

Chemical Analysis Report

NE-DIST-2023-02-17-01

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

Event Description: **LSJR East**
Request ID: **RQ-2023-02-13-12**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Chris Bowen, B.S.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 09-MAR-2023 11:00



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: OPEN CREEK AT SAN PABLO ROAD

Collection Date/Time: 02/16/2023 09:00

Field ID: 20030695

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388346	EPA 8270E	Aldrin	0.68	U	ng/L	P426345	
		Alpha-BHC	0.10	U	ng/L	P426345	
		Alpha-Chlordane	0.21	U	ng/L	P426345	
		PCB-1016	2.1	U	ng/L	P426345	
		Beta-BHC	0.10	U	ng/L	P426345	
		PCB-1221	2.1	U	ng/L	P426345	
		Beta-Cyfluthrin	1.3	U	ng/L	P426345	
		PCB-1232	2.1	U	ng/L	P426345	
		Bifenthrin	0.52	U	ng/L	P426345	
		PCB-1242	2.1	U	ng/L	P426345	
		PCB-1248	2.1	U	ng/L	P426345	
		Chlorothalonil	3.8	U	ng/L	P426345	
		PCB-1254	2.1	U	ng/L	P426345	
		Cis-Nonachlor	0.21	U	ng/L	P426345	
		PCB-1260	2.1	U	ng/L	P426345	
		Cypermethrin	1.6	U	ng/L	P426345	
		Dacthal	0.16	U	ng/L	P426345	
		DDD-p,p'	0.26	U	ng/L	P426345	
		DDE-p,p'	0.21	U	ng/L	P426345	
		DDT-p,p'	0.26	U	ng/L	P426345	
		Delta-BHC	0.42	U	ng/L	P426345	
		Deltamethrin	1.3	U	ng/L	P426345	
		Dichlobenil	0.26	U	ng/L	P426345	
		Dicofol	1.3	U	ng/L	P426345	
		Dieldrin	0.42	U	ng/L	P426345	
		Endosulfan I	0.42	U	ng/L	P426345	
		Endosulfan II	0.42	U	ng/L	P426345	
		Endosulfan Sulfate	0.31	U	ng/L	P426345	
		Endrin	0.42	U	ng/L	P426345	
		Endrin Aldehyde	0.78	U	ng/L	P426345	
		Endrin Ketone	0.42	U	ng/L	P426345	MS
		Esfenvalerate	0.78	U	ng/L	P426345	
		Ethalfuralin	0.16	U	ng/L	P426345	
		Fenpropathrin	0.26	U	ng/L	P426345	
		Gamma-BHC	0.13	U	ng/L	P426345	
		Gamma-Chlordane	0.21	U	ng/L	P426345	
		Heptachlor	0.21	U	ng/L	P426345	
		Heptachlor Epoxide	0.26	U	ng/L	P426345	
		Hexachlorobenzene**	1.0	U	ng/L	P426345	
		Kepone	5.2	U	ng/L	P426345	
		Lambda-Cyhalothrin	0.78	U	ng/L	P426345	
		Methoprene	0.78	U	ng/L	P426345	
		Methoxychlor	0.31	U	ng/L	P426345	
		MGK-264	0.21	U	ng/L	P426345	

Field ID: 20030695

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388346	EPA 8270E	Mirex	0.36	U	ng/L	P426345	
		Oxychlordane	0.31	U	ng/L	P426345	
		Permethrin	1.7	U	ng/L	P426345	MS
		Phenothrin	0.94	U	ng/L	P426345	
		Piperonyl Butoxide	0.22	I J	ng/L	P426345	LCS
		Prallethrin	2.1	U	ng/L	P426345	
		Tau-Fluvalinate	0.26	U	ng/L	P426345	
		Tetramethrin	0.78	U	ng/L	P426345	
		Trans-Nonachlor	0.21	U	ng/L	P426345	
		Triclosan Methyl	0.16	U	ng/L	P426345	
		Trifluralin	0.21	U	ng/L	P426345	
	EPA 8276	Chlordane	2.1	U	ng/L	P426345	
		Toxaphene	140		ng/L	P426345	

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

Sample Location: GREENFIELD CREEK @ QUEENS HARBOUR BLVD.

Collection Date/Time: 02/16/2023 09:40

Field ID: 20030809

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388347	EPA 200.7 Rev. 4.4	Calcium	75.5		mg/L	P426158	
		Iron	450		ug/L	P426158	
		Magnesium	125		mg/L	P426158	
		Strontium	968		ug/L	P426158	
		Tin	3.0	U	ug/L	P426158	
		Titanium	3.8		ug/L	P426158	
		Vanadium	2.5	I	ug/L	P426158	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P426158	
		Aluminum	219		ug/L	P426158	
		Antimony	0.13	I	ug/L	P426158	
		Arsenic	0.98		ug/L	P426158	
		Beryllium	0.030	I	ug/L	P426158	
		Cadmium	0.020	U	ug/L	P426158	
		Chromium	0.50	I	ug/L	P426158	
		Cobalt	0.096		ug/L	P426158	
		Copper	4.56		ug/L	P426158	
		Lead	0.25	I	ug/L	P426158	
		Manganese	26.5		ug/L	P426158	
		Molybdenum	0.92		ug/L	P426158	
		Nickel	0.50	U	ug/L	P426158	
		Selenium	0.25	I	ug/L	P426158	
		Silver	0.010	U	ug/L	P426328	
		Thallium	0.10	U	ug/L	P426158	

Ref. Method and Comment:

EPA 200.8 Rev. 5.4: The copper result was confirmed in the undigested sample on 02/24/2023.

Sample Location: Greenfield cr. at Hodges rd.

Collection Date/Time: 02/16/2023 10:00

Field ID: G2NE1145

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2388336	DEP SOP: NU-094-1	Color (true)	50	A	PCU	P426020	
	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P426043	
	EPA 300.0 Rev. 2.1	Chloride	46		mg Cl/L	P426648	
		Sulfate	49		mg SO4/L	P426652	
	SM 2320 B-2011	Total Alkalinity	96	A	mg CaCO3/L	P426294	
	SM 2540 C-2015	TDS	283		mg/L	P426485	
	SM 2540 D-2015	TSS	3	I	mg/L	P426376	
	SM 4500-F- C-2011	Fluoride	0.084	I	mg F/L	P426298	
2388337	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P426418	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P426331	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P426152	
	EPA 365.1 Rev. 2.0	Total-P	0.080		mg P/L	P426132	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P426274	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P426020

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

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: P426652

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426418

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426152

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426132

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

Reference Method: EPA 8270E
Batch ID: P426345

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDD-p,p'	0.25	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P426345

Component	Result	Code	Units
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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P426345

Component	Result	Code	Units
Mirex	0.35	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P426345

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

Reference Method: SM 2320 B-2011

Batch ID: P426294

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P426485

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P426376

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P426274

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: P426020

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

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Iron	101		P	85 - 115
Magnesium	105		P	85 - 115
Strontium	98.7		P	85 - 115
Tin	102		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	98.6		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.7		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	96.7		P	85 - 115
Beryllium	93.0		P	85 - 115
Cadmium	98.0		P	85 - 115
Chromium	100		P	85 - 115
Cobalt	98.7		P	85 - 115
Copper	97.6		P	85 - 115
Lead	95.5		P	85 - 115
Manganese	99.3		P	85 - 115
Molybdenum	95.6		P	85 - 115
Nickel	99.9		P	85 - 115
Selenium	98.1		P	85 - 115
Thallium	97.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	103		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426418

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426152

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426132

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

Reference Method: EPA 8270E
Batch ID: P426345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	46.1		P	10 - 92.0
Alpha-BHC	88.7		P	75 - 107
Alpha-Chlordane	68.0		P	50 - 108
Beta-BHC	93.3		P	36 - 138
Beta-Cyfluthrin	58.0		P	20 - 161
Bifenthrin	35.8		P	10 - 119
Chlorothalonil	107		P	26 - 186
Cis-Nonachlor	64.8		P	42 - 119
Cypermethrin	56.0		P	22 - 150
Dacthal	93.9		P	72 - 119
DDD-p,p'	68.3		P	45 - 107
DDE-p,p'	72.1		P	48 - 106
DDT-p,p'	67.4		P	48 - 110
Delta-BHC	102		P	54 - 140
Deltamethrin	64.6		P	22 - 189
Dichlobenil	69.0		P	36 - 117
Dicofol	75.5		P	46 - 155
Dieldrin	81.3		P	54 - 110
Endosulfan I	80.9		P	59 - 105
Endosulfan II	90.5		P	51 - 118
Endosulfan Sulfate	96.7		P	57 - 121
Endrin	86.4		P	10 - 120

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P426345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Endrin Aldehyde	95.3		P	34 - 118
Endrin Ketone	92.8		P	69 - 177
Esfenvalerate	50.3		P	23 - 168
Ethalfuralin	67.4		P	49 - 99.0
Fenpropathrin	63.6		P	34 - 117
Gamma-BHC	95.4		P	72 - 117
Gamma-Chlordane	65.8		P	43 - 106
Heptachlor	59.4		P	41 - 98.0
Heptachlor Epoxide	80.6		P	57 - 106
Hexachlorobenzene	50.7		P	36 - 99.0
Kepone	112		P	16 - 215
Lambda-Cyhalothrin	26.6		P	21 - 177
Methoprene	58.5		P	10 - 119
Methoxychlor	79.8		P	60 - 112
MGK-264	82.5		P	26 - 122
Mirex	44.4		P	10 - 169
Oxychlordane	69.6		P	43 - 105
PCB-1016	63.7		P	48 - 112
PCB-1260	57.4		P	44 - 118
Permethrin	35.1		P	24 - 148
Phenothrin	42.0		P	10 - 106
Piperonyl Butoxide	143		F	10 - 139
Prallethrin	79.8		P	17 - 109
Tau-Fluvalinate	42.1		P	13 - 131
Tetramethrin	101		P	10 - 132
Trans-Nonachlor	66.5		P	44 - 106
Triclosan Methyl	83.2		P	59 - 109
Trifluralin	67.6		P	44 - 101

Reference Method: EPA 8276

Batch ID: P426345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	61.7		P	61 - 116
Toxaphene	60.6		P	48 - 124

Reference Method: SM 2320 B-2011

Batch ID: P426294

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 2540 C-2015

Batch ID: P426485

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

Reference Method: SM 2540 D-2015

Batch ID: P426376

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

Laboratory Control Sample Accuracy

Reference Method: SM 2540 D-2015
Batch ID: P426376

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	95.3		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426274

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: P426158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388015	Calcium	98.1		P	80 - 120
2388015	Iron	99.9	102	P/P	80 - 120
2388015	Magnesium	103	105	P/P	80 - 120
2388015	Strontium	97.4	98.8	P/P	80 - 120
2388015	Tin	102	102	P/P	80 - 120
2388015	Titanium	103	104	P/P	80 - 120
2388015	Vanadium	100	101	P/P	80 - 120
2388015	Zinc	104	105	P/P	80 - 120
2388431	Calcium	97.2		P	80 - 120
2388431	Iron	100		P	80 - 120
2388431	Magnesium	101		P	80 - 120
2388431	Strontium	96.4		P	80 - 120
2388431	Tin	99.4		P	80 - 120
2388431	Titanium	103		P	80 - 120
2388431	Vanadium	101		P	80 - 120
2388431	Zinc	105		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P426158

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388015	Aluminum	112	95.6	P/P	80 - 120
2388015	Antimony	99.9	99.6	P/P	80 - 120
2388015	Arsenic	96.7	96.1	P/P	80 - 120
2388015	Beryllium	94.6	94.7	P/P	80 - 120
2388015	Cadmium	99.8	96.9	P/P	80 - 120
2388015	Chromium	99.4	99.1	P/P	80 - 120
2388015	Cobalt	97.3	96.5	P/P	80 - 120
2388015	Copper	97.1	95.8	P/P	80 - 120
2388015	Lead	96.7	95.0	P/P	80 - 120
2388015	Manganese	101	98.2	P/P	80 - 120
2388015	Molybdenum	97.1	97.0	P/P	80 - 120
2388015	Nickel	99.2	98.2	P/P	80 - 120
2388015	Selenium	96.7	95.7	P/P	80 - 120
2388015	Thallium	98.7	98.8	P/P	80 - 120
2388431	Aluminum	95.8		P	80 - 120
2388431	Antimony	99.4		P	80 - 120
2388431	Arsenic	94.4		P	80 - 120
2388431	Beryllium	91.0		P	80 - 120
2388431	Cadmium	97.2		P	80 - 120
2388431	Chromium	97.4		P	80 - 120
2388431	Cobalt	94.8		P	80 - 120
2388431	Copper	92.6		P	80 - 120
2388431	Lead	96.0		P	80 - 120
2388431	Manganese	97.1		P	80 - 120
2388431	Molybdenum	94.9		P	80 - 120
2388431	Nickel	97.8		P	80 - 120
2388431	Selenium	95.2		P	80 - 120
2388431	Thallium	97.7		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388014	Silver	101	102	P/P	80 - 120
2388432	Silver	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388411	Chloride	96.4		P	90 - 110
2388412	Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388411	Sulfate	100		P	90 - 110
2388412	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426418

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388309	Ammonia-N	99.6	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388385	Kjeldahl Nitrogen	91.9	95.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426152

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388332	NO2NO3-N	95.5	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388410	Total-P	98.9	99.7	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P426345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388507	Aldrin	49.2	39.7	P/P	20 - 82.0
2388507	Alpha-BHC	82.0	71.3	P/P	71 - 109
2388507	Alpha-Chlordane	69.7	61.2	P/P	42 - 106
2388507	Beta-BHC	91.8	88.4	P/P	69 - 180
2388507	Beta-Cyfluthrin	75.2	57.0	P/P	18 - 175
2388507	Bifenthrin	55.0	43.6	P/P	21 - 128
2388507	Chlorothalonil	107	103	P/P	10 - 300

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P426345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388507	Cis-Nonachlor	66.7	55.9	P/P	34 - 106
2388507	Cypermethrin	68.3	54.7	P/P	22 - 158
2388507	Dacthal	88.8	86.6	P/P	54 - 116
2388507	DDD-p,p'	65.2	60.1	P/P	34 - 107
2388507	DDE-p,p'	67.2	59.6	P/P	33 - 110
2388507	DDT-p,p'	64.6	57.5	P/P	50 - 122
2388507	Delta-BHC	105	98.5	P/P	77 - 193
2388507	Deltamethrin	88.3	70.1	P/P	10 - 195
2388507	Dichlobenil	66.6	49.0	P/P	25 - 113
2388507	Dicofol	71.7	65.0	P/P	38 - 247
2388507	Dieldrin	75.9	70.7	P/P	45 - 118
2388507	Endosulfan I	77.7	72.8	P/P	51 - 106
2388507	Endosulfan II	82.1	78.3	P/P	37 - 122
2388507	Endosulfan Sulfate	92.8	85.7	P/P	43 - 132
2388507	Endrin	79.8	76.2	P/P	29 - 101
2388507	Endrin Aldehyde	83.3	73.5	P/P	19 - 110
2388507	Endrin Ketone	62.5	59.6	P/F	60 - 140
2388507	Esfenvalerate	72.0	58.1	P/P	26 - 199
2388507	Ethalfuralin	66.9	62.4	P/P	45 - 99.0
2388507	Fenpropathrin	69.1	57.3	P/P	35 - 120
2388507	Gamma-BHC	89.0	82.5	P/P	63 - 128
2388507	Gamma-Chlordane	64.2	54.9	P/P	40 - 104
2388507	Heptachlor	58.5	48.3	P/P	36 - 97.0
2388507	Heptachlor Epoxide	75.7	68.4	P/P	49 - 184
2388507	Hexachlorobenzene	53.1	41.4	P/P	39 - 96.0
2388507	Kepone	115	90.8	P/P	10 - 217
2388507	Lambda-Cyhalothrin	36.8	28.4	P/P	21 - 193
2388507	Methoprene	59.8	48.9	P/P	20 - 106
2388507	Methoxychlor	79.0	73.7	P/P	53 - 118
2388507	MGK-264	80.6	76.1	P/P	40 - 118
2388507	Mirex	52.6	41.4	P/P	26 - 92.0
2388507	Oxychlordane	68.7	59.2	P/P	44 - 99.0
2388507	Permethrin	42.7	31.4	P/F	33 - 182
2388507	Phenothrin	60.4	45.5	P/P	10 - 129
2388507	Piperonyl Butoxide	136	136	P/P	10 - 211
2388507	Prallethrin	71.3	68.5	P/P	24 - 113
2388507	Tau-Fluvalinate	69.2	54.6	P/P	14 - 149
2388507	Tetramethrin	111	102	P/P	17 - 151
2388507	Trans-Nonachlor	65.8	55.3	P/P	42 - 102
2388507	Triclosan Methyl	78.1	73.1	P/P	48 - 108
2388507	Trifluralin	65.4	56.3	P/P	47 - 96.0
2388532	PCB-1016	81.4	74.1	P/P	46 - 111
2388532	PCB-1260	79.6	73.7	P/P	45 - 114

Reference Method: EPA 8276

Batch ID: P426345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388532	Chlordane	83.9	85.1	P/P	53 - 126
2388532	Toxaphene	77.9	80.8	P/P	56 - 211

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2388336	Fluoride	99.2	98.6	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P426274

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2387936	Organic Carbon	94.6	96.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P426020

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388336	Color (true)	0.455	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P426043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388304	Turbidity	0.422	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P426158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388015	Calcium	0.501	Spike	P	0 - 20
2388015	Iron	1.72	Spike	P	0 - 20
2388015	Magnesium	1.20	Spike	P	0 - 20
2388015	Strontium	1.36	Spike	P	0 - 20
2388015	Tin	0.475	Spike	P	0 - 20
2388015	Titanium	0.653	Spike	P	0 - 20
2388015	Vanadium	0.561	Spike	P	0 - 20
2388015	Zinc	0.557	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426158

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388015	Aluminum	15.6	Spike	P	0 - 20
2388015	Antimony	0.378	Spike	P	0 - 20
2388015	Arsenic	0.653	Spike	P	0 - 20
2388015	Beryllium	0.118	Spike	P	0 - 20
2388015	Cadmium	3.01	Spike	P	0 - 20
2388015	Chromium	0.334	Spike	P	0 - 20
2388015	Cobalt	0.811	Spike	P	0 - 20
2388015	Copper	1.30	Spike	P	0 - 20
2388015	Lead	1.82	Spike	P	0 - 20
2388015	Manganese	1.44	Spike	P	0 - 20
2388015	Molybdenum	0.127	Spike	P	0 - 20
2388015	Nickel	1.06	Spike	P	0 - 20
2388015	Selenium	0.982	Spike	P	0 - 20
2388015	Thallium	0.113	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P426328

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388014	Silver	0.206	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388411	Chloride	0.325	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P426652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388411	Sulfate	0.532	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P426418

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388309	Ammonia-N	0.146	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P426331

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388385	Kjeldahl Nitrogen	2.31	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P426152

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388332	NO2NO3-N	0.509	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P426132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388410	Total-P	0.831	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P426345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388507	Aldrin	21.3	Spike	P	0 - 41
2388507	Alpha-BHC	14.0	Spike	P	0 - 25
2388507	Alpha-Chlordane	13.0	Spike	P	0 - 33
2388507	Beta-BHC	3.76	Spike	P	0 - 36
2388507	Beta-Cyfluthrin	27.5	Spike	P	0 - 42
2388507	Bifenthrin	23.1	Spike	P	0 - 53
2388507	Chlorothalonil	3.57	Spike	P	0 - 71
2388507	Cis-Nonachlor	17.7	Spike	P	0 - 29
2388507	Cypermethrin	22.0	Spike	P	0 - 40

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P426345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388507	Dacthal	2.49	Spike	P	0 - 26
2388507	DDD-p,p'	8.06	Spike	P	0 - 39
2388507	DDE-p,p'	12.0	Spike	P	0 - 33
2388507	DDT-p,p'	11.6	Spike	P	0 - 40
2388507	Delta-BHC	5.90	Spike	P	0 - 37
2388507	Deltamethrin	23.0	Spike	P	0 - 100
2388507	Dichlobenil	30.4	Spike	P	0 - 40
2388507	Dicofol	9.82	Spike	P	0 - 31
2388507	Dieldrin	7.04	Spike	P	0 - 27
2388507	Endosulfan I	6.46	Spike	P	0 - 23
2388507	Endosulfan II	4.72	Spike	P	0 - 28
2388507	Endosulfan Sulfate	7.92	Spike	P	0 - 38
2388507	Endrin	4.58	Spike	P	0 - 63
2388507	Endrin Aldehyde	12.5	Spike	P	0 - 60
2388507	Endrin Ketone	4.77	Spike	P	0 - 37
2388507	Esfenvalerate	21.4	Spike	P	0 - 52
2388507	Ethalfuralin	7.02	Spike	P	0 - 23
2388507	Fenpropathrin	18.8	Spike	P	0 - 32
2388507	Gamma-BHC	7.60	Spike	P	0 - 17
2388507	Gamma-Chlordane	15.6	Spike	P	0 - 40
2388507	Heptachlor	19.1	Spike	P	0 - 29
2388507	Heptachlor Epoxide	10.1	Spike	P	0 - 25
2388507	Hexachlorobenzene	24.6	Spike	P	0 - 36
2388507	Kepone	23.8	Spike	P	0 - 93
2388507	Lambda-Cyhalothrin	25.7	Spike	P	0 - 55
2388507	Methoprene	20.1	Spike	P	0 - 53
2388507	Methoxychlor	6.91	Spike	P	0 - 29
2388507	MGK-264	5.83	Spike	P	0 - 35
2388507	Mirex	23.7	Spike	P	0 - 46
2388507	Oxychlordane	14.9	Spike	P	0 - 29
2388507	Permethrin	30.5	Spike	P	0 - 44
2388507	Phenothrin	28.2	Spike	P	0 - 56
2388507	Piperonyl Butoxide	0.684	Spike	P	0 - 100
2388507	Prallethrin	4.05	Spike	P	0 - 42
2388507	Tau-Fluvalinate	23.6	Spike	P	0 - 54
2388507	Tetramethrin	8.18	Spike	P	0 - 51
2388507	Trans-Nonachlor	17.2	Spike	P	0 - 37
2388507	Triclosan Methyl	6.61	Spike	P	0 - 31
2388507	Trifluralin	14.8	Spike	P	0 - 30
2388532	PCB-1016	9.44	Spike	P	0 - 32
2388532	PCB-1260	7.78	Spike	P	0 - 31

Reference Method: EPA 8276
Batch ID: P426345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388532	Chlordane	1.36	Spike	P	0 - 25
2388532	Toxaphene	3.61	Spike	P	0 - 26

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P426294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388336	Total Alkalinity	0.540	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P426485

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387726	TDS	4.89	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P426298

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2388336	Fluoride	0.479	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P426274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2387936	Organic Carbon	2.10	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2388346
Field Sample ID: 20030695

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	62.9	P	29 - 130
EPA 8270E	Decachlorobiphenyl	59.0	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	42.3	P	29 - 104
EPA 8270E	Tetrachloro-m-xylene	47.9	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	38.1	P	30 - 101
EPA 8276	PCNB	61.4	P	48 - 121

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A117519
Included Lab Sample IDs: 2388336

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A117527
Included Lab Sample IDs: 2388336

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A117565
Included Lab Sample IDs: 2388337

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A117588
Included Lab Sample IDs: 2388337

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A117613
Included Lab Sample IDs: 2388347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	98.6	P/P	90 - 110
Iron	100	98.5	P/P	90 - 110
Magnesium	100	98.7	P/P	90 - 110
Strontium	101	101	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Titanium	102	101	P/P	90 - 110
Vanadium	101	101	P/P	90 - 110
Zinc	105	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A117614
Included Lab Sample IDs: 2388347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.0	95.3	P/P	90 - 110
Antimony	98.3	97.9	P/P	90 - 110
Arsenic	96.3	93.8	P/P	90 - 110
Beryllium	96.2	93.0	P/P	90 - 110
Cadmium	95.8	95.8	P/P	90 - 110
Chromium	97.3	95.1	P/P	90 - 110
Cobalt	95.3	93.1	P/P	90 - 110
Copper	92.9	92.0	P/P	90 - 110
Lead	93.4	93.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117614

Included Lab Sample IDs: 2388347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Manganese	98.0	97.1	P/P	90 - 110
Molybdenum	94.5	93.9	P/P	90 - 110
Nickel	94.8	93.2	P/P	90 - 110
Selenium	96.9	96.4	P/P	90 - 110
Thallium	96.8	97.1	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A117617

Included Lab Sample IDs: 2388337

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.2	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A117622

Included Lab Sample IDs: 2388336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	100	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A117622

Included Lab Sample IDs: 2388336

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A117685

Included Lab Sample IDs: 2388337

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A117687

Included Lab Sample IDs: 2388336

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.9	96.2	P/P	90 - 110
Sulfate	98.4	99.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A117720

Included Lab Sample IDs: 2388347

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	99.2	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276
Run ID: A117725
Included Lab Sample IDs: 2388346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	96.2		P	80 - 120
Toxaphene	96.4		P	80 - 120

Reference Method: EPA 8270E
Run ID: A117726
Included Lab Sample IDs: 2388346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	99.0		P	80 - 120
Alpha-BHC	96.3		P	80 - 120
Alpha-Chlordane	97.3		P	80 - 120
Beta-BHC	105		P	80 - 120
Beta-Cyfluthrin	99.3		P	80 - 120
Bifenthrin	97.2		P	80 - 120
Chlorothalonil	105		P	80 - 120
Cis-Nonachlor	100		P	80 - 120
Cypermethrin	104		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	103		P	80 - 120
DDE-p,p'	97.5		P	80 - 120
DDT-p,p'	99.1		P	80 - 120
Delta-BHC	104		P	80 - 120
Deltamethrin	98.9		P	80 - 120
Dichlobenil	97.9		P	80 - 120
Dicofol	101		P	80 - 120
Dieldrin	95.5		P	80 - 120
Endosulfan I	98.3		P	80 - 120
Endosulfan II	102		P	80 - 120
Endosulfan Sulfate	104		P	80 - 120
Endrin	101		P	80 - 120
Endrin Aldehyde	99.2		P	80 - 120
Endrin Ketone	112		P	80 - 120
Esfenvalerate	100		P	80 - 120
Ethalfuralin	102		P	80 - 120
Fenpropathrin	100		P	80 - 120
Gamma-BHC	98.4		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	101		P	80 - 120
Heptachlor Epoxide	103		P	80 - 120
Hexachlorobenzene	97.2		P	80 - 120
Kepone	90.7		P	80 - 120
Lambda-Cyhalothrin	100		P	80 - 120
Methoprene	99.3		P	80 - 120
Methoxychlor	97.1		P	80 - 120
MGK-264	99.8		P	80 - 120
Mirex	97.7		P	80 - 120
Oxychlordane	99.4		P	80 - 120
Permethrin	96.2		P	80 - 120
Phenothrin	94.9		P	80 - 120
Piperonyl Butoxide	100		P	80 - 120
Prallethrin	102		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A117726
Included Lab Sample IDs: 2388346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Tau-Fluvalinate	102		P	80 - 120
Tetramethrin	102		P	80 - 120
Trans-Nonachlor	102		P	80 - 120
Triclosan Methyl	98.2		P	80 - 120
Trifluralin	98.2		P	80 - 120

Reference Method: EPA 8270E
Run ID: A117754
Included Lab Sample IDs: 2388346

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	104		P	80 - 120
PCB-1260	97.2		P	80 - 120

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A117796
Included Lab Sample IDs: 2388337

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	105	P/P	90 - 110

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

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
DEP SOP: NU-094-1	Color (true)	101				0.455	
EPA 180.1 Rev. 2.0	Turbidity	101				0.422	
EPA 200.7 Rev. 4.4	Calcium	101	98.1	97.2			0.501
	Iron	101	99.9	102	100		1.72
	Magnesium	105	103	105	101		1.20
	Strontium	98.7	97.4	98.8	96.4		1.36
	Tin	102	102	102	99.4		0.475
	Titanium	101	103	104	103		0.653
	Vanadium	98.6	100	101	101		0.561
	Zinc	106	104	105	105		0.557
EPA 200.8 Rev. 5.4	Aluminum	96.7	112	95.6	95.8		15.6
	Antimony	99.6	99.9	99.6	99.4		0.378
	Arsenic	96.7	96.7	96.1	94.4		0.653
	Beryllium	93.0	94.6	94.7	91.0		0.118
	Cadmium	98.0	99.8	96.9	97.2		3.01
	Chromium	100	99.4	99.1	97.4		0.334
	Cobalt	98.7	97.3	96.5	94.8		0.811
	Copper	97.6	97.1	95.8	92.6		1.30
	Lead	95.5	96.7	95.0	96.0		1.82
	Manganese	99.3	101	98.2	97.1		1.44
	Molybdenum	95.6	97.1	97.0	94.9		0.127
	Nickel	99.9	99.2	98.2	97.8		1.06
	Selenium	98.1	96.7	95.7	95.2		0.982
	Silver	103	102	101	102		0.206
	Thallium	97.9	98.7	98.8	97.7		0.113
EPA 300.0 Rev. 2.1	Chloride	97.0	96.4	97.2		0.325	
	Sulfate	101	100	101		0.532	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	99.6	99.8			0.146
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.5	91.9	95.5			2.31
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0	95.5	96.0			0.509
EPA 365.1 Rev. 2.0	Total-P	100	98.9	99.7			0.831
EPA 8270E	Aldrin	46.1	49.2	39.7			21.3
	Alpha-BHC	88.7	82.0	71.3			14.0
	Alpha-Chlordane	68.0	69.7	61.2			13.0
	Beta-BHC	93.3	91.8	88.4			3.76
	Beta-Cyfluthrin	58.0	75.2	57.0			27.5
	Bifenthrin	35.8	55.0	43.6			23.1
	Chlorothalonil	107	107	103			3.57
	Cis-Nonachlor	64.8	66.7	55.9			17.7
	Cypermethrin	56.0	68.3	54.7			22.0
	Dacthal	93.9	88.8	86.6			2.49
	DDD-p,p'	68.3	65.2	60.1			8.06
	DDE-p,p'	72.1	67.2	59.6			12.0
	DDT-p,p'	67.4	64.6	57.5			11.6
	Delta-BHC	102	105	98.5			5.90
	Deltamethrin	64.6	88.3	70.1			23.0
	Dichlobenil	69.0	66.6	49.0			30.4
	Dicofol	75.5	71.7	65.0			9.82
	Dieldrin	81.3	75.9	70.7			7.04
	Endosulfan I	80.9	77.7	72.8			6.46
	Endosulfan II	90.5	82.1	78.3			4.72
	Endosulfan Sulfate	96.7	92.8	85.7			7.92
	Endrin	86.4	79.8	76.2			4.58
	Endrin Aldehyde	95.3	83.3	73.5			12.5

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	SMP
EPA 8270E	Endrin Ketone	92.8	62.5	59.6		4.77
	Esfenvalerate	50.3	72.0	58.1		21.4
	Ethalfuralin	67.4	66.9	62.4		7.02
	Fenpropathrin	63.6	69.1	57.3		18.8
	Gamma-BHC	95.4	89.0	82.5		7.60
	Gamma-Chlordane	65.8	64.2	54.9		15.6
	Heptachlor	59.4	58.5	48.3		19.1
	Heptachlor Epoxide	80.6	75.7	68.4		10.1
	Hexachlorobenzene	50.7	53.1	41.4		24.6
	Kepone	112	115	90.8		23.8
	Lambda-Cyhalothrin	26.6	36.8	28.4		25.7
	Methoprene	58.5	59.8	48.9		20.1
	Methoxychlor	79.8	79.0	73.7		6.91
	MGK-264	82.5	80.6	76.1		5.83
	Mirex	44.4	52.6	41.4		23.7
	Oxychlordane	69.6	68.7	59.2		14.9
	PCB-1016	63.7	81.4	74.1		9.44
	PCB-1260	57.4	79.6	73.7		7.78
	Permethrin	35.1	42.7	31.4		30.5
	Phenothrin	42.0	60.4	45.5		28.2
	Piperonyl Butoxide	143	136	136		0.684
	Prallethrin	79.8	71.3	68.5		4.05
	Tau-Fluvalinate	42.1	69.2	54.6		23.6
	Tetramethrin	101	111	102		8.18
	Trans-Nonachlor	66.5	65.8	55.3		17.2
	Triclosan Methyl	83.2	78.1	73.1		6.61
	Trifluralin	67.6	65.4	56.3		14.8
EPA 8276	Chlordane	61.7	83.9	85.1		1.36
	Toxaphene	60.6	77.9	80.8		3.61
SM 2320 B-2011	Total Alkalinity	99.5				0.540
SM 2540 C-2015	TDS	104				4.89
SM 2540 D-2015	TSS	95.3				
SM 4500-F- C-2011	Fluoride	98.5	99.2	98.6		0.479
SM 5310 B-2011	Organic Carbon	95.8	94.6	96.8		2.10

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2388336
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2388336
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2388347
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2388347
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2388336
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2388336
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2388337
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2388337
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2388337
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2388337
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2388346
EPA 8270E	PCBs in water matrices by GC/MS/MS	2388346

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2388346
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2388336
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2388336
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2388336
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2388336
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2388337

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	02/17/2023			02/17/2023 14:23	Alexis Price	2388336
EPA 180.1 Rev. 2.0	02/17/2023			02/17/2023 13:36	Khloe J Berg	2388336
EPA 200.7 Rev. 4.4	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 19:36	McKinley C Carter	2388347
	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 19:43	McKinley C Carter	2388347
EPA 200.8 Rev. 5.4	02/17/2023	02/21/2023 12:40	George D Taylor	02/22/2023 16:17	Conrad Hartmann	2388347
	02/17/2023	02/24/2023 10:50	George D Taylor	02/28/2023 13:50	Conrad Hartmann	2388347
EPA 300.0 Rev. 2.1	02/17/2023			03/01/2023 20:58	Judith K. Clark	2388336
EPA 350.1 Rev. 2.0	02/17/2023			02/27/2023 12:05	Ping Hua	2388337
EPA 351.2 Rev. 2.0	02/17/2023	02/24/2023 12:50	Simonne.V. Calhoun	03/03/2023 14:52	Judith K. Clark	2388337
EPA 353.2 Rev. 2.0	02/17/2023			02/21/2023 09:51	Beverly Y. Sanders	2388337
EPA 365.1 Rev. 2.0	02/17/2023	02/21/2023 12:56	Adam P Silver	02/22/2023 09:53	James L Waggeberby	2388337
EPA 8270E	02/17/2023	02/22/2023 09:30	Julie Wi	02/27/2023 12:47	Julie Wi	2388346
	02/17/2023	02/22/2023 09:30	Julie Wi	02/27/2023 23:15	Vandana T. Nagar	2388346
EPA 8276	02/17/2023	02/22/2023 09:30	Julie Wi	02/28/2023 05:27	Arthur Maknenko	2388346
SM 2320 B-2011	02/17/2023			02/22/2023 22:01	Chandler E Cox	2388336
SM 2540 C-2015	02/17/2023			02/20/2023 15:46	Yijie Li	2388336
SM 2540 D-2015	02/17/2023			02/20/2023 15:46	Yijie Li	2388336
SM 4500-F- C-2011	02/17/2023			02/22/2023 21:49	Chandler E Cox	2388336
SM 5310 B-2011	02/17/2023			02/22/2023 20:15	Elise M. Gillis	2388337