

Chemical Analysis Report

SE-DIST-2024-04-23-01

Florida DEP Laboratory
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DOH Accreditation E31780

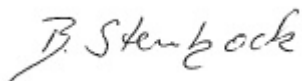
Event Description: **SMP - All Highlands (South, Central, North, Boat)**
Request ID: **RQ-2024-03-11-37**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 20-MAY-2024 18:29



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: ARBUCKLE BRANCH AT ARBUCKLE CREEK RD

Collection Date/Time: 04/22/2024 10:15

Field ID: G4SE0149

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484095	DEP SOP: NU-094-1	Color (true)	67	A	PCU	P444677	
	EPA 180.1 Rev. 2.0	Turbidity	14		NTU	P444681	
	EPA 300.0 Rev. 2.1	Chloride	36	A	mg Cl/L	P445116	
		Sulfate	28	A	mg SO4/L	P445118	
	SM 2320 B-2011	Total Alkalinity	6.9		mg CaCO3/L	P444979	
	SM 2540 C-2015	TDS	160	A	mg/L	P445283	
	SM 2540 D-2015	TSS	11	A	mg/L	P445050	
	SM 4500-F- C-2011	Fluoride	0.036	I	mg F/L	P445378	
2484096	EPA 350.1 Rev. 2.0	Ammonia-N	0.090		mg N/L	P444726	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P444806	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.035		mg N/L	P445304	
	EPA 365.1 Rev. 2.0	Total-P	0.061		mg P/L	P444854	
	SM 5310 B-2014	Organic Carbon	19		mg C/L	P445097	

Sample Location: JACKSON CREEK AT SR66

Collection Date/Time: 04/22/2024 12:15

Field ID: G4SE0187

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484099	DEP SOP: NU-094-1	Color (true)	62	J	PCU	P444677	
	EPA 180.1 Rev. 2.0	Turbidity	45		NTU	P444681	
	EPA 300.0 Rev. 2.1	Chloride	11		mg Cl/L	P445116	
		Sulfate	16		mg SO4/L	P445118	
	SM 2320 B-2011	Total Alkalinity	4.4		mg CaCO3/L	P444979	
	SM 2540 C-2015	TDS	71		mg/L	P445283	
	SM 2540 D-2015	TSS	75		mg/L	P445050	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P445378	
2484100	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P444728	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	9.5		mg N/L	P445312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P445304	
	EPA 365.1 Rev. 2.0	Total-P	0.43		mg P/L	P444854	
	SM 5310 B-2014	Organic Carbon	15		mg C/L	P445097	

Ref. Method and Comment:
DEP SOP: NU-094-1: The result may be biased high because of turbidity.

Sample Location: LAKE CREWS NORTHERN SECTION

Collection Date/Time: 04/22/2024 12:45

Field ID: G4SE0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484097	DEP SOP: NU-094-1	Color (true)	63		PCU	P444677	
	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P444681	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P445116	
		Sulfate	2.7		mg SO4/L	P445118	
	SM 2320 B-2011	Total Alkalinity	2.3	I	mg CaCO3/L	P444979	
	SM 2540 C-2015	TDS	66		mg/L	P445283	
	SM 2540 D-2015	TSS	6	I	mg/L	P445050	
	SM 4500-F- C-2011	Fluoride	0.031	I	mg F/L	P445378	
2484098	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P444726	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P445312	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P445304	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P444854	
	SM 5310 B-2014	Organic Carbon	16		mg C/L	P445097	

Sample Location: INDIAN PRAIRIE CANAL NEAR SR 70

Collection Date/Time: 04/22/2024 13:45

Field ID: G4SE0192

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484109	EPA 8270E	Aldrin	0.67	U	ng/L	P444700	
		Alpha-BHC	0.10	U	ng/L	P444700	
		Alpha-Chlordane	0.20	U	ng/L	P444700	
		PCB-1016	2.0	U	ng/L	P444700	
		Beta-BHC	0.10	U	ng/L	P444700	
		PCB-1221	2.0	U	ng/L	P444700	
		Beta-Cyfluthrin	1.3	U	ng/L	P444700	
		PCB-1232	2.0	U	ng/L	P444700	
		Bifenthrin	0.51	U	ng/L	P444700	
		PCB-1242	2.0	U	ng/L	P444700	
		PCB-1248	2.0	U	ng/L	P444700	
		Chlorothalonil	3.7	U	ng/L	P444700	
		PCB-1254	2.0	U	ng/L	P444700	
		Cis-Nonachlor	0.20	U	ng/L	P444700	
		PCB-1260	2.0	U	ng/L	P444700	
		Cypermethrin	1.5	U	ng/L	P444700	
		Dacthal	0.15	U	ng/L	P444700	
		DDD-p,p'	0.26	U	ng/L	P444700	
		DDE-p,p'	0.20	U	ng/L	P444700	
		DDT-p,p'	0.82	U	ng/L	P444700	
		Delta-BHC	0.41	U	ng/L	P444700	
		Deltamethrin	1.3	U	ng/L	P444700	
		Dichlobenil	0.26	U	ng/L	P444700	
		Dicofol	1.3	U	ng/L	P444700	
		Dieldrin	0.41	U	ng/L	P444700	
		Endosulfan I	0.41	U	ng/L	P444700	
		Endosulfan II	0.92	U	ng/L	P444700	
		Endosulfan Sulfate	0.31	U	ng/L	P444700	
		Endrin	0.92	U	ng/L	P444700	
		Endrin Aldehyde	0.77	U	ng/L	P444700	
		Endrin Ketone	0.41	U	ng/L	P444700	
		Esfenvalerate	0.77	U	ng/L	P444700	
		Ethalfuralin	0.15	U	ng/L	P444700	
		Fenpropathrin	0.26	U	ng/L	P444700	
		Gamma-BHC	0.13	U	ng/L	P444700	
		Gamma-Chlordane	0.24	I	ng/L	P444700	
		Heptachlor	0.20	U	ng/L	P444700	
		Heptachlor Epoxide	0.26	U	ng/L	P444700	
		Hexachlorobenzene**	1.0	U	ng/L	P444700	
		Kepone	14	U	ng/L	P444700	
		Lambda-Cyhalothrin	0.77	U	ng/L	P444700	
		Methoprene	0.77	U	ng/L	P444700	
		Methoxychlor	0.31	U	ng/L	P444700	
		MGK-264	0.20	U	ng/L	P444700	

Field ID: G4SE0192

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2484109	EPA 8270E	Mirex	0.36	U	ng/L	P444700	
		Oxychlordane	0.31	U	ng/L	P444700	
		Permethrin	1.6	U	ng/L	P444700	
		Phenothrin	0.92	U	ng/L	P444700	
		Piperonyl Butoxide	0.15	U	ng/L	P444700	
		Prallethrin	2.0	U	ng/L	P444700	
		Tau-Fluvalinate	0.26	U	ng/L	P444700	
		Tetramethrin	0.77	U	ng/L	P444700	
		Trans-Nonachlor	0.20	U	ng/L	P444700	
		Triclosan Methyl	0.15	U	ng/L	P444700	
		Trifluralin	0.20	U	ng/L	P444700	
	EPA 8276	Chlordane	2.0	U	ng/L	P444700	
		Toxaphene	15	U	ng/L	P444700	
2484113	EPA 200.7 Rev. 4.4	Calcium	15.0		mg/L	P444715	
		Iron	320		ug/L	P444715	
		Magnesium	6.26		mg/L	P444715	
		Potassium	5.3		mg/L	P444715	
		Sodium	12.8		mg/L	P444715	
		Strontium	572		ug/L	P444715	
		Tin	3.0	U	ug/L	P444715	
		Titanium	0.75	U	ug/L	P444715	
		Vanadium	2.0	U	ug/L	P444715	
		Zinc	5.0	U	ug/L	P444715	
	EPA 200.8 Rev. 5.4	Aluminum	109		ug/L	P444715	
		Antimony	0.050	U	ug/L	P444715	
		Arsenic	0.87		ug/L	P444715	
		Barium	20.3		ug/L	P444715	
		Beryllium	0.026	I	ug/L	P444715	
		Boron	38.4		ug/L	P444715	
		Cadmium	0.020	U	ug/L	P444715	
		Chromium	0.40	U	ug/L	P444715	
		Cobalt	0.092		ug/L	P444715	
		Copper	0.58	I	ug/L	P444715	
		Lead	0.22	I	ug/L	P445049	
		Manganese	17.7		ug/L	P444715	
		Molybdenum	0.23	I	ug/L	P444715	
		Nickel	0.50	U	ug/L	P444715	
		Selenium	0.20	U	ug/L	P444715	
	SM 2340 B-2011	Silver	0.010	U	ug/L	P444715	
		Thallium	0.10	U	ug/L	P444715	
		Hardness	63.1		mg/L	P444715	

Quality Assurance Report

Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P444677

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P444681

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P444715

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: P444715

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
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445049

Component	Result	Code	Units
Lead	0.20	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445116

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445118

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444726

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444728

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P444806

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445312

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P445304

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P444854

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

Reference Method: EPA 8270E
Batch ID: P444700

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8270E

Batch ID: P444700

Component	Result	Code	Units
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Chlorothalonil	3.6	U	ng/L
Cis-Nonachlor	0.20	U	ng/L
Cypermethrin	1.5	U	ng/L
Dacthal	0.15	U	ng/L
DDD-p,p'	0.25	U	ng/L
DDE-p,p'	0.20	U	ng/L
DDT-p,p'	0.80	U	ng/L
Delta-BHC	0.40	U	ng/L
Deltamethrin	1.2	U	ng/L
Dichlobenil	0.25	U	ng/L
Dicofol	1.2	U	ng/L
Dieldrin	0.40	U	ng/L
Endosulfan I	0.40	U	ng/L
Endosulfan II	0.90	U	ng/L
Endosulfan Sulfate	0.30	U	ng/L
Endrin	0.90	U	ng/L
Endrin Aldehyde	0.75	U	ng/L
Endrin Ketone	0.40	U	ng/L
Esfenvalerate	0.75	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	14	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.35	U	ng/L
Oxychlordane	0.30	U	ng/L
PCB-1016	2.0	U	ng/L
PCB-1221	2.0	U	ng/L
PCB-1232	2.0	U	ng/L
PCB-1242	2.0	U	ng/L
PCB-1248	2.0	U	ng/L
PCB-1254	2.0	U	ng/L
PCB-1260	2.0	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8276
Batch ID: P444700

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

Reference Method: SM 2320 B-2011
Batch ID: P444979

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

Reference Method: SM 2540 C-2015
Batch ID: P445283

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P445050

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P445378

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2014
Batch ID: P445097

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: P444677

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: P444681

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P444715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	110		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	99.0		P	85 - 115
Sodium	99.8		P	85 - 115
Strontium	96.9		P	85 - 115
Tin	96.1		P	85 - 115
Titanium	99.5		P	85 - 115
Vanadium	99.0		P	85 - 115
Zinc	97.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P444715

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	110		P	85 - 115
Antimony	112		P	85 - 115
Arsenic	101		P	85 - 115
Barium	112		P	85 - 115
Beryllium	105		P	85 - 115
Boron	112		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	104		P	85 - 115
Cobalt	99.0		P	85 - 115
Copper	95.1		P	85 - 115
Manganese	107		P	85 - 115
Molybdenum	102		P	85 - 115
Nickel	96.4		P	85 - 115
Selenium	102		P	85 - 115
Silver	107		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445049

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Lead	98.3		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445116

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445118

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444726

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444728

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P444806

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445312

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.8		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P445304

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P444854

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

Reference Method: EPA 8270E
Batch ID: P444700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	51.5		P	30 - 96.0
Alpha-BHC	85.6		P	70 - 109
Alpha-Chlordane	72.9		P	45 - 107
Beta-BHC	102		P	64 - 138

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P444700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beta-Cyfluthrin	62.7		P	17 - 141
Bifenthrin	46.4		P	10 - 113
Chlorothalonil	74.9		P	26 - 180
Cis-Nonachlor	60.1		P	37 - 102
Cypermethrin	72.0		P	20 - 133
Dacthal	91.4		P	69 - 114
DDD-p,p'	67.1		P	42 - 105
DDE-p,p'	64.0		P	42 - 106
DDT-p,p'	61.7		P	42 - 107
Delta-BHC	100		P	67 - 144
Deltamethrin	78.6		P	15 - 149
Dichlobenil	73.6		P	46 - 117
Dicofol	66.9		P	34 - 114
Dieldrin	67.5		P	50 - 108
Endosulfan I	76.3		P	55 - 104
Endosulfan II	70.2		P	51 - 111
Endosulfan Sulfate	74.7		P	56 - 121
Endrin	70.0		P	10 - 106
Endrin Aldehyde	66.3		P	34 - 114
Endrin Ketone	82.6		P	63 - 177
Esfenvalerate	64.1		P	29 - 143
Ethalfuralin	71.5		P	46 - 96.0
Fenpropathrin	61.5		P	28 - 115
Gamma-BHC	97.8		P	65 - 121
Gamma-Chlordane	70.7		P	39 - 103
Heptachlor	62.6		P	39 - 94.0
Heptachlor Epoxide	81.3		P	54 - 104
Hexachlorobenzene	65.4		P	36 - 100
Kepone	198		P	10 - 225
Lambda-Cyhalothrin	56.2		P	10 - 135
Methoprene	48.4		P	10 - 109
Methoxychlor	76.2		P	52 - 112
MGK-264	86.8		P	44 - 117
Mirex	47.5		P	20 - 90.0
Oxychlordane	76.6		P	44 - 102
PCB-1016	73.3		P	45 - 107
PCB-1260	74.9		P	40 - 118
Permethrin	61.7		P	18 - 135
Phenothrin	47.5		P	10 - 102
Piperonyl Butoxide	100		P	28 - 156
Prallethrin	61.6		P	28 - 113
Tau-Fluvalinate	51.3		P	10 - 123
Tetramethrin	89.5		P	18 - 158
Trans-Nonachlor	67.9		P	39 - 104
Triclosan Methyl	66.2		P	54 - 108
Trifluralin	66.8		P	46 - 97.0

Reference Method: EPA 8276
Batch ID: P444700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	69.8		P	52 - 117

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8276
Batch ID: P444700

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Toxaphene	64.7		P	44 - 125

Reference Method: SM 2320 B-2011
Batch ID: P444979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	92 - 105

Reference Method: SM 2540 C-2015
Batch ID: P445283

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	98.8		P	85 - 115

Reference Method: SM 2540 D-2015
Batch ID: P445050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	96.8		P	85 - 115

Reference Method: SM 4500-F- C-2011
Batch ID: P445378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.4		P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P445097

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P444715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483851	Calcium	101		P	80 - 120
2483851	Iron	108	109	P/P	80 - 120
2483851	Magnesium	103		P	80 - 120
2483851	Potassium	100	100	P/P	80 - 120
2483851	Sodium	98.2		P	80 - 120
2483851	Strontium	95.4	96.8	P/P	80 - 120
2483851	Tin	92.5	94.3	P/P	80 - 120
2483851	Titanium	98.4	100	P/P	80 - 120
2483851	Vanadium	97.9	99.2	P/P	80 - 120
2483851	Zinc	95.8	96.9	P/P	80 - 120
2484257	Calcium	99.9		P	80 - 120
2484257	Iron	108		P	80 - 120
2484257	Magnesium	108		P	80 - 120
2484257	Potassium	103		P	80 - 120
2484257	Sodium	99.3		P	80 - 120
2484257	Strontium	94.7		P	80 - 120
2484257	Tin	93.9		P	80 - 120
2484257	Titanium	99.1		P	80 - 120
2484257	Vanadium	99.2		P	80 - 120
2484257	Zinc	96.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P444715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483851	Aluminum	105	107	P/P	80 - 120
2483851	Antimony	108	111	P/P	80 - 120
2483851	Arsenic	102	103	P/P	80 - 120
2483851	Barium	107	111	P/P	80 - 120
2483851	Beryllium	108	109	P/P	80 - 120
2483851	Boron	109	111	P/P	80 - 120
2483851	Cadmium	102	106	P/P	80 - 120
2483851	Chromium	102	104	P/P	80 - 120
2483851	Cobalt	98.2	98.3	P/P	80 - 120
2483851	Copper	94.9	95.3	P/P	80 - 120
2483851	Manganese	105	105	P/P	80 - 120
2483851	Molybdenum	102	104	P/P	80 - 120
2483851	Nickel	97.4	97.2	P/P	80 - 120
2483851	Selenium	103	101	P/P	80 - 120
2483851	Silver	103	112	P/P	80 - 120
2483851	Thallium	103	105	P/P	80 - 120
2484257	Aluminum	106		P	80 - 120
2484257	Antimony	108		P	80 - 120
2484257	Arsenic	99.8		P	80 - 120
2484257	Barium	107		P	80 - 120
2484257	Beryllium	109		P	80 - 120
2484257	Boron	110		P	80 - 120
2484257	Cadmium	99.7		P	80 - 120
2484257	Chromium	100		P	80 - 120
2484257	Cobalt	96.3		P	80 - 120
2484257	Copper	92.9		P	80 - 120
2484257	Manganese	104		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P444715

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484257	Molybdenum	101		P	80 - 120
2484257	Nickel	93.8		P	80 - 120
2484257	Selenium	101		P	80 - 120
2484257	Silver	105		P	80 - 120
2484257	Thallium	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445049

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2485415	Lead	98.2	98.4	P/P	80 - 120
2485658	Lead	100		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484095	Chloride	101		P	90 - 110
2484185	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484095	Sulfate	99.8		P	90 - 110
2484185	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444726

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484036	Ammonia-N	96.6	97.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444728

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484107	Ammonia-N	96.6	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P444806

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484036	Kjeldahl Nitrogen	97.4	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445312

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483773	Kjeldahl Nitrogen	101	102	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P445304

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484043	NO2NO3-N	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P444854

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484044	Total-P	105	110	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P444700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484318	Aldrin	56.1	46.6	P/P	24 - 81.0
2484318	Alpha-BHC	89.2	81.1	P/P	65 - 110
2484318	Alpha-Chlordane	72.6	59.6	P/P	43 - 119
2484318	Beta-BHC	112	101	P/P	54 - 165
2484318	Beta-Cyfluthrin	64.2	84.7	P/P	27 - 165
2484318	Bifenthrin	56.0	71.5	P/P	17 - 117
2484318	Chlorothalonil	65.4	85.7	P/P	10 - 255
2484318	Cis-Nonachlor	55.7	44.4	P/P	34 - 98.0
2484318	Cypermethrin	74.0	81.4	P/P	25 - 143
2484318	Dacthal	95.3	75.9	P/P	55 - 139
2484318	DDD-p,p'	65.2	60.4	P/P	30 - 109
2484318	DDE-p,p'	63.3	47.1	P/P	35 - 106
2484318	DDT-p,p'	60.4	53.7	P/P	41 - 101
2484318	Delta-BHC	116	106	P/P	58 - 165
2484318	Deltamethrin	86.7	108	P/P	10 - 194
2484318	Dichlobenil	41.6	31.8	P/P	22 - 114
2484318	Dicofol	60.1	61.4	P/P	17 - 133
2484318	Dieldrin	65.4	54.8	P/P	45 - 129
2484318	Endosulfan I	77.1	63.0	P/P	49 - 104
2484318	Endosulfan II	64.4	48.1	P/P	37 - 117
2484318	Endosulfan Sulfate	68.3	52.5	P/P	38 - 128
2484318	Endrin	67.5	54.1	P/P	35 - 116
2484318	Endrin Aldehyde	46.5	40.7	P/P	19 - 108
2484318	Endrin Ketone	72.9	65.3	P/P	44 - 134
2484318	Esfenvalerate	69.2	83.9	P/P	27 - 176
2484318	Ethalfuralin	67.6	62.3	P/P	49 - 100
2484318	Fenpropathrin	64.4	74.4	P/P	34 - 117
2484318	Gamma-BHC	106	93.5	P/P	59 - 129
2484318	Gamma-Chlordane	71.3	58.5	P/P	33 - 107
2484318	Heptachlor	64.2	55.9	P/P	37 - 94.0
2484318	Heptachlor Epoxide	80.1	70.4	P/P	38 - 118
2484318	Hexachlorobenzene	67.1	64.4	P/P	35 - 97.0
2484318	Kepone	79.8	75.4	P/P	10 - 221
2484318	Lambda-Cyhalothrin	63.1	62.0	P/P	23 - 190
2484318	Methoprene	55.7	45.0	P/P	21 - 109
2484318	Methoxychlor	72.6	69.6	P/P	46 - 118
2484318	MGK-264	95.7	75.9	P/P	39 - 122
2484318	Mirex	48.9	43.6	P/P	25 - 90.0
2484318	Oxychlordane	84.1	80.9	P/P	42 - 100
2484318	Permethrin	66.2	106	P/P	33 - 181

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P444700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484318	Phenothrin	53.5	80.4	P/P	12 - 125
2484318	Piperonyl Butoxide	90.7	88.2	P/P	10 - 178
2484318	Prallethrin	42.6	37.0	P/P	24 - 122
2484318	Tau-Fluvalinate	58.0	86.1	P/P	13 - 151
2484318	Tetramethrin	74.5	68.1	P/P	16 - 172
2484318	Trans-Nonachlor	69.8	55.0	P/P	39 - 100
2484318	Triclosan Methyl	66.6	51.4	P/P	43 - 110
2484318	Trifluralin	67.4	59.0	P/P	45 - 94.0
2484757	PCB-1016	71.7	66.8	P/P	45 - 107
2484757	PCB-1260	73.4	74.0	P/P	40 - 112

Reference Method: EPA 8276
Batch ID: P444700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2484757	Chlordane	70.1	81.1	P/P	43 - 123
2484757	Toxaphene	65.0	76.6	P/P	27 - 156

Reference Method: SM 4500-F- C-2011
Batch ID: P445378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483771	Fluoride	105	106	P/P	94 - 106

Reference Method: SM 5310 B-2014
Batch ID: P445097

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2483937	Organic Carbon	97.3	99.7	P/P	85 - 115

Quality Assurance Report

Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P444677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484095	Color (true)	1.61	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P444681

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484069	Turbidity	11.7	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P444715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483851	Calcium	0.385	Spike	P	0 - 20
2483851	Iron	0.933	Spike	P	0 - 20
2483851	Magnesium	0.226	Spike	P	0 - 20
2483851	Potassium	0.0665	Spike	P	0 - 20
2483851	Sodium	0.0536	Spike	P	0 - 20
2483851	Strontium	1.34	Spike	P	0 - 20
2483851	Tin	1.94	Spike	P	0 - 20
2483851	Titanium	1.73	Spike	P	0 - 20
2483851	Vanadium	1.38	Spike	P	0 - 20
2483851	Zinc	1.22	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P444715

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483851	Aluminum	1.68	Spike	P	0 - 20
2483851	Antimony	3.00	Spike	P	0 - 20
2483851	Arsenic	0.657	Spike	P	0 - 20
2483851	Barium	3.51	Spike	P	0 - 20
2483851	Beryllium	1.33	Spike	P	0 - 20
2483851	Boron	1.14	Spike	P	0 - 20
2483851	Cadmium	3.81	Spike	P	0 - 20
2483851	Chromium	1.79	Spike	P	0 - 20
2483851	Cobalt	0.180	Spike	P	0 - 20
2483851	Copper	0.392	Spike	P	0 - 20
2483851	Manganese	0.286	Spike	P	0 - 20
2483851	Molybdenum	2.52	Spike	P	0 - 20
2483851	Nickel	0.165	Spike	P	0 - 20
2483851	Selenium	1.88	Spike	P	0 - 20
2483851	Silver	8.77	Spike	P	0 - 20
2483851	Thallium	1.95	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P445049

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2485415	Lead	0.113	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484095	Chloride	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P445118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484095	Sulfate	1.22	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444726

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484036	Ammonia-N	0.549	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P444728

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484107	Ammonia-N	1.05	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P444806

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484036	Kjeldahl Nitrogen	4.49	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P445312

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483773	Kjeldahl Nitrogen	0.716	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P445304

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484043	NO2NO3-N	0.468	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P444854

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484044	Total-P	4.46	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P444700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484318	Aldrin	18.5	Spike	P	0 - 41
2484318	Alpha-BHC	9.49	Spike	P	0 - 25
2484318	Alpha-Chlordane	19.6	Spike	P	0 - 32
2484318	Beta-BHC	10.9	Spike	P	0 - 33
2484318	Beta-Cyfluthrin	27.6	Spike	P	0 - 43
2484318	Bifenthrin	24.5	Spike	P	0 - 52
2484318	Chlorothalonil	26.9	Spike	P	0 - 82
2484318	Cis-Nonachlor	22.5	Spike	P	0 - 33
2484318	Cypermethrin	9.57	Spike	P	0 - 51
2484318	Dacthal	22.8	Spike	P	0 - 27
2484318	DDD-p,p'	7.69	Spike	P	0 - 39
2484318	DDE-p,p'	29.3	Spike	P	0 - 31
2484318	DDT-p,p'	11.8	Spike	P	0 - 29
2484318	Delta-BHC	9.29	Spike	P	0 - 35
2484318	Deltamethrin	21.5	Spike	P	0 - 100
2484318	Dichlobenil	26.6	Spike	P	0 - 40
2484318	Dicofol	2.23	Spike	P	0 - 37
2484318	Dieldrin	17.6	Spike	P	0 - 27
2484318	Endosulfan I	20.1	Spike	P	0 - 23
2484318	Endosulfan II	29.0	Spike	P	0 - 34
2484318	Endosulfan Sulfate	26.2	Spike	P	0 - 36
2484318	Endrin	22.0	Spike	P	0 - 45
2484318	Endrin Aldehyde	13.3	Spike	P	0 - 76
2484318	Endrin Ketone	11.1	Spike	P	0 - 43
2484318	Esfenvalerate	19.1	Spike	P	0 - 51
2484318	Ethalfuralin	8.15	Spike	P	0 - 22
2484318	Fenpropathrin	14.4	Spike	P	0 - 49
2484318	Gamma-BHC	12.1	Spike	P	0 - 28
2484318	Gamma-Chlordane	19.7	Spike	P	0 - 40
2484318	Heptachlor	13.7	Spike	P	0 - 29
2484318	Heptachlor Epoxide	13.0	Spike	P	0 - 33
2484318	Hexachlorobenzene	4.06	Spike	P	0 - 36
2484318	Kepone	5.63	Spike	P	0 - 85
2484318	Lambda-Cyhalothrin	1.76	Spike	P	0 - 55
2484318	Methoprene	21.3	Spike	P	0 - 53
2484318	Methoxychlor	4.16	Spike	P	0 - 50
2484318	MGK-264	23.0	Spike	P	0 - 43
2484318	Mirex	11.5	Spike	P	0 - 40
2484318	Oxychlordane	3.91	Spike	P	0 - 31
2484318	Permethrin	46.0	Spike	P	0 - 50
2484318	Phenothrin	40.1	Spike	P	0 - 58
2484318	Piperonyl Butoxide	2.79	Spike	P	0 - 100
2484318	Prallethrin	13.9	Spike	P	0 - 39
2484318	Tau-Fluvalinate	39.0	Spike	P	0 - 54

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P444700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484318	Tetramethrin	8.98	Spike	P	0 - 51
2484318	Trans-Nonachlor	23.7	Spike	P	0 - 39
2484318	Triclosan Methyl	25.8	Spike	P	0 - 31
2484318	Trifluralin	13.3	Spike	P	0 - 22
2484757	PCB-1016	6.99	Spike	P	0 - 25
2484757	PCB-1260	0.747	Spike	P	0 - 30

Reference Method: EPA 8276
Batch ID: P444700

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484757	Chlordane	14.5	Spike	P	0 - 28
2484757	Toxaphene	16.5	Spike	P	0 - 27

Reference Method: SM 2320 B-2011
Batch ID: P444979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484215	Total Alkalinity	0.173	Sample	P	0 - 3.9

Reference Method: SM 2540 C-2015
Batch ID: P445283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484095	TDS	1.88	Sample	P	0 - 10

Reference Method: SM 2540 D-2015
Batch ID: P445050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2484095	TSS	7.14	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P445378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483771	Fluoride	1.04	Spike	P	0 - 1.9

Reference Method: SM 5310 B-2014
Batch ID: P445097

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2483937	Organic Carbon	2.40	Spike	P	0 - 15

Quality Assurance Report Precision

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2484109
Field Sample ID: G4SE0192

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	87.1	P	37 - 129
EPA 8270E	Decachlorobiphenyl	83.5	P	26 - 115
EPA 8270E	Tetrachloro-m-xylene	51.0	P	30 - 101
EPA 8270E	Tetrachloro-m-xylene	61.3	P	29 - 95.0
EPA 8276	Decachlorobiphenyl	62.5	P	23 - 110
EPA 8276	PCNB	84.5	P	51 - 130

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A125475
Included Lab Sample IDs: 2484095, 2484097, 2484099

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: A125476
Included Lab Sample IDs: 2484095, 2484097, 2484099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A125491
Included Lab Sample IDs: 2484096, 2484098, 2484100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	96.9	96.5	P/P	90 - 110
Ammonia-N	97.3	96.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A125538
Included Lab Sample IDs: 2484113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.5	98.9	P/P	90 - 110
Iron	100	99.9	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Potassium	100	99.5	P/P	90 - 110
Sodium	98.2	98.2	P/P	90 - 110
Strontium	98.2	97.0	P/P	90 - 110
Tin	96.9	96.9	P/P	90 - 110
Titanium	99.5	100	P/P	90 - 110
Vanadium	98.7	98.9	P/P	90 - 110
Zinc	99.1	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A125560
Included Lab Sample IDs: 2484113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	105	107	P/P	90 - 110
Arsenic	99.6	102	P/P	90 - 110
Barium	105	108	P/P	90 - 110
Beryllium	103	107	P/P	90 - 110
Boron	103	106	P/P	90 - 110
Cadmium	102	104	P/P	90 - 110
Chromium	98.2	100	P/P	90 - 110
Cobalt	95.8	98.0	P/P	90 - 110
Copper	93.9	95.8	P/P	90 - 110
Manganese	101	105	P/P	90 - 110
Molybdenum	99.2	102	P/P	90 - 110
Nickel	94.7	95.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A125560

Included Lab Sample IDs: 2484113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	102	106	P/P	90 - 110
Silver	99.4	102	P/P	90 - 110
Thallium	101	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A125580

Included Lab Sample IDs: 2484113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	96.6	94.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A125583

Included Lab Sample IDs: 2484096, 2484100

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A125587

Included Lab Sample IDs: 2484098

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	96.5	98.0	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A125588

Included Lab Sample IDs: 2484095, 2484097, 2484099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.9	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A125625

Included Lab Sample IDs: 2484096

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	94.1	P/P	90 - 110

Reference Method: EPA 8270E

Run ID: A125632

Included Lab Sample IDs: 2484109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	100		P	80 - 120
Alpha-Chlordane	94.6		P	80 - 120
Beta-BHC	92.0		P	80 - 120
Beta-Cyfluthrin	103		P	80 - 120
Bifenthrin	101		P	80 - 120
Chlorothalonil	93.0		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A125632
Included Lab Sample IDs: 2484109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cis-Nonachlor	102		P	80 - 120
Cypermethrin	97.4		P	80 - 120
Dacthal	94.3		P	80 - 120
DDE-p,p'	99.8		P	80 - 120
Delta-BHC	100		P	80 - 120
Deltamethrin	102		P	80 - 120
Dichlobenil	91.9		P	80 - 120
Dicofol	96.0		P	80 - 120
Dieldrin	99.6		P	80 - 120
Endosulfan I	94.0		P	80 - 120
Endosulfan II	98.0		P	80 - 120
Endosulfan Sulfate	98.8		P	80 - 120
Endrin	101		P	80 - 120
Endrin Aldehyde	81.7		P	80 - 120
Endrin Ketone	95.3		P	80 - 120
Esfenvalerate	94.5		P	80 - 120
Ethalfuralin	102		P	80 - 120
Fenpropathrin	99.5		P	80 - 120
Gamma-BHC	108		P	80 - 120
Gamma-Chlordane	93.0		P	80 - 120
Heptachlor	102		P	80 - 120
Heptachlor Epoxide	96.7		P	80 - 120
Hexachlorobenzene	103		P	80 - 120
Kepone	80.4		P	80 - 120
Lambda-Cyhalothrin	95.4		P	80 - 120
Methoprene	104		P	80 - 120
Methoxychlor	99.1		P	80 - 120
MGK-264	91.4		P	80 - 120
Mirex	100		P	80 - 120
Oxychlordane	100		P	80 - 120
Permethrin	102		P	80 - 120
Phenothrin	104		P	80 - 120
Piperonyl Butoxide	105		P	80 - 120
Prallethrin	96.2		P	80 - 120
Tau-Fluvalinate	105		P	80 - 120
Tetramethrin	93.4		P	80 - 120
Trans-Nonachlor	93.6		P	80 - 120
Triclosan Methyl	99.0		P	80 - 120
Trifluralin	101		P	80 - 120

Reference Method: SM 5310 B-2014
Run ID: A125633
Included Lab Sample IDs: 2484096, 2484098, 2484100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	99.3	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
Run ID: A125635
Included Lab Sample IDs: 2484109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
DDD-p,p'	103		P	80 - 120
DDT-p,p'	94.7		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A125640
Included Lab Sample IDs: 2484095, 2484097, 2484099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.0	P/P	90 - 110
Sulfate	103	101	P/P	90 - 110

Reference Method: EPA 8276
Run ID: A125650
Included Lab Sample IDs: 2484109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	99.8		P	80 - 120
Toxaphene	101		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A125661
Included Lab Sample IDs: 2484113

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	98.3	97.3	P/P	90 - 110

Reference Method: EPA 8270E
Run ID: A125679
Included Lab Sample IDs: 2484109

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
PCB-1016	102		P	80 - 120
PCB-1260	101		P	80 - 120

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A125706
Included Lab Sample IDs: 2484096, 2484098, 2484100

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

Reference Method: SM 4500-F- C-2011
Run ID: A125734
Included Lab Sample IDs: 2484095, 2484097, 2484099

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	101	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A125763
Included Lab Sample IDs: 2484098, 2484100

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	109	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	MS
			LCS	SMP	MS		
DEP SOP: NU-094-1	Color (true)	101				1.61	
EPA 180.1 Rev. 2.0	Turbidity	101				11.7	
EPA 200.7 Rev. 4.4	Calcium	102	101	99.9			0.385
	Iron	110	108	109	108		0.933
	Magnesium	103	103	108			0.226
	Potassium	99.0	100	100	103		0.0665
	Sodium	99.8	98.2	99.3			0.0536
	Strontium	96.9	95.4	96.8	94.7		1.34
	Tin	96.1	92.5	94.3	93.9		1.94
	Titanium	99.5	98.4	100	99.1		1.73
	Vanadium	99.0	97.9	99.2	99.2		1.38
	Zinc	97.6	95.8	96.9	96.3		1.22
EPA 200.8 Rev. 5.4	Aluminum	110	105	107	106		1.68
	Antimony	112	108	111	108		3.00
	Arsenic	101	102	103	99.8		0.657
	Barium	112	107	111	107		3.51
	Beryllium	105	108	109	109		1.33
	Boron	112	109	111	110		1.14
	Cadmium	103	102	106	99.7		3.81
	Chromium	104	102	104	100		1.79
	Cobalt	99.0	98.2	98.3	96.3		0.180
	Copper	95.1	94.9	95.3	92.9		0.392
	Lead	98.3	98.2	98.4	100		0.113
	Manganese	107	105	105	104		0.286
	Molybdenum	102	102	104	101		2.52
	Nickel	96.4	97.2	93.8	97.4		0.165
	Selenium	102	103	101	101		1.88
	Silver	107	103	112	105		8.77
	Thallium	103	103	105	102		1.95
EPA 300.0 Rev. 2.1	Chloride	100	101	101		1.71	
	Sulfate	102	99.8	101		1.22	
EPA 350.1 Rev. 2.0	Ammonia-N	94.8	96.6	97.2			0.549
	Ammonia-N	93.6	96.6	97.8			1.05
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	97.4	105			4.49
	Kjeldahl Nitrogen	97.8	101	102			0.716
EPA 353.2 Rev. 2.0	NO2NO3-N	104	106	107			0.468
EPA 365.1 Rev. 2.0	Total-P	102	105	110			4.46
EPA 8270E	Aldrin	51.5	56.1	46.6			18.5
	Alpha-BHC	85.6	89.2	81.1			9.49
	Alpha-Chlordane	72.9	72.6	59.6			19.6
	Beta-BHC	102	112	101			10.9
	Beta-Cyfluthrin	62.7	64.2	84.7			27.6
	Bifenthrin	46.4	56.0	71.5			24.5
	Chlorothalonil	74.9	65.4	85.7			26.9
	Cis-Nonachlor	60.1	55.7	44.4			22.5
	Cypermethrin	72.0	81.4	74.0			9.57
	Dacthal	91.4	75.9	95.3			22.8
	DDD-p,p'	67.1	65.2	60.4			7.69
	DDE-p,p'	64.0	47.1	63.3			29.3
	DDT-p,p'	61.7	60.4	53.7			11.8
	Delta-BHC	100	106	116			9.29
	Deltamethrin	78.6	108	86.7			21.5
	Dichlobenil	73.6	31.8	41.6			26.6
	Dicofol	66.9	61.4	60.1			2.23

Quality Assurance Report

Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
			LCS	SMP	MS	
EPA 8270E	Dieldrin	67.5	54.8	65.4		17.6
	Endosulfan I	76.3	63.0	77.1		20.1
	Endosulfan II	70.2	48.1	64.4		29.0
	Endosulfan Sulfate	74.7	52.5	68.3		26.2
	Endrin	70.0	54.1	67.5		22.0
	Endrin Aldehyde	66.3	40.7	46.5		13.3
	Endrin Ketone	82.6	65.3	72.9		11.1
	Esfenvalerate	64.1	83.9	69.2		19.1
	Ethalfuralin	71.5	62.3	67.6		8.15
	Fenpropathrin	61.5	74.4	64.4		14.4
	Gamma-BHC	97.8	93.5	106		12.1
	Gamma-Chlordane	70.7	58.5	71.3		19.7
	Heptachlor	62.6	55.9	64.2		13.7
	Heptachlor Epoxide	81.3	70.4	80.1		13.0
	Hexachlorobenzene	65.4	64.4	67.1		4.06
	Kepone	198	75.4	79.8		5.63
	Lambda-Cyhalothrin	56.2	62.0	63.1		1.76
	Methoprene	48.4	45.0	55.7		21.3
	Methoxychlor	76.2	69.6	72.6		4.16
	MGK-264	86.8	75.9	95.7		23.0
	Mirex	47.5	43.6	48.9		11.5
	Oxychlordane	76.6	80.9	84.1		3.91
	PCB-1016	73.3	71.7	66.8		6.99
	PCB-1260	74.9	73.4	74.0		0.747
	Permethrin	61.7	106	66.2		46.0
	Phenothrin	47.5	80.4	53.5		40.1
	Piperonyl Butoxide	100	88.2	90.7		2.79
	Prallethrin	61.6	37.0	42.6		13.9
	Tau-Fluvalinate	51.3	86.1	58.0		39.0
	Tetramethrin	89.5	68.1	74.5		8.98
	Trans-Nonachlor	67.9	55.0	69.8		23.7
	Triclosan Methyl	66.2	51.4	66.6		25.8
	Trifluralin	66.8	59.0	67.4		13.3
EPA 8276	Chlordane	69.8	70.1	81.1		14.5
	Toxaphene	64.7	65.0	76.6		16.5
SM 2320 B-2011	Total Alkalinity	103			0.173	
SM 2540 C-2015	TDS	98.8			1.88	
SM 2540 D-2015	TSS	96.8			7.14	
SM 4500-F- C-2011	Fluoride	98.4	105	106		1.04
SM 5310 B-2014	Organic Carbon	99.2	97.3	99.7		2.40

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2484095, 2484097, 2484099
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2484095, 2484097, 2484099
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2484113
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2484113
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2484095, 2484097, 2484099
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2484095, 2484097, 2484099
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2484096, 2484098, 2484100

Reference Method Descriptions

Method	Description	Associated Samples
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2484096, 2484098, 2484100
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2484096, 2484098, 2484100
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2484096, 2484098, 2484100
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2484109
EPA 8270E	PCBs in water matrices by GC/MS/MS	2484109
EPA 8276	Chlordane and Toxaphene in water matrices by GC/MS with Negative Chemical Ionization	2484109
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2484095, 2484097, 2484099
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2484113
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2484095, 2484097, 2484099
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2484095, 2484097, 2484099
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2484095, 2484097, 2484099
SM 5310 B-2014	Nonpurgeable Organic Carbon in aqueous matrices	2484096, 2484098, 2484100

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	04/23/2024			04/23/2024 15:07	Jessica K Wilks	2484095, 2484097
	04/23/2024			04/23/2024 15:08	Jessica K Wilks	2484099
	04/23/2024			04/23/2024 14:39	Khloe J Berg	2484095
EPA 180.1 Rev. 2.0	04/23/2024			04/23/2024 14:40	Khloe J Berg	2484097
	04/23/2024			04/23/2024 15:37	Khloe J Berg	2484099
	04/23/2024	04/24/2024 12:50	George D Taylor	04/25/2024 23:03	Conrad Hartmann	2484113
EPA 200.7 Rev. 4.4	04/23/2024	04/24/2024 12:50	George D Taylor	04/26/2024 17:55	Conrad Hartmann	2484113
EPA 200.8 Rev. 5.4	04/23/2024	04/24/2024 12:50	George D Taylor	04/29/2024 17:30	McKinley C Carter	2484113
	04/23/2024	05/01/2024 13:10	George D Taylor	05/02/2024 18:49	McKinley C Carter	2484113
	04/23/2024			04/29/2024 20:27	James L Waggeberby	2484095
EPA 300.0 Rev. 2.1	04/23/2024			04/29/2024 21:58	James L Waggeberby	2484097
	04/23/2024			04/29/2024 22:13	James L Waggeberby	2484099
	04/23/2024			04/24/2024 12:14	Khloe J Berg	2484096
EPA 350.1 Rev. 2.0	04/23/2024			04/24/2024 12:15	Khloe J Berg	2484098
	04/23/2024			04/24/2024 12:58	Khloe J Berg	2484100
	04/23/2024	04/25/2024 15:47	Simonne.V. Calhoun	04/30/2024 15:42	Robyn Blevins	2484096
EPA 351.2 Rev. 2.0	04/23/2024	05/07/2024 12:12	Robyn Blevins	05/08/2024 11:42	Samantha L Bates	2484098
	04/23/2024	05/07/2024 12:12	Robyn Blevins	05/08/2024 11:46	Samantha L Bates	2484100
	04/23/2024			05/06/2024 16:20	Fadila Guebre	2484096
EPA 353.2 Rev. 2.0	04/23/2024			05/06/2024 16:22	Fadila Guebre	2484098
	04/23/2024			05/06/2024 16:23	Fadila Guebre	2484100
	04/23/2024	04/26/2024 13:02	Adam P Silver	04/29/2024 15:42	James L Waggeberby	2484096
EPA 365.1 Rev. 2.0	04/23/2024	04/26/2024 13:02	Adam P Silver	04/29/2024 15:44	James L Waggeberby	2484100
	04/23/2024	04/26/2024 13:02	Adam P Silver	04/30/2024 11:39	Elise M. Gillis	2484098
	04/23/2024	04/25/2024 08:00	Fe-Val Siddell	04/27/2024 02:29	Lipi Saha	2484109
EPA 8270E	04/23/2024	04/25/2024 08:00	Fe-Val Siddell	04/27/2024 04:04	Kenedi Mills	2484109
	04/23/2024	04/25/2024 08:00	Fe-Val Siddell	04/30/2024 20:50	Kenedi Mills	2484109
	04/23/2024	04/25/2024 08:00	Fe-Val Siddell	04/27/2024 10:53	Arthur Maknenko	2484109
EPA 8276	04/23/2024			04/29/2024 21:49	Adam P Silver	2484095
SM 2320 B-2011	04/23/2024			04/29/2024 21:59	Adam P Silver	2484097
	04/23/2024			04/29/2024 22:10	Adam P Silver	2484099
	04/23/2024			04/25/2024 23:03	Conrad Hartmann	2484113
SM 2340 B-2011	04/23/2024			04/26/2024 16:04	Yijie Li	2484095, 2484097, 2484099
SM 2540 C-2015	04/23/2024			04/26/2024 16:04	Yijie Li	2484095, 2484097, 2484099
SM 2540 D-2015	04/23/2024			05/07/2024 21:32	Dale L. Simmons	2484095
	04/23/2024			05/07/2024 21:38	Dale L. Simmons	2484097
	04/23/2024			05/07/2024 21:43	Dale L. Simmons	2484099
SM 4500-F- C-2011	04/23/2024			04/30/2024 02:59	Jessica K Wilks	2484096
	04/23/2024			04/30/2024 03:13	Jessica K Wilks	2484098
	04/23/2024			04/30/2024 03:28	Jessica K Wilks	2484100