

Chemical Analysis Report

SO-DIST-2023-06-21-01

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

Event Description: **2023 SMP: Desoto Shenanigans**
Request ID: **RQ-2023-06-19-15**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 314
Fort Myers, FL 33901-3381
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 18-JUL-2023 10:40



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: BOBCAT CREEK IN PRESERVE EAST

Collection Date/Time: 06/20/2023 10:00

Field ID: G3SD0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418853	DEP SOP: NU-094-1	Color (true)	96		PCU	P431607	
	EPA 180.1 Rev. 2.0	Turbidity	8.9		NTU	P431593	
	EPA 300.0 Rev. 2.1	Chloride	53		mg Cl/L	P431829	
		Sulfate	23		mg SO4/L	P431832	
	SM 2320 B-2011	Total Alkalinity	117		mg CaCO3/L	P431954	
	SM 2540 C-2015	TDS	272		mg/L	P432043	
	SM 2540 D-2015	TSS	4	I	mg/L	P432045	
2418854	SM 4500-F- C-2011	Fluoride	0.63		mg F/L	P431774	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P431839	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P431677	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040		mg N/L	P431816	
	EPA 365.1 Rev. 2.0	Total-P	0.86		mg P/L	P431778	
2418859	SM 5310 B-2011	Organic Carbon	19		mg C/L	P431708	
	EPA 200.7 Rev. 4.4	Calcium	44.6		mg/L	P431650	
		Iron	1.75E+03		ug/L	P431650	
		Magnesium	13.3		mg/L	P431650	
		Potassium	1.4		mg/L	P431650	
		Sodium	31.6		mg/L	P431650	
		Strontium	464		ug/L	P431650	
		Tin	3.7	I	ug/L	P431650	
		Titanium	1.5	I	ug/L	P431650	
		Vanadium	3.2	I	ug/L	P431650	
		Zinc	5.0	U	ug/L	P431650	
	EPA 200.8 Rev. 5.4	Aluminum	83		ug/L	P431650	
		Antimony	0.12	I	ug/L	P431650	
		Arsenic	2.25		ug/L	P431650	
		Barium	4.68		ug/L	P431650	
		Beryllium	0.015	I	ug/L	P431650	
		Boron	56.6		ug/L	P431650	
		Cadmium	0.020	U	ug/L	P431650	
		Chromium	2.1		ug/L	P431650	
		Cobalt	0.158		ug/L	P431650	
		Copper	0.40	U	ug/L	P431650	
		Lead	0.20	U	ug/L	P431650	
		Manganese	15.0		ug/L	P431650	
		Molybdenum	1.01		ug/L	P431650	
		Nickel	0.72	I	ug/L	P431650	
		Selenium	0.20	U	ug/L	P431650	
		Silver	0.010	U	ug/L	P431650	
		Thallium	0.10	U	ug/L	P431650	
	SM 2340 B-2011	Hardness	166		mg/L	P431650	

Field ID: G3SD0131

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 4500-F- C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HORSE CREEK

Collection Date/Time: 06/20/2023 09:10

Field ID: G3SD0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418858	EPA 8270E	Aldrin	0.67	U	ng/L	P431672	
		Alpha-BHC	0.10	U	ng/L	P431672	
		Alpha-Chlordane	0.20	U	ng/L	P431672	
		PCB-1016	2.0	UQ	ng/L	P432065	
		Beta-BHC	0.10	U	ng/L	P431672	
		PCB-1221	2.0	UQ	ng/L	P432065	
		Beta-Cyfluthrin	1.3	U	ng/L	P431672	
		PCB-1232	2.0	UQ	ng/L	P432065	
		Bifenthrin	0.51	U	ng/L	P431672	
		PCB-1242	2.0	UQ	ng/L	P432065	
		Carbophenothion	0.92	U	ng/L	P431672	
		PCB-1248	2.0	UQ	ng/L	P432065	
		Chlorothalonil	3.7	U	ng/L	P431672	
		PCB-1254	2.0	UQ	ng/L	P432065	
		Cis-Nonachlor	0.20	U	ng/L	P431672	
		PCB-1260	2.0	UQ	ng/L	P432065	
		Cypermethrin	1.5	U	ng/L	P431672	
		Dacthal	0.15	U	ng/L	P431672	
		DDD-p,p'	0.26	U	ng/L	P431672	
		DDE-p,p'	0.20	U	ng/L	P431672	
		DDT-p,p'	0.26	U	ng/L	P431672	
		Delta-BHC	0.64	I	ng/L	P431672	
		Deltamethrin	1.3	U	ng/L	P431672	
		Dichlobenil	0.26	U	ng/L	P431672	
		Dicofol	1.3	U	ng/L	P431672	
		Dieldrin	0.41	U	ng/L	P431672	
		Endosulfan I	0.41	U	ng/L	P431672	
		Endosulfan II	0.41	U	ng/L	P431672	
		Endosulfan Sulfate	0.31	U	ng/L	P431672	
		Endrin	0.41	U	ng/L	P431672	
		Endrin Aldehyde	0.77	U	ng/L	P431672	
		Endrin Ketone	0.41	U	ng/L	P431672	
		Esfenvalerate	0.77	U	ng/L	P431672	
		Ethalfuralin	0.15	U	ng/L	P431672	
		Fenpropathrin	0.26	U	ng/L	P431672	
		Gamma-BHC	0.13	U	ng/L	P431672	
		Gamma-Chlordane	0.23	I	ng/L	P431672	
		Heptachlor	0.20	U	ng/L	P431672	
		Heptachlor Epoxide	0.26	U	ng/L	P431672	
		Hexachlorobenzene**	1.0	U	ng/L	P431672	
		Kepone	5.1	UJ	ng/L	P431672	CCV
		Lambda-Cyhalothrin	0.77	U	ng/L	P431672	
		Methoprene	0.77	U	ng/L	P431672	
		Methoxychlor	0.31	U	ng/L	P431672	

Field ID: G3SD0157

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2418858	EPA 8270E	MGK-264	0.20	U	ng/L	P431672	
		Mirex	0.36	U	ng/L	P431672	
		Oxychlordane	0.31	U	ng/L	P431672	
		Permethrin	1.6	U	ng/L	P431672	
		Phenothrin	0.92	U	ng/L	P431672	
		Piperonyl Butoxide	0.54	I	ng/L	P431672	
		Prallethrin	2.0	U	ng/L	P431672	
		Tau-Fluvalinate	0.26	U	ng/L	P431672	
		Tetramethrin	0.77	U	ng/L	P431672	
		Trans-Nonachlor	0.20	U	ng/L	P431672	
		Triclosan Methyl	0.15	U	ng/L	P431672	
		Trifluralin	0.20	U	ng/L	P431672	
	EPA 8276	Chlordane	2.0	UJ	ng/L	P431672	LCS, MS, SUR
		Toxaphene	15	UJ	ng/L	P431672	MS, SUR

Ref. Method and Comment:

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

EPA 8270E: Sample expired for preparation due to need for re-extraction.

EPA 8276: Surrogate failures were observed in both original extraction and re-extraction. Analytical results were confirmed. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P431607

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431593

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431650

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: P431650

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: P431829

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: P431832

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431839

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431677

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431816

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431778

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

Reference Method: EPA 8270E
Batch ID: P431672

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
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P431672

Component	Result	Code	Units
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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P431672

Component	Result	Code	Units
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 8270E

Batch ID: P432065

Component	Result	Code	Units
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

Reference Method: EPA 8276

Batch ID: P431672

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P431954

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

Reference Method: SM 2540 C-2015
Batch ID: P432043

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P432045

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P431774

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P431708

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: P431607

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.2		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431593

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	105		P	85 - 115
Iron	105		P	85 - 115
Magnesium	105		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Strontium	99.5		P	85 - 115
Tin	101		P	85 - 115
Titanium	100		P	85 - 115
Vanadium	100		P	85 - 115
Zinc	99.2		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	103		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	102		P	85 - 115
Barium	106		P	85 - 115
Beryllium	99.8		P	85 - 115
Boron	103		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	98.9		P	85 - 115
Cobalt	98.8		P	85 - 115
Copper	98.2		P	85 - 115
Lead	96.0		P	85 - 115
Manganese	98.8		P	85 - 115
Molybdenum	101		P	85 - 115
Nickel	99.2		P	85 - 115
Selenium	102		P	85 - 115
Silver	104		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431829

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431832

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431839

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: P431677

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431816

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431778

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

Reference Method: EPA 8270E
Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	49.6		P	10 - 92.0
Alpha-BHC	81.1		P	75 - 107
Alpha-Chlordane	73.8		P	50 - 108
Beta-BHC	99.6		P	36 - 138
Beta-Cyfluthrin	75.4		P	20 - 161
Bifenthrin	52.5		P	10 - 119
Carbophenothion	54.3		P	19 - 94.0
Chlorothalonil	110		P	26 - 186
Cis-Nonachlor	72.5		P	42 - 119
Cypermethrin	99.1		P	22 - 150
Dacthal	85.5		P	72 - 119
DDD-p,p'	69.0		P	45 - 107
DDE-p,p'	70.9		P	48 - 106
DDT-p,p'	68.0		P	48 - 110
Delta-BHC	86.9		P	54 - 140
Deltamethrin	139		P	22 - 189
Dichlobenil	56.1		P	36 - 117
Dicofol	73.7		P	46 - 155
Dieldrin	79.4		P	54 - 110
Endosulfan I	80.3		P	59 - 105
Endosulfan II	78.5		P	51 - 118
Endosulfan Sulfate	78.8		P	57 - 121

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Endrin	76.8		P	10 - 120
Endrin Aldehyde	76.5		P	34 - 118
Endrin Ketone	97.1		P	69 - 177
Esfenvalerate	95.2		P	23 - 168
Ethalfuralin	73.6		P	49 - 99.0
Fenpropathrin	72.3		P	34 - 117
Gamma-BHC	92.2		P	72 - 117
Gamma-Chlordane	70.9		P	43 - 106
Heptachlor	73.7		P	41 - 98.0
Heptachlor Epoxide	83.6		P	57 - 106
Hexachlorobenzene	68.6		P	36 - 99.0
Kepone	63.5		P	16 - 215
Lambda-Cyhalothrin	71.5		P	21 - 177
Methoprene	66.1		P	10 - 119
Methoxychlor	71.3		P	60 - 112
MGK-264	86.3		P	26 - 122
Mirex	51.2		P	10 - 169
Oxychlordane	75.2		P	43 - 105
Permethrin	86.9		P	24 - 148
Phenothrin	67.9		P	10 - 106
Piperonyl Butoxide	88.9		P	10 - 139
Prallethrin	78.5		P	17 - 109
Tau-Fluvalinate	87.4		P	13 - 131
Tetramethrin	79.9		P	10 - 132
Trans-Nonachlor	72.0		P	44 - 106
Triclosan Methyl	74.5		P	59 - 109
Trifluralin	75.0		P	44 - 101

Reference Method: EPA 8270E

Batch ID: P432065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
PCB-1016	76.7		P	45 - 107
PCB-1260	71.1		P	40 - 118

Reference Method: EPA 8276

Batch ID: P431672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	48.6		F	61 - 116
Toxaphene	50.6		P	48 - 124

Reference Method: SM 2320 B-2011

Batch ID: P431954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	95.8		P	92 - 105

Reference Method: SM 2540 C-2015

Batch ID: P432043

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

Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P432043

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

Reference Method: SM 2540 D-2015
Batch ID: P432045

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	98.4		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P431774

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	105		P	94 - 106

Reference Method: SM 5310 B-2011
Batch ID: P431708

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418460	Calcium	107	107	P/P	80 - 120
2418460	Iron	109	108	P/P	80 - 120
2418460	Magnesium	106	105	P/P	80 - 120
2418460	Potassium	103	103	P/P	80 - 120
2418460	Sodium	99.3		P	80 - 120
2418460	Strontium	102	101	P/P	80 - 120
2418460	Tin	105	101	P/P	80 - 120
2418460	Titanium	103	103	P/P	80 - 120
2418460	Vanadium	104	104	P/P	80 - 120
2418460	Zinc	102	103	P/P	80 - 120
2418916	Calcium	109		P	80 - 120
2418916	Iron	108		P	80 - 120
2418916	Magnesium	108		P	80 - 120
2418916	Potassium	101		P	80 - 120
2418916	Sodium	105		P	80 - 120
2418916	Strontium	102		P	80 - 120
2418916	Tin	104		P	80 - 120
2418916	Titanium	96.5		P	80 - 120
2418916	Vanadium	105		P	80 - 120
2418916	Zinc	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418460	Aluminum	103	103	P/P	80 - 120
2418460	Antimony	104	106	P/P	80 - 120
2418460	Arsenic	101	102	P/P	80 - 120
2418460	Barium	106	106	P/P	80 - 120
2418460	Beryllium	101	101	P/P	80 - 120
2418460	Boron	104	103	P/P	80 - 120
2418460	Cadmium	101	102	P/P	80 - 120
2418460	Chromium	97.5	97.7	P/P	80 - 120
2418460	Cobalt	98.4	98.0	P/P	80 - 120
2418460	Copper	99.2	98.7	P/P	80 - 120
2418460	Lead	96.8	97.8	P/P	80 - 120
2418460	Manganese	99.1	98.6	P/P	80 - 120
2418460	Molybdenum	101	102	P/P	80 - 120
2418460	Nickel	98.2	97.9	P/P	80 - 120
2418460	Selenium	103	100	P/P	80 - 120
2418460	Silver	104	104	P/P	80 - 120
2418460	Thallium	104	106	P/P	80 - 120
2418916	Aluminum	99.0		P	80 - 120
2418916	Antimony	101		P	80 - 120
2418916	Arsenic	98.7		P	80 - 120
2418916	Barium	105		P	80 - 120
2418916	Beryllium	93.7		P	80 - 120
2418916	Boron	102		P	80 - 120
2418916	Cadmium	101		P	80 - 120
2418916	Chromium	97.3		P	80 - 120
2418916	Cobalt	98.3		P	80 - 120
2418916	Copper	97.0		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418916	Lead	95.2		P	80 - 120
2418916	Manganese	98.7		P	80 - 120
2418916	Molybdenum	96.2		P	80 - 120
2418916	Nickel	97.2		P	80 - 120
2418916	Selenium	96.9		P	80 - 120
2418916	Silver	102		P	80 - 120
2418916	Thallium	104		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431829

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418455	Chloride	106		P	90 - 110
2418708	Chloride	105		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431832

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418455	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431839

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418711	Ammonia-N	97.0	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418854	Kjeldahl Nitrogen	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418764	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431778

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419105	Total-P	99.7	99.0	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419482	Aldrin	45.8	39.4	P/P	20 - 82.0
2419482	Alpha-BHC	79.3	74.7	P/P	71 - 109
2419482	Alpha-Chlordane	68.6	62.8	P/P	42 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419482	Beta-BHC	123	133	P/P	69 - 180
2419482	Beta-Cyfluthrin	86.4	79.2	P/P	18 - 175
2419482	Bifenthrin	65.5	52.7	P/P	21 - 128
2419482	Carbophenothion	63.4	55.5	P/P	10 - 126
2419482	Chlorothalonil	142	167	P/P	10 - 300
2419482	Cis-Nonachlor	65.4	57.3	P/P	34 - 106
2419482	Cypermethrin	121	114	P/P	22 - 158
2419482	Dacthal	78.3	81.8	P/P	54 - 116
2419482	DDD-p,p'	63.1	59.0	P/P	34 - 107
2419482	DDE-p,p'	62.1	55.5	P/P	33 - 110
2419482	DDT-p,p'	64.5	55.0	P/P	50 - 122
2419482	Delta-BHC	95.3	96.8	P/P	77 - 193
2419482	Deltamethrin	171	163	P/P	10 - 195
2419482	Dichlobenil	34.0	39.8	P/P	25 - 113
2419482	Dicofol	70.8	62.6	P/P	38 - 247
2419482	Dieldrin	71.8	63.2	P/P	45 - 118
2419482	Endosulfan I	87.7	76.0	P/P	51 - 106
2419482	Endosulfan II	79.5	71.1	P/P	37 - 122
2419482	Endosulfan Sulfate	68.5	72.0	P/P	43 - 132
2419482	Endrin	69.0	66.0	P/P	29 - 101
2419482	Endrin Aldehyde	62.2	64.3	P/P	19 - 110
2419482	Endrin Ketone	114	115	P/P	60 - 140
2419482	Esfenvalerate	111	110	P/P	26 - 199
2419482	Ethalfuralin	66.4	63.3	P/P	45 - 99.0
2419482	Fenpropathrin	74.0	69.3	P/P	35 - 120
2419482	Gamma-BHC	112	118	P/P	63 - 128
2419482	Gamma-Chlordane	65.2	58.8	P/P	40 - 104
2419482	Heptachlor	87.9	72.8	P/P	36 - 97.0
2419482	Heptachlor Epoxide	82.2	73.5	P/P	49 - 184
2419482	Hexachlorobenzene	65.7	57.5	P/P	39 - 96.0
2419482	Kepone	73.8	78.8	P/P	10 - 217
2419482	Lambda-Cyhalothrin	91.7	85.6	P/P	21 - 193
2419482	Methoprene	66.5	58.3	P/P	20 - 106
2419482	Methoxychlor	66.0	62.6	P/P	53 - 118
2419482	MGK-264	78.5	79.2	P/P	40 - 118
2419482	Mirex	53.0	43.1	P/P	26 - 92.0
2419482	Oxychlordane	74.7	66.0	P/P	44 - 99.0
2419482	Permethrin	99.7	91.5	P/P	33 - 182
2419482	Phenothrin	68.6	45.9	P/P	10 - 129
2419482	Piperonyl Butoxide	82.6	90.6	P/P	10 - 211
2419482	Prallethrin	70.1	67.7	P/P	24 - 113
2419482	Tau-Fluvalinate	109	117	P/P	14 - 149
2419482	Tetramethrin	81.1	72.6	P/P	17 - 151
2419482	Trans-Nonachlor	65.2	58.4	P/P	42 - 102
2419482	Triclosan Methyl	75.0	69.3	P/P	48 - 108
2419482	Trifluralin	66.8	58.5	P/P	47 - 96.0

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422046	PCB-1016	82.8	73.9	P/P	45 - 107

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P432065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2422046	PCB-1260	82.4	66.7	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P431672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2419486	Chlordane	42.9	39.9	F/F	53 - 126
2419486	Toxaphene	48.6	44.5	F/F	56 - 211

Reference Method: SM 5310 B-2011
Batch ID: P431708

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2418854	Organic Carbon	93.1	95.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P431607

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418714	Color (true)	14.6	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P431593

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418474	Turbidity	19.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P431650

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418460	Calcium	0.0610	Spike	P	0 - 20
2418460	Iron	0.715	Spike	P	0 - 20
2418460	Magnesium	0.502	Spike	P	0 - 20
2418460	Potassium	0.0725	Spike	P	0 - 20
2418460	Sodium	0.618	Spike	P	0 - 20
2418460	Strontium	0.387	Spike	P	0 - 20
2418460	Tin	3.97	Spike	P	0 - 20
2418460	Titanium	0.0837	Spike	P	0 - 20
2418460	Vanadium	0.108	Spike	P	0 - 20
2418460	Zinc	0.0786	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P431650

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418460	Aluminum	0.204	Spike	P	0 - 20
2418460	Antimony	1.27	Spike	P	0 - 20
2418460	Arsenic	0.374	Spike	P	0 - 20
2418460	Barium	0.0980	Spike	P	0 - 20
2418460	Beryllium	0.211	Spike	P	0 - 20
2418460	Boron	0.308	Spike	P	0 - 20
2418460	Cadmium	1.20	Spike	P	0 - 20
2418460	Chromium	0.174	Spike	P	0 - 20
2418460	Cobalt	0.391	Spike	P	0 - 20
2418460	Copper	0.527	Spike	P	0 - 20
2418460	Lead	1.07	Spike	P	0 - 20
2418460	Manganese	0.398	Spike	P	0 - 20
2418460	Molybdenum	0.495	Spike	P	0 - 20
2418460	Nickel	0.344	Spike	P	0 - 20
2418460	Selenium	2.93	Spike	P	0 - 20
2418460	Silver	0.197	Spike	P	0 - 20
2418460	Thallium	1.28	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431829

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418455	Chloride	5.09	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P431832

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418455	Sulfate	5.19	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P431839

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418711	Ammonia-N	0.306	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P431677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418854	Kjeldahl Nitrogen	2.66	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P431816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418764	NO2NO3-N	0.482	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P431778

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419105	Total-P	0.687	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419482	Aldrin	14.9	Spike	P	0 - 41
2419482	Alpha-BHC	5.96	Spike	P	0 - 25
2419482	Alpha-Chlordane	8.78	Spike	P	0 - 33
2419482	Beta-BHC	7.65	Spike	P	0 - 36
2419482	Beta-Cyfluthrin	8.75	Spike	P	0 - 42
2419482	Bifenthrin	21.7	Spike	P	0 - 53
2419482	Carbophenothion	13.3	Spike	P	0 - 49
2419482	Chlorothalonil	16.0	Spike	P	0 - 71
2419482	Cis-Nonachlor	13.3	Spike	P	0 - 29

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419482	Cypermethrin	6.10	Spike	P	0 - 40
2419482	Dacthal	4.34	Spike	P	0 - 26
2419482	DDD-p,p'	6.61	Spike	P	0 - 39
2419482	DDE-p,p'	11.3	Spike	P	0 - 33
2419482	DDT-p,p'	16.0	Spike	P	0 - 40
2419482	Delta-BHC	1.56	Spike	P	0 - 37
2419482	Deltamethrin	4.76	Spike	P	0 - 100
2419482	Dichlobenil	15.7	Spike	P	0 - 40
2419482	Dicofol	12.3	Spike	P	0 - 31
2419482	Dieldrin	11.0	Spike	P	0 - 27
2419482	Endosulfan I	14.3	Spike	P	0 - 23
2419482	Endosulfan II	11.2	Spike	P	0 - 28
2419482	Endosulfan Sulfate	4.95	Spike	P	0 - 38
2419482	Endrin	4.51	Spike	P	0 - 63
2419482	Endrin Aldehyde	3.34	Spike	P	0 - 60
2419482	Endrin Ketone	0.875	Spike	P	0 - 37
2419482	Esfenvalerate	1.59	Spike	P	0 - 52
2419482	Ethalfuralin	4.74	Spike	P	0 - 23
2419482	Fenpropathrin	6.59	Spike	P	0 - 32
2419482	Gamma-BHC	5.05	Spike	P	0 - 17
2419482	Gamma-Chlordane	10.3	Spike	P	0 - 40
2419482	Heptachlor	18.8	Spike	P	0 - 29
2419482	Heptachlor Epoxide	11.2	Spike	P	0 - 25
2419482	Hexachlorobenzene	13.2	Spike	P	0 - 36
2419482	Kepone	6.56	Spike	P	0 - 93
2419482	Lambda-Cyhalothrin	6.92	Spike	P	0 - 55
2419482	Methoprene	13.1	Spike	P	0 - 53
2419482	Methoxychlor	5.19	Spike	P	0 - 29
2419482	MGK-264	0.898	Spike	P	0 - 35
2419482	Mirex	20.6	Spike	P	0 - 46
2419482	Oxychlordane	12.4	Spike	P	0 - 29
2419482	Permethrin	8.59	Spike	P	0 - 44
2419482	Phenothrin	39.6	Spike	P	0 - 56
2419482	Piperonyl Butoxide	9.22	Spike	P	0 - 100
2419482	Prallethrin	3.48	Spike	P	0 - 42
2419482	Tau-Fluvalinate	7.57	Spike	P	0 - 54
2419482	Tetramethrin	11.2	Spike	P	0 - 51
2419482	Trans-Nonachlor	11.0	Spike	P	0 - 37
2419482	Triclosan Methyl	7.80	Spike	P	0 - 31
2419482	Trifluralin	13.3	Spike	P	0 - 30

Reference Method: EPA 8270E
Batch ID: P432065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2422046	PCB-1016	11.4	Spike	P	0 - 25
2422046	PCB-1260	21.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8276
Batch ID: P431672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419486	Chlordane	7.31	Spike	P	0 - 25
2419486	Toxaphene	8.94	Spike	P	0 - 26

Reference Method: SM 2320 B-2011
Batch ID: P431954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2419268	Total Alkalinity	0.244	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P432043

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418552	TDS	3.92	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P431774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418853	Fluoride	1.45	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2011
Batch ID: P431708

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2418854	Organic Carbon	0.966	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2418858
Field Sample ID: G3SD0157

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	84.2	P	37 - 129
EPA 8270E	Decachlorobiphenyl	91.4	P	30 - 118
EPA 8270E	Tetrachloro-m-xylene	53.2	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	61.1	P	30 - 97.0
EPA 8276	Decachlorobiphenyl	19.6	F	30 - 101
EPA 8276	Decachlorobiphenyl	23.1	F	28 - 102
EPA 8276	PCNB	91.6	P	48 - 121
EPA 8276	PCNB	93.2	P	49 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A119947

Included Lab Sample IDs: 2418853

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

Reference Method: DEP SOP: NU-094-1

Run ID: A119950

Included Lab Sample IDs: 2418853

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	97.4	98.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A119991

Included Lab Sample IDs: 2418854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.5	96.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A120013

Included Lab Sample IDs: 2418859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	102	P/P	90 - 110
Antimony	102	101	P/P	90 - 110
Arsenic	99.8	101	P/P	90 - 110
Barium	102	102	P/P	90 - 110
Beryllium	99.4	101	P/P	90 - 110
Boron	101	99.5	P/P	90 - 110
Cadmium	101	101	P/P	90 - 110
Chromium	98.9	99.8	P/P	90 - 110
Cobalt	96.9	97.7	P/P	90 - 110
Copper	95.8	96.2	P/P	90 - 110
Lead	93.5	95.0	P/P	90 - 110
Manganese	98.9	101	P/P	90 - 110
Molybdenum	100	99.9	P/P	90 - 110
Nickel	97.0	97.6	P/P	90 - 110
Selenium	101	102	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	102	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A120023

Included Lab Sample IDs: 2418854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.7	94.9	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A120036

Included Lab Sample IDs: 2418853

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

Reference Method: SM 4500-F- C-2011

Run ID: A120036

Included Lab Sample IDs: 2418853

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A120043

Included Lab Sample IDs: 2418854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A120045

Included Lab Sample IDs: 2418854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	98.1	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A120051

Included Lab Sample IDs: 2418853

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	102	103	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A120059

Included Lab Sample IDs: 2418858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	99.3		P	80 - 120
Alpha-Chlordane	103		P	80 - 120
Beta-BHC	107		P	80 - 120
Beta-Cyfluthrin	116		P	80 - 120
Bifenthrin	102		P	80 - 120
Carbophenothion	102		P	80 - 120
Chlorothalonil	103		P	80 - 120
Cis-Nonachlor	105		P	80 - 120
Cypermethrin	103		P	80 - 120
Dacthal	105		P	80 - 120
DDD-p,p'	110		P	80 - 120
DDE-p,p'	102		P	80 - 120
DDT-p,p'	100		P	80 - 120
Delta-BHC	101		P	80 - 120
Deltamethrin	104		P	80 - 120
Dichlobenil	103		P	80 - 120
Dicofol	90.7		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	102		P	80 - 120
Endosulfan II	105		P	80 - 120
Endosulfan Sulfate	99.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A120059
Included Lab Sample IDs: 2418858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endrin	104		P	80 - 120
Endrin Aldehyde	98.6		P	80 - 120
Endrin Ketone	108		P	80 - 120
Esfenvalerate	105		P	80 - 120
Ethalfuralin	94.1		P	80 - 120
Fenpropathrin	101		P	80 - 120
Gamma-BHC	103		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	99.6		P	80 - 120
Heptachlor Epoxide	101		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	61.7*		F	80 - 120
Lambda-Cyhalothrin	113		P	80 - 120
Methoprene	103		P	80 - 120
Methoxychlor	101		P	80 - 120
MGK-264	101		P	80 - 120
Mirex	80.3		P	80 - 120
Oxychlordane	104		P	80 - 120
Permethrin	107		P	80 - 120
Phenothrin	107		P	80 - 120
Piperonyl Butoxide	94.2		P	80 - 120
Prallethrin	104		P	80 - 120
Tau-Fluvalinate	107		P	80 - 120
Tetramethrin	99.5		P	80 - 120
Trans-Nonachlor	104		P	80 - 120
Triclosan Methyl	101		P	80 - 120
Trifluralin	97.9		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A120076
Included Lab Sample IDs: 2418854

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	99.1	P/P	90 - 110

Reference Method: EPA 8276
Run ID: A120082
Included Lab Sample IDs: 2418858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	90.5		P	80 - 120
Toxaphene	86.7		P	80 - 120

Reference Method: SM 2320 B-2011
Run ID: A120110
Included Lab Sample IDs: 2418853

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.6	94.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A120209

Included Lab Sample IDs: 2418859

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	103	P/P	90 - 110
Iron	103	105	P/P	90 - 110
Magnesium	102	105	P/P	90 - 110
Potassium	100	102	P/P	90 - 110
Sodium	99.1	101	P/P	90 - 110
Strontium	102	99.9	P/P	90 - 110
Tin	104	101	P/P	90 - 110
Titanium	101	98.4	P/P	90 - 110
Vanadium	102	99.1	P/P	90 - 110
Zinc	103	102	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A120374

Included Lab Sample IDs: 2418858

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	101		P	80 - 120
PCB-1260	95.3		P	80 - 120

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
DEP SOP: NU-094-1	Color (true)	98.2					14.6	
EPA 180.1 Rev. 2.0	Turbidity	100					19.7	
EPA 200.7 Rev. 4.4	Calcium	105	107	107	109			0.0610
	Iron	105	109	108	108			0.715
	Magnesium	105	106	105	108			0.502
	Potassium	101	103	103	101			0.0725
	Sodium	101	99.3	105				0.618
	Strontium	99.5	102	101	102			0.387
	Tin	101	105	101	104			3.97
	Titanium	100	103	103	96.5			0.0837
	Vanadium	100	104	104	105			0.108
	Zinc	99.2	102	103	104			0.0786
EPA 200.8 Rev. 5.4	Aluminum	103	103	103	99.0			0.204
	Antimony	103	104	106	101			1.27
	Arsenic	102	101	102	98.7			0.374
	Barium	106	106	106	105			0.0980
	Beryllium	99.8	101	101	93.7			0.211
	Boron	103	104	103	102			0.308
	Cadmium	101	101	102	101			1.20
	Chromium	98.9	97.5	97.7	97.3			0.174
	Cobalt	98.8	98.4	98.0	98.3			0.391
	Copper	98.2	99.2	98.7	97.0			0.527
	Lead	96.0	96.8	97.8	95.2			1.07
	Manganese	98.8	99.1	98.6	98.7			0.398
	Molybdenum	101	101	102	96.2			0.495
	Nickel	99.2	98.2	97.9	97.2			0.344
	Selenium	102	103	100	96.9			2.93
	Silver	104	104	104	102			0.197
	Thallium	102	104	106	104			1.28
EPA 300.0 Rev. 2.1	Chloride	103	106	105			5.09	
	Sulfate	102	101				5.19	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	97.0	97.4				0.306
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	96.0	102	106				2.66
EPA 353.2 Rev. 2.0	NO2NO3-N	106	104	104				0.482
EPA 365.1 Rev. 2.0	Total-P	98.2	99.7	99.0				0.687
EPA 8270E	Aldrin	49.6	45.8	39.4				14.9
	Alpha-BHC	81.1	79.3	74.7				5.96
	Alpha-Chlordane	73.8	68.6	62.8				8.78
	Beta-BHC	99.6	123	133				7.65
	Beta-Cyfluthrin	75.4	86.4	79.2				8.75
	Bifenthrin	52.5	65.5	52.7				21.7
	Carbophenothion	54.3	63.4	55.5				13.3
	Chlorothalonil	110	142	167				16.0
	Cis-Nonachlor	72.5	65.4	57.3				13.3
	Cypermethrin	99.1	121	114				6.10
	Dacthal	85.5	78.3	81.8				4.34
	DDD-p,p'	69.0	63.1	59.0				6.61
	DDE-p,p'	70.9	62.1	55.5				11.3
	DDT-p,p'	68.0	64.5	55.0				16.0
	Delta-BHC	86.9	95.3	96.8				1.56
	Deltamethrin	139	171	163				4.76
	Dichlobenil	56.1	34.0	39.8				15.7
	Dicofol	73.7	70.8	62.6				12.3
	Dieldrin	79.4	71.8	63.2				11.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision LCS	SMP	MS
EPA 8270E	Endosulfan I	80.3	87.7	76.0			14.3
	Endosulfan II	78.5	79.5	71.1			11.2
	Endosulfan Sulfate	78.8	68.5	72.0			4.95
	Endrin	76.8	69.0	66.0			4.51
	Endrin Aldehyde	76.5	62.2	64.3			3.34
	Endrin Ketone	97.1	114	115			0.875
	Esfenvalerate	95.2	111	110			1.59
	Ethalfuralin	73.6	66.4	63.3			4.74
	Fenpropathrin	72.3	74.0	69.3			6.59
	Gamma-BHC	92.2	112	118			5.05
	Gamma-Chlordane	70.9	65.2	58.8			10.3
	Heptachlor	73.7	87.9	72.8			18.8
	Heptachlor Epoxide	83.6	82.2	73.5			11.2
	Hexachlorobenzene	68.6	65.7	57.5			13.2
	Kepone	63.5	73.8	78.8			6.56
	Lambda-Cyhalothrin	71.5	91.7	85.6			6.92
	Methoprene	66.1	66.5	58.3			13.1
	Methoxychlor	71.3	66.0	62.6			5.19
	MGK-264	86.3	78.5	79.2			0.898
	Mirex	51.2	53.0	43.1			20.6
	Oxychlordane	75.2	74.7	66.0			12.4
	PCB-1016	76.7	82.8	73.9			11.4
	PCB-1260	71.1	82.4	66.7			21.0
	Permethrin	86.9	99.7	91.5			8.59
	Phenothrin	67.9	68.6	45.9			39.6
	Piperonyl Butoxide	88.9	82.6	90.6			9.22
	Prallethrin	78.5	70.1	67.7			3.48
	Tau-Fluvalinate	87.4	109	117			7.57
	Tetramethrin	79.9	81.1	72.6			11.2
	Trans-Nonachlor	72.0	65.2	58.4			11.0
	Triclosan Methyl	74.5	75.0	69.3			7.80
	Trifluralin	75.0	66.8	58.5			13.3
EPA 8276	Chlordane	48.6	42.9	39.9			7.31
	Toxaphene	50.6	48.6	44.5			8.94
SM 2320 B-2011	Total Alkalinity	95.8				0.244	
SM 2540 C-2015	TDS	102				3.92	
SM 2540 D-2015	TSS	98.4					
SM 4500-F- C-2011	Fluoride	105					1.45
SM 5310 B-2011	Organic Carbon	95.0	93.1	95.0			0.966

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2418853
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2418853
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2418859
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2418859
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2418853
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2418853
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2418854
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2418854

Reference Method Descriptions

Method	Description	<u>Associated Samples</u>
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2418854
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2418854
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2418858
EPA 8270E	PCBs in water matrices by GC/MS/MS	2418858
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2418858
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2418853
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2418859
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2418853
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2418853
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2418853
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2418854

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	06/21/2023			06/21/2023 15:46	Anna M. Plaviak	2418853
EPA 180.1 Rev. 2.0	06/21/2023			06/21/2023 13:22	Alexis Price	2418853
EPA 200.7 Rev. 4.4	06/21/2023	06/22/2023 12:45	George D Taylor	07/06/2023 15:25	Samatha Luckman	2418859
EPA 200.8 Rev. 5.4	06/21/2023	06/22/2023 12:45	George D Taylor	06/23/2023 16:03	Emily M Philpot	2418859
EPA 300.0 Rev. 2.1	06/21/2023			06/27/2023 00:45	James L Waggerby	2418853
EPA 350.1 Rev. 2.0	06/21/2023			06/27/2023 13:52	Khloe J Berg	2418854
EPA 351.2 Rev. 2.0	06/21/2023	06/23/2023 14:22	Samantha L Bates	06/26/2023 09:41	Samantha L Bates	2418854
EPA 353.2 Rev. 2.0	06/21/2023			06/27/2023 11:48	Beverly Y. Sanders	2418854
EPA 365.1 Rev. 2.0	06/21/2023	06/27/2023 13:15	Simonne.V. Calhoun	06/28/2023 13:52	Simonne.V. Calhoun	2418854
EPA 8270E	06/21/2023	06/23/2023 08:00	Fe-Val Siddell	06/27/2023 21:42	Michael Poppell	2418858
	06/21/2023	07/10/2023 08:00	Fe-Val Siddell	07/12/2023 23:35	Lipi Saha	2418858
EPA 8276	06/21/2023	06/23/2023 08:00	Fe-Val Siddell	06/28/2023 13:31	Arthur Maknenko	2418858
SM 2320 B-2011	06/21/2023			06/28/2023 19:50	Dale L. Simmons	2418853
SM 2340 B-2011	06/21/2023			07/06/2023 15:25	Samatha Luckman	2418859
SM 2540 C-2015	06/21/2023			06/23/2023 15:19	Yijie Li	2418853
SM 2540 D-2015	06/21/2023			06/23/2023 15:19	Yijie Li	2418853
SM 4500-F- C-2011	06/21/2023			06/24/2023 06:58	Dale L. Simmons	2418853
SM 5310 B-2011	06/21/2023			06/22/2023 15:14	Khloe J Berg	2418854