158
2346396	Dacthal	106	86.2	P/P	54 - 116
2346396	DDD-p,p'	80.7	65.2	P/P	34 - 107
2346396	DDE-p,p'	94.0	70.4	P/P	33 - 110
2346396	DDT-p,p'	78.9	64.5	P/P	50 - 122
2346396	Delta-BHC	129	106	P/P	77 - 193
2346396	Deltamethrin	111	104	P/P	10 - 195
2346396	Dichlobenil	53.7	57.0	P/P	25 - 113
2346396	Dicofol	92.4	70.7	P/P	38 - 247
2346396	Dieldrin	79.4	63.4	P/P	45 - 118
2346396	Endosulfan I	84.8	69.4	P/P	51 - 106
2346396	Endosulfan II	85.3	71.0	P/P	37 - 122
2346396	Endosulfan Sulfate	71.9	69.1	P/P	43 - 132
2346396	Endrin	95.7	75.4	P/P	29 - 101
2346396	Endrin Aldehyde	66.1	50.4	P/P	19 - 110
2346396	Endrin Ketone	81.4	76.6	P/P	60 - 140
2346396	Esfenvalerate	108	97.7	P/P	26 - 199
2346396	Ethalfuralin	83.0	73.2	P/P	45 - 99.0
2346396	Fenpropathrin	82.9	77.1	P/P	35 - 120
2346396	Gamma-BHC	107	90.9	P/P	63 - 128
2346396	Gamma-Chlordane	85.1	66.8	P/P	40 - 104
2346396	Heptachlor	70.6	59.3	P/P	36 - 97.0
2346396	Heptachlor Epoxide	93.3	74.0	P/P	49 - 184
2346396	Hexachlorobenzene	73.6	60.0	P/P	39 - 96.0
2346396	Kepone	31.8	25.7	P/P	10 - 217
2346396	Lambda-Cyhalothrin	92.9	87.0	P/P	21 - 193
2346396	Methoprene	93.0	75.5	P/P	20 - 106
2346396	Methoxychlor	94.3	72.6	P/P	53 - 118
2346396	MGK-264	112	96.0	P/P	40 - 118
2346396	Mirex	79.7	58.7	P/P	26 - 92.0
2346396	Oxychlordane	92.1	81.8	P/P	44 - 99.0
2346396	Permethrin	97.1	89.7	P/P	33 - 182
2346396	Phenothrin	96.5	78.9	P/P	10 - 129
2346396	Piperonyl Butoxide	128	103	P/P	10 - 211
2346396	Prallethrin	103	91.4	P/P	24 - 113
2346396	Tau-Fluvalinate	101	94.2	P/P	14 - 149
2346396	Tetramethrin	108	93.7	P/P	17 - 151

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P417708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346396	Trans-Nonachlor	89.4	70.6	P/P	42 - 102
2346396	Triclosan Methyl	82.1	67.3	P/P	48 - 108
2346396	Trifluralin	87.0	72.4	P/P	47 - 96.0

Reference Method: EPA 8276
Batch ID: P417708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346617	Chlordane	106	102	P/P	53 - 126
2346617	Toxaphene	124	125	P/P	56 - 211

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346364	Fluoride	101	99.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P417814

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346159	Organic Carbon	94.6	94.2	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P417899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2346547	Organic Carbon	99.8	99.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P417682

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346288	Color (true)	0.187	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P417670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346247	Turbidity	2.20	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P417780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346370	Calcium	0.705	Spike	P	0 - 20
2346370	Iron	1.44	Spike	P	0 - 20
2346370	Magnesium	0.776	Spike	P	0 - 20
2346370	Potassium	1.60	Spike	P	0 - 20
2346370	Sodium	0.719	Spike	P	0 - 20
2346370	Strontium	0.0218	Spike	P	0 - 20
2346370	Tin	3.08	Spike	P	0 - 20
2346370	Titanium	1.27	Spike	P	0 - 20
2346370	Vanadium	0.696	Spike	P	0 - 20
2346370	Zinc	1.03	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P417780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346370	Aluminum	0.719	Spike	P	0 - 20
2346370	Antimony	0.0347	Spike	P	0 - 20
2346370	Arsenic	0.106	Spike	P	0 - 20
2346370	Barium	0.284	Spike	P	0 - 20
2346370	Beryllium	0.0865	Spike	P	0 - 20
2346370	Boron	1.24	Spike	P	0 - 20
2346370	Cadmium	0.113	Spike	P	0 - 20
2346370	Chromium	1.00	Spike	P	0 - 20
2346370	Cobalt	0.482	Spike	P	0 - 20
2346370	Copper	0.148	Spike	P	0 - 20
2346370	Lead	0.784	Spike	P	0 - 20
2346370	Manganese	1.09	Spike	P	0 - 20
2346370	Molybdenum	0.153	Spike	P	0 - 20
2346370	Nickel	0.959	Spike	P	0 - 20
2346370	Selenium	2.00	Spike	P	0 - 20
2346370	Silver	0.472	Spike	P	0 - 20
2346370	Thallium	1.24	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418021

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	Chloride	0.269	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P418026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346156	Sulfate	0.0297	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417831

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346366	Ammonia-N	0.655	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P417973

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346336	Ammonia-N	1.08	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417860

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346365	Kjeldahl Nitrogen	0.0512	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P417861

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346469	Kjeldahl Nitrogen	5.59	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417757

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346289	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P417875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2345668	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P417925

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346375	Total-P	0.812	Spike	P	0 - 20

Reference Method: EPA 8270E

Batch ID: P417708

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346396	Aldrin	21.3	Spike	P	0 - 41
2346396	Alpha-BHC	9.24	Spike	P	0 - 25
2346396	Alpha-Chlordane	22.1	Spike	P	0 - 33
2346396	Beta-BHC	21.8	Spike	P	0 - 36
2346396	Beta-Cyfluthrin	7.82	Spike	P	0 - 42
2346396	Bifenthrin	15.3	Spike	P	0 - 53
2346396	Carbophenothion	18.2	Spike	P	0 - 30
2346396	Chlorothalonil	19.7	Spike	P	0 - 71
2346396	Cis-Nonachlor	21.4	Spike	P	0 - 29
2346396	Cypermethrin	12.2	Spike	P	0 - 40
2346396	Dacthal	20.3	Spike	P	0 - 26
2346396	DDD-p,p'	21.3	Spike	P	0 - 39
2346396	DDE-p,p'	28.7	Spike	P	0 - 33
2346396	DDT-p,p'	20.1	Spike	P	0 - 40
2346396	Delta-BHC	19.6	Spike	P	0 - 37
2346396	Deltamethrin	6.84	Spike	P	0 - 100
2346396	Dichlobenil	5.94	Spike	P	0 - 40
2346396	Dicofol	26.6	Spike	P	0 - 31
2346396	Dieldrin	22.4	Spike	P	0 - 27
2346396	Endosulfan I	19.9	Spike	P	0 - 23
2346396	Endosulfan II	18.3	Spike	P	0 - 28
2346396	Endosulfan Sulfate	3.90	Spike	P	0 - 38
2346396	Endrin	23.7	Spike	P	0 - 63
2346396	Endrin Aldehyde	27.0	Spike	P	0 - 60
2346396	Endrin Ketone	6.12	Spike	P	0 - 37
2346396	Esfenvalerate	10.3	Spike	P	0 - 52
2346396	Ethalfuralin	12.6	Spike	P	0 - 23
2346396	Fenpropathrin	7.19	Spike	P	0 - 32
2346396	Gamma-BHC	16.6	Spike	P	0 - 17
2346396	Gamma-Chlordane	24.1	Spike	P	0 - 40
2346396	Heptachlor	17.3	Spike	P	0 - 29
2346396	Heptachlor Epoxide	23.0	Spike	P	0 - 25
2346396	Hexachlorobenzene	20.4	Spike	P	0 - 36
2346396	Kepone	21.2	Spike	P	0 - 93
2346396	Lambda-Cyhalothrin	6.53	Spike	P	0 - 55
2346396	Methoprene	20.7	Spike	P	0 - 53
2346396	Methoxychlor	25.9	Spike	P	0 - 29
2346396	MGK-264	15.0	Spike	P	0 - 35
2346396	Mirex	30.3	Spike	P	0 - 46
2346396	Oxychlordane	11.8	Spike	P	0 - 29
2346396	Permethrin	7.93	Spike	P	0 - 44
2346396	Phenothrin	20.1	Spike	P	0 - 56
2346396	Piperonyl Butoxide	22.0	Spike	P	0 - 100
2346396	Prallethrin	12.2	Spike	P	0 - 42

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P417708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346396	Tau-Fluvalinate	7.15	Spike	P	0 - 54
2346396	Tetramethrin	14.1	Spike	P	0 - 51
2346396	Trans-Nonachlor	23.5	Spike	P	0 - 37
2346396	Triclosan Methyl	19.9	Spike	P	0 - 31
2346396	Trifluralin	18.3	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P417708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346617	Chlordane	4.21	Spike	P	0 - 25
2346617	Toxaphene	0.505	Spike	P	0 - 26

Reference Method: SM 2320 B-2011
Batch ID: P418046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346364	Total Alkalinity	1.24	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2011
Batch ID: P418184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346363	TDS	0.980	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P418050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346364	Fluoride	0.953	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P417814

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346159	Organic Carbon	0.207	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P417899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2346547	Organic Carbon	0.0649	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2346369

Field Sample ID: G1TLHR0041

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	90.8	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	67.2	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	88.3	P	30 - 101
EPA 8276	PCNB	105	P	48 - 121

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A113916

Included Lab Sample IDs: 2346363, 2346364

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

Reference Method: DEP SOP: NU-094-1

Run ID: A113919

Included Lab Sample IDs: 2346363, 2346364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A113955

Included Lab Sample IDs: 2346365

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

Reference Method: SM 5310 B-2011

Run ID: A113980

Included Lab Sample IDs: 2346365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	97.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A113987

Included Lab Sample IDs: 2346366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A114001

Included Lab Sample IDs: 2346366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A114005

Included Lab Sample IDs: 2346366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	98.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A114030

Included Lab Sample IDs: 2346365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.4	99.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A114036

Included Lab Sample IDs: 2346365, 2346366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.2	97.5	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A114042

Included Lab Sample IDs: 2346369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	111		P	80 - 120
Alpha-BHC	106		P	80 - 120
Alpha-Chlordane	96.6		P	80 - 120
Beta-BHC	103		P	80 - 120
Beta-Cyfluthrin	99.4		P	80 - 120
Bifenthrin	95.8		P	80 - 120
Carbophenothion	94.3		P	80 - 120
Chlorothalonil	115		P	80 - 120
Cis-Nonachlor	92.4		P	80 - 120
Cypermethrin	102		P	80 - 120
Dacthal	103		P	80 - 120
DDD-p,p'	101		P	80 - 120
DDE-p,p'	108		P	80 - 120
DDT-p,p'	103		P	80 - 120
Delta-BHC	114		P	80 - 120
Deltamethrin	99.2		P	80 - 120
Dichlobenil	110		P	80 - 120
Dicofol	96.4		P	80 - 120
Dieldrin	110		P	80 - 120
Endosulfan I	105		P	80 - 120
Endosulfan II	99.7		P	80 - 120
Endosulfan Sulfate	91.6		P	80 - 120
Endrin	107		P	80 - 120
Endrin Aldehyde	98.8		P	80 - 120
Endrin Ketone	92.0		P	80 - 120
Esfenvalerate	100		P	80 - 120
Ethalfuralin	99.2		P	80 - 120
Fenpropathrin	86.2		P	80 - 120
Gamma-BHC	116		P	80 - 120
Gamma-Chlordane	102		P	80 - 120
Heptachlor	103		P	80 - 120
Heptachlor Epoxide	112		P	80 - 120
Hexachlorobenzene	104		P	80 - 120
Kepone	105		P	80 - 120
Lambda-Cyhalothrin	93.6		P	80 - 120
Methoprene	104		P	80 - 120
Methoxychlor	112		P	80 - 120
MGK-264	105		P	80 - 120
Mirex	97.6		P	80 - 120
Oxychlordane	111		P	80 - 120
Permethrin	94.8		P	80 - 120
Phenothrin	88.3		P	80 - 120
Piperonyl Butoxide	101		P	80 - 120
Prallethrin	110		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A114042
Included Lab Sample IDs: 2346369

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tau-Fluvalinate	95.8		P	80 - 120
Tetramethrin	83.6		P	80 - 120
Trans-Nonachlor	98.7		P	80 - 120
Triclosan Methyl	96.6		P	80 - 120
Trifluralin	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A114044
Included Lab Sample IDs: 2346370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	98.4	P/P	90 - 110
Antimony	98.9	101	P/P	90 - 110
Arsenic	102	101	P/P	90 - 110
Barium	99.0	99.0	P/P	90 - 110
Beryllium	96.9	97.8	P/P	90 - 110
Boron	98.2	99.3	P/P	90 - 110
Cadmium	101	103	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Cobalt	97.0	96.3	P/P	90 - 110
Copper	101	100	P/P	90 - 110
Lead	92.1	91.7	P/P	90 - 110
Manganese	101	103	P/P	90 - 110
Molybdenum	97.3	97.9	P/P	90 - 110
Nickel	100	99.4	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	96.5	96.7	P/P	90 - 110
Thallium	96.9	97.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A114048
Included Lab Sample IDs: 2346363, 2346364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	104	102	P/P	90 - 110
Sulfate	102	99.5	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A114059
Included Lab Sample IDs: 2346363, 2346364

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.9	99.7	P/P	90 - 110
Total Alkalinity	99.7	97.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A114059
Included Lab Sample IDs: 2346363, 2346364

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

Quality Assurance Report Calibration Verification

Reference Method: SM 4500-F- C-2011

Run ID: A114059

Included Lab Sample IDs: 2346363, 2346364

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

Reference Method: EPA 8276

Run ID: A114085

Included Lab Sample IDs: 2346369

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114116

Included Lab Sample IDs: 2346365

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	93.4	91.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A114118

Included Lab Sample IDs: 2346366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	90.5	91.7	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114179

Included Lab Sample IDs: 2346370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	101	103	P/P	90 - 110
Iron	105	105	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Potassium	98.9	98.4	P/P	90 - 110
Sodium	102	104	P/P	90 - 110
Strontium	101	103	P/P	90 - 110
Titanium	101	103	P/P	90 - 110
Vanadium	97.1	98.6	P/P	90 - 110
Zinc	99.9	102	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A114202

Included Lab Sample IDs: 2346370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tin	104	102	P/P	95 - 105

* 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			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	104				0.187	
EPA 180.1 Rev. 2.0	Turbidity	96.5				2.20	
EPA 200.7 Rev. 4.4	Calcium	105	107	106	104		0.705
	Iron	108	109	111	109		1.44
	Magnesium	108	108	109	106		0.776
	Potassium	102	107	105	99.8		1.60
	Sodium	105	106	108	104		0.719
	Strontium	107	105	108	108		0.0218
	Tin	103	104	101	101		3.08
	Titanium	105	104	106	105		1.27
	Vanadium	101	102	103	102		0.696
	Zinc	102	105	103	103		1.03
EPA 200.8 Rev. 5.4	Aluminum	98.9	100	99.5	95.3		0.719
	Antimony	101	100	101	99.9		0.0347
	Arsenic	99.2	98.9	98.7	97.4		0.106
	Barium	102	102	102	98.9		0.284
	Beryllium	93.7	92.1	92.0	92.5		0.0865
	Boron	100	102	104	99.8		1.24
	Cadmium	97.5	97.5	97.4	97.0		0.113
	Chromium	97.2	97.6	98.6	94.4		1.00
	Cobalt	93.9	93.1	93.6	91.3		0.482
	Copper	96.9	96.2	96.3	90.7		0.148
	Lead	91.5	92.5	93.2	92.0		0.784
	Manganese	98.8	98.9	101	98.0		1.09
	Molybdenum	95.5	96.2	96.4	95.0		0.153
	Nickel	97.3	97.3	98.2	94.1		0.959
	Selenium	100	99.4	97.4	94.4		2.00
	Silver	96.5	96.4	96.0	91.1		0.472
	Thallium	91.9	93.5	94.7	93.6		1.24
EPA 300.0 Rev. 2.1	Chloride	102	96.8	96.8		0.269	
	Sulfate	98.8	91.9	93.7		0.0297	
EPA 350.1 Rev. 2.0	Ammonia-N	98.8	99.8	101			0.655
	Ammonia-N	95.4	98.8	100			1.08
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.6	102	102			0.0512
	Kjeldahl Nitrogen	97.1					5.59
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	100			0.0
	NO2NO3-N	97.0	98.0	98.0			0.0
EPA 365.1 Rev. 2.0	Total-P	103	104	103			0.812
EPA 8270E	Aldrin	65.7	78.1	63.1			21.3
	Alpha-BHC	88.3	90.7	82.7			9.24
	Alpha-Chlordane	80.8	86.4	69.2			22.1
	Beta-BHC	98.2	118	94.7			21.8
	Beta-Cyfluthrin	108	100	92.7			7.82
	Bifenthrin	87.4	91.4	78.3			15.3
	Carbophenothion	75.3	58.9	49.1			18.2
	Chlorothalonil	96.9	134	110			19.7
	Cis-Nonachlor	83.6	87.4	70.5			21.4
	Cypermethrin	115	106	93.8			12.2
	Dacthal	105	106	86.2			20.3
	DDD-p,p'	79.5	80.7	65.2			21.3
	DDE-p,p'	89.6	94.0	70.4			28.7
	DDT-p,p'	83.1	78.9	64.5			20.1
	Delta-BHC	110	129	106			19.6
	Deltamethrin	110	111	104			6.84

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Dichlobenil	80.2	53.7	57.0			5.94
	Dicofol	85.7	92.4	70.7			26.6
	Dieldrin	92.1	79.4	63.4			22.4
	Endosulfan I	90.0	84.8	69.4			19.9
	Endosulfan II	88.9	85.3	71.0			18.3
	Endosulfan Sulfate	90.6	71.9	69.1			3.90
	Endrin	88.4	95.7	75.4			23.7
	Endrin Aldehyde	73.3	66.1	50.4			27.0
	Endrin Ketone	90.4	81.4	76.6			6.12
	Esfenvalerate	113	108	97.7			10.3
	Ethalfuralin	86.2	83.0	73.2			12.6
	Fenpropathrin	91.0	82.9	77.1			7.19
	Gamma-BHC	98.3	107	90.9			16.6
	Gamma-Chlordane	86.0	85.1	66.8			24.1
	Heptachlor	74.3	70.6	59.3			17.3
	Heptachlor Epoxide	88.0	93.3	74.0			23.0
	Hexachlorobenzene	68.6	73.6	60.0			20.4
	Kepone	31.3	31.8	25.7			21.2
	Lambda-Cyhalothrin	95.7	92.9	87.0			6.53
	Methoprene	90.7	93.0	75.5			20.7
	Methoxychlor	92.1	94.3	72.6			25.9
	MGK-264	92.7	112	96.0			15.0
	Mirex	70.1	79.7	58.7			30.3
	Oxychlordane	87.4	92.1	81.8			11.8
	Permethrin	105	97.1	89.7			7.93
	Phenothrin	78.4	96.5	78.9			20.1
	Piperonyl Butoxide	127	128	103			22.0
	Prallethrin	104	103	91.4			12.2
	Tau-Fluvalinate	101	101	94.2			7.15
	Tetramethrin	103	108	93.7			14.1
	Trans-Nonachlor	92.9	89.4	70.6			23.5
	Triclosan Methyl	86.3	82.1	67.3			19.9
	Trifluralin	82.8	87.0	72.4			18.3
EPA 8276	Chlordane	113	106	102			4.21
	Toxaphene	122	124	125			0.505
SM 2320 B-2011	Total Alkalinity	99.2				1.24	
SM 2540 C-2011	TDS					0.980	
SM 4500-F- C-2011	Fluoride	100	101	99.6			0.953
SM 5310 B-2011	Organic Carbon	99.0	94.6	94.2			0.207
	Organic Carbon	97.4	99.8	99.8			0.0649

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2346363, 2346364
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2346363, 2346364
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2346370
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2346370
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2346363, 2346364
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2346363, 2346364
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2346365, 2346366

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2346365, 2346366
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2346365, 2346366
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2346365, 2346366
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2346369
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2346369
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2346363, 2346364
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2346370
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2346363, 2346364
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2346363, 2346364
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2346363, 2346364
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2346365, 2346366

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	08/04/2022			08/04/2022 15:50	Blanca Fach	2346363
	08/04/2022			08/04/2022 15:51	Blanca Fach	2346364
EPA 180.1 Rev. 2.0	08/04/2022			08/04/2022 14:31	Anna M. Plaviak	2346363
	08/04/2022			08/04/2022 14:32	Anna M. Plaviak	2346364
EPA 200.7 Rev. 4.4	08/04/2022	08/09/2022 09:34	Mackenzie Hunt	08/17/2022 17:49	McKinley C Carter	2346370
	08/04/2022	08/09/2022 09:34	Mackenzie Hunt	08/18/2022 19:00	McKinley C Carter	2346370
EPA 200.8 Rev. 5.4	08/04/2022	08/09/2022 09:34	Mackenzie Hunt	08/11/2022 14:54	Emily M Philpot	2346370
EPA 300.0 Rev. 2.1	08/04/2022			08/11/2022 22:54	Anna M. Plaviak	2346363
	08/04/2022			08/11/2022 23:06	Anna M. Plaviak	2346364
EPA 350.1 Rev. 2.0	08/04/2022			08/09/2022 11:41	Judith K. Clark	2346366
	08/04/2022			08/11/2022 11:37	Ping Hua	2346365
EPA 351.2 Rev. 2.0	08/04/2022	08/10/2022 13:15	Simonne.V. Calhoun	08/15/2022 15:44	Samantha L Bates	2346365
	08/04/2022	08/10/2022 13:15	Simonne.V. Calhoun	08/15/2022 17:30	Samantha L Bates	2346366
EPA 353.2 Rev. 2.0	08/04/2022			08/08/2022 11:17	Beverly Y. Sanders	2346365
	08/04/2022			08/10/2022 09:23	Beverly Y. Sanders	2346366
EPA 365.1 Rev. 2.0	08/04/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:18	Simonne.V. Calhoun	2346365
	08/04/2022	08/10/2022 16:53	Adam P Silver	08/11/2022 13:19	Simonne.V. Calhoun	2346366
EPA 8270E	08/04/2022	08/09/2022 08:00	Fe-Val Siddell	08/11/2022 17:03	Vandana T. Nagar	2346369
EPA 8276	08/04/2022	08/09/2022 08:00	Fe-Val Siddell	08/12/2022 10:38	Arthur Maknenko	2346369
SM 2320 B-2011	08/04/2022			08/12/2022 00:55	Dale L. Simmons	2346364
	08/04/2022			08/12/2022 04:56	Dale L. Simmons	2346363
SM 2340 B-2011	08/04/2022			08/17/2022 17:49	McKinley C Carter	2346370
SM 2540 C-2011	08/04/2022			08/09/2022 15:22	Yijie Li	2346363, 2346364
SM 2540 D-2011	08/04/2022			08/09/2022 15:22	Yijie Li	2346363, 2346364
SM 4500-F- C-2011	08/04/2022			08/12/2022 00:44	Dale L. Simmons	2346364
	08/04/2022			08/12/2022 04:56	Dale L. Simmons	2346363
SM 5310 B-2011	08/04/2022			08/09/2022 04:33	Khloe J Berg	2346365
	08/04/2022			08/09/2022 20:26	Khloe J Berg	2346366