

Chemical Analysis Report

NE-DIST-2021-07-15-01

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

Event Description: **Miramar Biology**
Request ID: **RQ-2021-07-12-57**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 12-AUG-2021 09:10



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: MIRAMAR CR @ GADSEN RD

Collection Date/Time: 07/14/2021 09:05

Field ID: 20030825

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262394	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P401043	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P401361	
		Sulfate	50		mg SO4/L	P401364	
		Color (true)	34	A	PCU	P401040	
	SM 2320 B-2011	Total Alkalinity	89	A	mg CaCO3/L	P401144	
	SM 2540 C-2011	TDS	238		mg/L	P401423	
	SM 2540 D-2011	TSS	4	I	mg/L	P401229	
	SM 4500 F-C-2011	Fluoride	0.14		mg F/L	P401147	
2262395	EPA 350.1 Rev. 2.0	Ammonia-N	0.17		mg N/L	P401594	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.69		mg N/L	P402132	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.43		mg N/L	P401151	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P401397	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P401489	
2262396	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.021		mg P/L	P401030	
2262400	EPA 200.7 Rev. 4.4	Barium	40.7		ug/L	P401018	
		Calcium	44.0		mg/L	P401018	
		Iron	1.24E+03		ug/L	P401018	
		Magnesium	10.0		mg/L	P401018	
		Manganese	76.8		ug/L	P401018	
		Potassium	2.6		mg/L	P401018	
		Sodium	19.1		mg/L	P401018	
	EPA 200.8 Rev. 5.4	Zinc	8.9	I	ug/L	P401018	
		Aluminum	40		ug/L	P401411	
		Antimony	0.21		ug/L	P401411	
		Arsenic	0.84		ug/L	P401411	
		Beryllium	0.070		ug/L	P401411	
		Boron**	54.8		ug/L	P401411	
		Cadmium	0.020	U	ug/L	P401411	
		Chromium	0.40	U	ug/L	P401411	
		Copper	3.15		ug/L	P401411	
		Lead	0.67		ug/L	P401411	
		Nickel	1.0	I	ug/L	P401411	
		Selenium	0.20	U	ug/L	P401411	
		Silver	0.010	U	ug/L	P401634	
		Thallium	0.10	U	ug/L	P401411	
	SM 2340B	Hardness	151		mg/L	P401018	
2262401	EPA 8270E	Aldrin	0.73	U	ng/L	P401184	
		Alpha-BHC	0.11	U	ng/L	P401184	
		Alpha-Chlordane	0.61	I	ng/L	P401184	
		Beta-BHC	0.84		ng/L	P401184	
		Beta-Cyfluthrin**	1.4	U	ng/L	P401184	
		Bifenthrin**	1.8	I	ng/L	P401184	
		Carbophenothion	0.39	U	ng/L	P401184	

Field ID: 20030825

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2262401	EPA 8270E	Chlorothalonil	0.56	U	ng/L	P401184	
		Cis-Nonachlor**	0.22	U	ng/L	P401184	
		Cypermethrin	1.7	U	ng/L	P401184	
		Dacthal**	0.17	U	ng/L	P401184	
		DDD-p,p'	0.31	I	ng/L	P401184	
		DDE-p,p'	0.22	U	ng/L	P401184	
		DDT-p,p'	0.28	U	ng/L	P401184	
		Delta-BHC	0.76	I	ng/L	P401184	
		Deltamethrin**	1.4	UJ	ng/L	P401184	RPD
		Dichlobenil**	0.11	U	ng/L	P401184	
		Dicofol	1.4	U	ng/L	P401184	
		Dieldrin	5.1		ng/L	P401184	
		Endosulfan I	0.45	U	ng/L	P401184	
		Endosulfan II	0.45	U	ng/L	P401184	
		Endosulfan Sulfate	0.34	U	ng/L	P401184	
		Endrin	0.45	U	ng/L	P401184	
		Endrin Aldehyde	0.84	U	ng/L	P401184	
		Endrin Ketone	0.45	U	ng/L	P401184	
		Esfenvalerate**	0.84	U	ng/L	P401184	
		Ethalfuralin**	0.17	U	ng/L	P401184	
		Fenpropathrin**	0.28	U	ng/L	P401184	
		Gamma-BHC	0.14	U	ng/L	P401184	
		Gamma-Chlordane	0.68	I	ng/L	P401184	
		Heptachlor	0.22	U	ng/L	P401184	
		Heptachlor Epoxide	2.8		ng/L	P401184	
		Hexachlorobenzene	1.1	U	ng/L	P401184	
		Kepone**	5.6	U	ng/L	P401184	
		Lambda-Cyhalothrin**	0.84	U	ng/L	P401184	
		Methoxychlor	0.34	U	ng/L	P401184	
		MGK-264**	0.22	U	ng/L	P401184	
		Mirex	0.34	U	ng/L	P401184	
		Permethrin	1.8	U	ng/L	P401184	
		Phenothrin**	1.0	U	ng/L	P401184	
		Piperonyl Butoxide**	2.0	J	ng/L	P401184	RPD
		Prallethrin**	2.2	U	ng/L	P401184	
		Tau-Fluvalinate**	0.28	U	ng/L	P401184	
		Tetramethrin**	0.84	U	ng/L	P401184	
		Trans-Nonachlor**	0.32	I	ng/L	P401184	
		Triclosan Methyl**	0.17	U	ng/L	P401184	
		Trifluralin	0.22	U	ng/L	P401184	

Ref. Method and Comment:

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

EPA 8270E: MS accuracy for piperonyl butoxide not assessed due to high content of this parameter in the sample spiked. Refer to the Lab Analysis Report for an explanation of QC Codes.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P401043

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401018

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401411

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401634

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401361

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401364

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401594

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402132

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401151

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401030

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

Reference Method: EPA 8270E
Batch ID: P401184

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	0.35	U	ng/L
Carbophenothion	0.35	U	ng/L
Chlorothalonil	0.50	U	ng/L
Chlorothalonil	0.50	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: P401184

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	0.10	U	ng/L
Dichlobenil	0.10	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
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P401184

Component	Result	Code	Units
Mirex	0.30	U	ng/L
Mirex	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: SM 2120 B-2011

Batch ID: P401040

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P401144

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

Reference Method: SM 2540 C-2011

Batch ID: P401423

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P401229

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P401147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-2011
Batch ID: P401489

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401018

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	107		P	85 - 115
Iron	106		P	85 - 115
Magnesium	109		P	85 - 115
Manganese	102		P	85 - 115
Potassium	101		P	85 - 115
Sodium	106		P	85 - 115
Zinc	99.6		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401411

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	105		P	85 - 115
Antimony	108		P	85 - 115
Arsenic	102		P	85 - 115
Beryllium	106		P	85 - 115
Boron	105		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	101		P	85 - 115
Copper	99.0		P	85 - 115
Lead	102		P	85 - 115
Nickel	102		P	85 - 115
Selenium	102		P	85 - 115
Thallium	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401634

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	113		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401361

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P401594

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P402132

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401151

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401397

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401030

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.5		P	90 - 110

Reference Method: EPA 8270E

Batch ID: P401184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	50.3	53.0	P/P	20 - 150
Alpha-BHC	90.1	91.3	P/P	50 - 150
Alpha-Chlordane	78.3	81.0	P/P	50 - 150
Beta-BHC	109	105	P/P	50 - 150
Beta-Cyfluthrin	129	106	P/P	50 - 150
Bifenthrin	83.9	68.0	P/P	40 - 150
Carbophenothion	66.7	59.5	P/P	20 - 150
Chlorothalonil	116	105	P/P	20 - 150
Cis-Nonachlor	69.6	62.5	P/P	50 - 150
Cypermethrin	115	96.6	P/P	50 - 150
Dacthal	100	97.5	P/P	50 - 150
DDD-p,p'	75.5	70.5	P/P	50 - 150
DDE-p,p'	80.2	79.0	P/P	50 - 150
DDT-p,p'	80.0	77.7	P/P	50 - 150
Delta-BHC	125	120	P/P	50 - 150
Deltamethrin	115	86.5	P/P	50 - 150
Dichlobenil	81.1	83.7	P/P	40 - 150
Dicofol	84.3	80.4	P/P	50 - 150
Dieldrin	87.3	83.0	P/P	50 - 150
Endosulfan I	83.1	79.4	P/P	50 - 150
Endosulfan II	92.1	73.9	P/P	50 - 150
Endosulfan Sulfate	89.3	83.5	P/P	50 - 150
Endrin	71.3	66.0	P/P	50 - 150
Endrin Aldehyde	65.1	62.6	P/P	50 - 150
Endrin Ketone	82.3	77.4	P/P	50 - 150
Esfenvalerate	128	105	P/P	50 - 180
Ethalfuralin	73.1	71.7	P/P	50 - 150
Fenpropathrin	86.4	76.4	P/P	50 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E

Batch ID: P401184

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Gamma-BHC	98.4	95.5	P/P	50 - 150
Gamma-Chlordane	74.0	72.7	P/P	50 - 150
Heptachlor	66.3	66.2	P/P	50 - 150
Heptachlor Epoxide	82.3	79.1	P/P	50 - 150
Hexachlorobenzene	65.8	68.2	P/P	50 - 150
Kepone	115	104	P/P	30 - 180
Lambda-Cyhalothrin	140	108	P/P	50 - 200
Methoxychlor	98.7	95.9	P/P	50 - 150
MGK-264	94.2	91.1	P/P	30 - 150
Mirex	51.8	50.0	P/P	50 - 180
Permethrin	105	93.4	P/P	50 - 150
Phenothrin	54.1	43.5	P/P	20 - 150
Piperonyl Butoxide	89.9	80.9	P/P	50 - 150
Prallethrin	74.0	77.4	P/P	30 - 150
Tau-Fluvalinate	85.6	74.5	P/P	40 - 150
Tetramethrin	83.0	81.1	P/P	30 - 150
Trans-Nonachlor	75.9	72.8	P/P	50 - 150
Triclosan Methyl	92.6	90.3	P/P	50 - 150
Trifluralin	72.4	69.7	P/P	50 - 150

Reference Method: SM 2120 B-2011

Batch ID: P401040

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011

Batch ID: P401144

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

Reference Method: SM 4500 F-C-2011

Batch ID: P401147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	93 - 104

Reference Method: SM 5310 B-2011

Batch ID: P401489

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262059	Barium	106		P	80 - 120
2262059	Calcium	114		P	80 - 120
2262059	Iron	111		P	80 - 120
2262059	Magnesium	115		P	80 - 120
2262059	Manganese	105		P	80 - 120
2262059	Potassium	103		P	80 - 120
2262059	Sodium	108		P	80 - 120
2262059	Zinc	108		P	80 - 120
2262373	Barium	104	108	P/P	80 - 120
2262373	Calcium	109		P	80 - 120
2262373	Iron	108	112	P/P	80 - 120
2262373	Magnesium	107	114	P/P	80 - 120
2262373	Manganese	103	107	P/P	80 - 120
2262373	Potassium	98.9	104	P/P	80 - 120
2262373	Sodium	104		P	80 - 120
2262373	Zinc	107	111	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401411

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262058	Aluminum	106		P	80 - 120
2262058	Antimony	113		P	80 - 120
2262058	Arsenic	98.8		P	80 - 120
2262058	Beryllium	107		P	80 - 120
2262058	Boron	109		P	80 - 120
2262058	Cadmium	104		P	80 - 120
2262058	Chromium	102		P	80 - 120
2262058	Copper	95.6		P	80 - 120
2262058	Lead	103		P	80 - 120
2262058	Nickel	96.2		P	80 - 120
2262058	Selenium	101		P	80 - 120
2262058	Thallium	104		P	80 - 120
2262294	Aluminum	102	103	P/P	80 - 120
2262294	Antimony	107	108	P/P	80 - 120
2262294	Arsenic	100	99.4	P/P	80 - 120
2262294	Beryllium	104	106	P/P	80 - 120
2262294	Boron	104	107	P/P	80 - 120
2262294	Cadmium	102	103	P/P	80 - 120
2262294	Chromium	100	101	P/P	80 - 120
2262294	Copper	97.1	94.4	P/P	80 - 120
2262294	Lead	98.0	98.0	P/P	80 - 120
2262294	Nickel	93.0	91.5	P/P	80 - 120
2262294	Selenium	99.5	99.6	P/P	80 - 120
2262294	Thallium	105	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262058	Silver	111	107	P/P	80 - 120
2262400	Silver	111		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401361

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262274	Chloride	98.8		P	90 - 110
2262350	Chloride	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401364

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262274	Sulfate	98.9		P	90 - 110
2262350	Sulfate	98.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401594

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262354	Ammonia-N	99.0	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402132

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262303	Kjeldahl Nitrogen	110	107	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401151

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262417	NO2NO3-N	101	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262351	Total-P	102	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401030

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262304	O-Phosphate-P	97.8	98.2	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P401184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262401	Aldrin	45.1	44.3	P/P	20 - 170
2262401	Alpha-BHC	82.9	86.3	P/P	50 - 170
2262401	Alpha-Chlordane	70.8	67.7	P/P	50 - 170
2262401	Beta-BHC	104	107	P/P	50 - 170
2262401	Beta-Cyfluthrin	165	159	P/P	50 - 170
2262401	Bifenthrin	55.9	45.1	P/P	40 - 170
2262401	Carbophenothion	73.1	67.1	P/P	20 - 170
2262401	Chlorothalonil	156	104	P/P	20 - 170

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E

Batch ID: P401184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262401	Cis-Nonachlor	84.0	73.4	P/P	50 - 170
2262401	Cypermethrin	151	140	P/P	50 - 170
2262401	Dacthal	94.6	87.6	P/P	50 - 170
2262401	DDD-p,p'	79.6	74.4	P/P	50 - 170
2262401	DDE-p,p'	69.7	69.7	P/P	50 - 170
2262401	DDT-p,p'	70.6	69.5	P/P	50 - 170
2262401	Delta-BHC	125	120	P/P	50 - 170
2262401	Deltamethrin	160	83.7	P/P	50 - 170
2262401	Dichlobenil	59.0	56.5	P/P	40 - 170
2262401	Dicofol	84.7	81.0	P/P	50 - 170
2262401	Dieldrin	75.6	72.2	P/P	50 - 170
2262401	Endosulfan I	76.9	74.5	P/P	50 - 170
2262401	Endosulfan II	91.0	87.0	P/P	50 - 170
2262401	Endosulfan Sulfate	91.2	80.2	P/P	50 - 170
2262401	Endrin	77.4	71.9	P/P	50 - 170
2262401	Endrin Aldehyde	57.4	57.5	P/P	50 - 170
2262401	Endrin Ketone	98.0	83.0	P/P	50 - 170
2262401	Esfenvalerate	175	169	P/P	50 - 180
2262401	Ethalfuralin	62.9	60.7	P/P	50 - 170
2262401	Fenpropathrin	96.5	92.0	P/P	50 - 170
2262401	Gamma-BHC	104	102	P/P	50 - 170
2262401	Gamma-Chlordane	64.1	60.1	P/P	50 - 170
2262401	Heptachlor	61.2	57.3	P/P	50 - 170
2262401	Heptachlor Epoxide	74.3	66.2	P/P	50 - 170
2262401	Hexachlorobenzene	54.3	54.5	P/P	50 - 170
2262401	Kepone	62.3	57.5	P/P	30 - 180
2262401	Lambda-Cyhalothrin	193	176	P/P	50 - 200
2262401	Methoxychlor	104	87.6	P/P	50 - 170
2262401	MGK-264	107	95.5	P/P	30 - 170
2262401	Mirex	59.8	59.0	P/P	50 - 180
2262401	Permethrin	161	152	P/P	50 - 170
2262401	Phenothrin	95.8	101	P/P	20 - 170
2262401	Prallethrin	88.8	88.6	P/P	30 - 170
2262401	Tau-Fluvalinate	132	123	P/P	40 - 170
2262401	Tetramethrin	90.6	116	P/P	30 - 170
2262401	Trans-Nonachlor	66.2	63.9	P/P	50 - 170
2262401	Triclosan Methyl	81.8	80.0	P/P	50 - 170
2262401	Trifluralin	61.2	58.5	P/P	50 - 170

Reference Method: SM 4500 F-C-2011

Batch ID: P401147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262394	Fluoride	101	100	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P401489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2262587	Organic Carbon	95.4	97.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P401043

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262350	Turbidity	3.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401018

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262373	Barium	3.67	Spike	P	0 - 20
2262373	Calcium	3.46	Spike	P	0 - 20
2262373	Iron	3.43	Spike	P	0 - 20
2262373	Magnesium	3.82	Spike	P	0 - 20
2262373	Manganese	3.43	Spike	P	0 - 20
2262373	Potassium	2.71	Spike	P	0 - 20
2262373	Sodium	2.39	Spike	P	0 - 20
2262373	Zinc	3.49	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401411

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262294	Aluminum	1.13	Spike	P	0 - 20
2262294	Antimony	0.763	Spike	P	0 - 20
2262294	Arsenic	1.00	Spike	P	0 - 20
2262294	Beryllium	1.60	Spike	P	0 - 20
2262294	Boron	2.01	Spike	P	0 - 20
2262294	Cadmium	1.16	Spike	P	0 - 20
2262294	Chromium	0.783	Spike	P	0 - 20
2262294	Copper	2.68	Spike	P	0 - 20
2262294	Lead	0.00119	Spike	P	0 - 20
2262294	Nickel	1.45	Spike	P	0 - 20
2262294	Selenium	0.119	Spike	P	0 - 20
2262294	Thallium	0.280	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401634

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262058	Silver	4.16	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P401361

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262350	Chloride	0.304	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P401364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262350	Sulfate	0.407	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P401594

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262354	Ammonia-N	2.20	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402132

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262303	Kjeldahl Nitrogen	2.58	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401151

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262417	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262351	Total-P	2.68	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262304	O-Phosphate-P	0.322	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P401184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262401	Aldrin	1.76	Spike	P	0 - 30
2262401	Alpha-BHC	3.85	Spike	P	0 - 30
2262401	Alpha-Chlordane	3.56	Spike	P	0 - 30
2262401	Beta-BHC	1.89	Spike	P	0 - 30
2262401	Beta-Cyfluthrin	3.66	Spike	P	0 - 30
2262401	Bifenthrin	11.3	Spike	P	0 - 30
2262401	Carbophenothion	8.48	Spike	P	0 - 30
2262401	Chlorothalonil	39.4	Spike	P	0 - 50
2262401	Cis-Nonachlor	13.5	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
Batch ID: P401184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262401	Cypermethrin	7.38	Spike	P	0 - 30
2262401	Dacthal	7.65	Spike	P	0 - 30
2262401	DDD-p,p'	5.99	Spike	P	0 - 30
2262401	DDE-p,p'	0.0493	Spike	P	0 - 30
2262401	DDT-p,p'	1.63	Spike	P	0 - 30
2262401	Delta-BHC	4.03	Spike	P	0 - 30
2262401	Deltamethrin	62.6	Spike	F	0 - 30
2262401	Dichlobenil	4.37	Spike	P	0 - 30
2262401	Dicofol	4.47	Spike	P	0 - 30
2262401	Dieldrin	3.11	Spike	P	0 - 30
2262401	Endosulfan I	3.22	Spike	P	0 - 30
2262401	Endosulfan II	4.51	Spike	P	0 - 30
2262401	Endosulfan Sulfate	12.9	Spike	P	0 - 30
2262401	Endrin	7.27	Spike	P	0 - 30
2262401	Endrin Aldehyde	0.107	Spike	P	0 - 30
2262401	Endrin Ketone	16.6	Spike	P	0 - 30
2262401	Esfenvalerate	3.54	Spike	P	0 - 30
2262401	Ethalfuralin	3.62	Spike	P	0 - 30
2262401	Fenpropathrin	4.72	Spike	P	0 - 30
2262401	Gamma-BHC	2.07	Spike	P	0 - 30
2262401	Gamma-Chlordane	4.81	Spike	P	0 - 30
2262401	Heptachlor	6.54	Spike	P	0 - 30
2262401	Heptachlor Epoxide	5.56	Spike	P	0 - 30
2262401	Hexachlorobenzene	0.215	Spike	P	0 - 30
2262401	Kepone	7.96	Spike	P	0 - 30
2262401	Lambda-Cyhalothrin	9.12	Spike	P	0 - 30
2262401	Methoxychlor	17.1	Spike	P	0 - 30
2262401	MGK-264	11.7	Spike	P	0 - 30
2262401	Mirex	1.35	Spike	P	0 - 30
2262401	Permethrin	5.46	Spike	P	0 - 30
2262401	Phenothrin	5.17	Spike	P	0 - 30
2262401	Piperonyl Butoxide	85.9	Spike	F	0 - 30
2262401	Prallethrin	0.139	Spike	P	0 - 30
2262401	Tau-Fluvalinate	7.02	Spike	P	0 - 30
2262401	Tetramethrin	24.9	Spike	P	0 - 30
2262401	Trans-Nonachlor	3.04	Spike	P	0 - 30
2262401	Triclosan Methyl	2.26	Spike	P	0 - 30
2262401	Trifluralin	4.43	Spike	P	0 - 30
LFB	Aldrin	5.27	LCS	P	0 - 30
LFB	Alpha-BHC	1.38	LCS	P	0 - 30
LFB	Alpha-Chlordane	3.41	LCS	P	0 - 30
LFB	Beta-BHC	3.63	LCS	P	0 - 30
LFB	Beta-Cyfluthrin	19.2	LCS	P	0 - 30
LFB	Bifenthrin	21.0	LCS	P	0 - 30
LFB	Carbophenothion	11.5	LCS	P	0 - 30
LFB	Chlorothalonil	9.87	LCS	P	0 - 50
LFB	Cis-Nonachlor	10.6	LCS	P	0 - 30
LFB	Cypermethrin	17.7	LCS	P	0 - 30
LFB	Dacthal	2.48	LCS	P	0 - 30
LFB	DDD-p,p'	6.82	LCS	P	0 - 30
LFB	DDE-p,p'	1.58	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E

Batch ID: P401184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	DDT-p,p'	3.02	LCS	P	0 - 30
LFB	Delta-BHC	4.36	LCS	P	0 - 30
LFB	Deltamethrin	28.4	LCS	P	0 - 30
LFB	Dichlobenil	3.14	LCS	P	0 - 30
LFB	Dicofol	4.71	LCS	P	0 - 30
LFB	Dieldrin	5.04	LCS	P	0 - 30
LFB	Endosulfan I	4.45	LCS	P	0 - 30
LFB	Endosulfan II	22.0	LCS	P	0 - 30
LFB	Endosulfan Sulfate	6.71	LCS	P	0 - 30
LFB	Endrin	7.73	LCS	P	0 - 30
LFB	Endrin Aldehyde	3.94	LCS	P	0 - 30
LFB	Endrin Ketone	6.08	LCS	P	0 - 30
LFB	Esfenvalerate	20.0	LCS	P	0 - 30
LFB	Ethalfuralin	1.94	LCS	P	0 - 30
LFB	Fenpropathrin	12.2	LCS	P	0 - 30
LFB	Gamma-BHC	3.00	LCS	P	0 - 30
LFB	Gamma-Chlordane	1.85	LCS	P	0 - 30
LFB	Heptachlor	0.0873	LCS	P	0 - 30
LFB	Heptachlor Epoxide	3.89	LCS	P	0 - 30
LFB	Hexachlorobenzene	3.56	LCS	P	0 - 30
LFB	Kepone	10.4	LCS	P	0 - 30
LFB	Lambda-Cyhalothrin	25.5	LCS	P	0 - 30
LFB	Methoxychlor	2.90	LCS	P	0 - 30
LFB	MGK-264	3.44	LCS	P	0 - 30
LFB	Mirex	3.51	LCS	P	0 - 30
LFB	Permethrin	12.0	LCS	P	0 - 30
LFB	Phenothrin	21.7	LCS	P	0 - 30
LFB	Piperonyl Butoxide	10.5	LCS	P	0 - 30
LFB	Prallethrin	4.38	LCS	P	0 - 30
LFB	Tau-Fluvalinate	13.8	LCS	P	0 - 30
LFB	Tetramethrin	2.32	LCS	P	0 - 30
LFB	Trans-Nonachlor	4.14	LCS	P	0 - 30
LFB	Triclosan Methyl	2.57	LCS	P	0 - 30
LFB	Trifluralin	3.83	LCS	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P401040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262394	Color (true)	5.16	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P401144

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262394	Total Alkalinity	0.291	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P401423

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262221	TDS	5.14	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P401147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262394	Fluoride	0.457	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
Batch ID: P401489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2262587	Organic Carbon	1.42	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2262401
Field Sample ID: 20030825

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	78.4	P	35 - 120
EPA 8270E	Tetrachloro-m-xylene	53.6	P	30 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106644

Included Lab Sample IDs: 2262396

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	100	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A106646

Included Lab Sample IDs: 2262394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A106647

Included Lab Sample IDs: 2262394

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

Reference Method: SM 2320 B-2011

Run ID: A106679

Included Lab Sample IDs: 2262394

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.0	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106679

Included Lab Sample IDs: 2262394

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106682

Included Lab Sample IDs: 2262395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106762

Included Lab Sample IDs: 2262394

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

Reference Method: EPA 8270E

Run ID: A106785

Included Lab Sample IDs: 2262401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	95.7		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8270E
 Run ID: A106785
 Included Lab Sample IDs: 2262401

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Alpha-BHC	97.0		P	80 - 120
Alpha-Chlordane	103		P	80 - 120
Beta-BHC	96.4		P	80 - 120
Beta-Cyfluthrin	103		P	80 - 120
Bifenthrin	98.4		P	80 - 120
Carbophenothion	95.9		P	80 - 120
Chlorothalonil	105		P	80 - 120
Cis-Nonachlor	94.4		P	80 - 120
Cypermethrin	97.4		P	80 - 120
Dacthal	97.5		P	80 - 120
DDD-p,p'	95.8		P	80 - 120
DDE-p,p'	96.5		P	80 - 120
DDT-p,p'	95.6		P	80 - 120
Delta-BHC	107		P	80 - 120
Deltamethrin	102		P	80 - 120
Dichlobenil	100		P	80 - 120
Dicofol	100		P	80 - 120
Dieldrin	102		P	80 - 120
Endosulfan I	97.2		P	80 - 120
Endosulfan II	93.3		P	80 - 120
Endosulfan Sulfate	90.6		P	80 - 120
Endrin	92.5		P	80 - 120
Endrin Aldehyde	88.1		P	80 - 120
Endrin Ketone	89.2		P	80 - 120
Esfenvalerate	102		P	80 - 120
Ethalfuralin	98.6		P	80 - 120
Fenpropathrin	97.5		P	80 - 120
Gamma-BHC	98.0		P	80 - 120
Gamma-Chlordane	98.0		P	80 - 120
Heptachlor	102		P	80 - 120
Heptachlor Epoxide	97.7		P	80 - 120
Hexachlorobenzene	102		P	80 - 120
Kepone	80.8		P	80 - 120
Lambda-Cyhalothrin	105		P	80 - 120
Methoxychlor	105		P	80 - 120
MGK-264	100		P	80 - 120
Mirex	92.1		P	80 - 120
Permethrin	97.0		P	80 - 120
Phenothrin	94.3		P	80 - 120
Piperonyl Butoxide	94.8		P	80 - 120
Prallethrin	91.3		P	80 - 120
Tau-Fluvalinate	98.1		P	80 - 120
Tetramethrin	103		P	80 - 120
Trans-Nonachlor	98.7		P	80 - 120
Triclosan Methyl	97.5		P	80 - 120
Trifluralin	93.9		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106786

Included Lab Sample IDs: 2262395

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

Reference Method: SM 5310 B-2011

Run ID: A106803

Included Lab Sample IDs: 2262395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.1	97.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106806

Included Lab Sample IDs: 2262400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	102	102	P/P	90 - 110
Arsenic	98.7	98.7	P/P	90 - 110
Beryllium	100	100	P/P	90 - 110
Boron	101	103	P/P	90 - 110
Cadmium	104	103	P/P	90 - 110
Chromium	102	99.7	P/P	90 - 110
Copper	94.8	93.9	P/P	90 - 110
Lead	99.9	99.6	P/P	90 - 110
Nickel	94.8	94.4	P/P	90 - 110
Selenium	102	102	P/P	90 - 110
Thallium	98.4	97.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106829

Included Lab Sample IDs: 2262400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	108	109	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A106839

Included Lab Sample IDs: 2262400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	102	P/P	90 - 110
Calcium	103	103	P/P	90 - 110
Iron	101	100	P/P	90 - 110
Magnesium	101	100	P/P	90 - 110
Manganese	103	102	P/P	90 - 110
Potassium	98.6	98.9	P/P	90 - 110
Sodium	99.8	99.6	P/P	90 - 110
Zinc	106	105	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106850

Included Lab Sample IDs: 2262395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.3	98.0	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A106941

Included Lab Sample IDs: 2262400

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	98.8	99.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107147

Included Lab Sample IDs: 2262395

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.5	96.9	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		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.67	
EPA 200.7 Rev. 4.4	Barium	102		106	104	108		3.67
	Calcium	107		114	109			3.46
	Iron	106		111	108	112		3.43
	Magnesium	109		115	107	114		3.82
	Manganese	102		105	103	107		3.43
	Potassium	101		103	98.9	104		2.71
	Sodium	106		108	104			2.39
	Zinc	99.6		108	107	111		3.49
EPA 200.8 Rev. 5.4	Aluminum	105		102	103	106		1.13
	Antimony	108		107	108	113		0.763
	Arsenic	102		98.8	100	99.4		1.00
	Beryllium	106		104	106	107		1.60
	Boron	105		104	107	109		2.01
	Cadmium	101		102	103	104		1.16
	Chromium	101		100	101	102		0.783
	Copper	99.0		97.1	94.4	95.6		2.68
	Lead	102		98.0	98.0	103		0.0011
	Nickel	102		93.0	91.5	96.2		1.45
	Selenium	102		99.5	99.6	101		0.119
	Silver	113		111	107	111		4.16
	Thallium	103		105	105	104		0.280
EPA 300.0 Rev. 2.1	Chloride	100		98.1	98.8		0.304	
	Sulfate	99.9		98.9	98.9		0.407	
EPA 350.1 Rev. 2.0	Ammonia-N	101		99.0	96.0			2.20
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105		110	107			2.58
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102		101	101			0.0
EPA 365.1 Rev. 2.0	Total-P	105		102	106			2.68
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.5		97.8	98.2			0.322
EPA 8270E	Aldrin	50.3	53.0	45.1	44.3	5.27		1.76
	Alpha-BHC	90.1	91.3	82.9	86.3	1.38		3.85
	Alpha-Chlordane	78.3	81.0	70.8	67.7	3.41		3.56
	Beta-BHC	109	105	104	107	3.63		1.89
	Beta-Cyfluthrin	129	106	165	159	19.2		3.66
	Bifenthrin	83.9	68.0	55.9	45.1	21.0		11.3
	Carbophenothion	66.7	59.5	73.1	67.1	11.5		8.48
	Chlorothalonil	116	105	156	104	9.87		39.4
	Cis-Nonachlor	69.6	62.5	84.0	73.4	10.6		13.5
	Cypermethrin	115	96.6	151	140	17.7		7.38
	Dacthal	100	97.5	94.6	87.6	2.48		7.65
	DDD-p,p'	75.5	70.5	79.6	74.4	6.82		5.99
	DDE-p,p'	80.2	79.0	69.7	69.7	1.58		0.0493
	DDT-p,p'	80.0	77.7	70.6	69.5	3.02		1.63
	Delta-BHC	125	120	125	120	4.36		4.03
	Deltamethrin	115	86.5	160	83.7	28.4		62.6
	Dichlobenil	81.1	83.7	59.0	56.5	3.14		4.37
	Dicofol	84.3	80.4	84.7	81.0	4.71		4.47
	Dieldrin	87.3	83.0	75.6	72.2	5.04		3.11
	Endosulfan I	83.1	79.4	76.9	74.5	4.45		3.22
	Endosulfan II	92.1	73.9	91.0	87.0	22.0		4.51
	Endosulfan Sulfate	89.3	83.5	91.2	80.2	6.71		12.9
	Endrin	71.3	66.0	77.4	71.9	7.73		7.27
	Endrin Aldehyde	65.1	62.6	57.4	57.5	3.94		0.107
	Endrin Ketone	82.3	77.4	98.0	83.0	6.08		16.6

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8270E	Esfenvalerate	128	105	175	169	20.0	3.54
	Ethalfuralin	73.1	71.7	62.9	60.7	1.94	3.62
	Fenpropathrin	86.4	76.4	96.5	92.0	12.2	4.72
	Gamma-BHC	98.4	95.5	104	102	3.00	2.07
	Gamma-Chlordane	74.0	72.7	64.1	60.1	1.85	4.81
	Heptachlor	66.3	66.2	61.2	57.3	0.0873	6.54
	Heptachlor Epoxide	82.3	79.1	74.3	66.2	3.89	5.56
	Hexachlorobenzene	65.8	68.2	54.3	54.5	3.56	0.215
	Kepone	115	104	62.3	57.5	10.4	7.96
	Lambda-Cyhalothrin	140	108	193	176	25.5	9.12
	Methoxychlor	98.7	95.9	104	87.6	2.90	17.1
	MGK-264	94.2	91.1	107	95.5	3.44	11.7
	Mirex	51.8	50.0	59.8	59.0	3.51	1.35
	Permethrin	105	93.4	161	152	12.0	5.46
	Phenothrin	54.1	43.5	95.8	101	21.7	5.17
	Piperonyl Butoxide	89.9	80.9			10.5	85.9
	Prallethrin	74.0	77.4	88.8	88.6	4.38	0.139
	Tau-Fluvalinate	85.6	74.5	132	123	13.8	7.02
	Tetramethrin	83.0	81.1	90.6	116	2.32	24.9
	Trans-Nonachlor	75.9	72.8	66.2	63.9	4.14	3.04
	Triclosan Methyl	92.6	90.3	81.8	80.0	2.57	2.26
	Trifluralin	72.4	69.7	61.2	58.5	3.83	4.43
SM 2120 B-2011	Color (true)	101					5.16
SM 2320 B-2011	Total Alkalinity	101					0.291
SM 2540 C-2011	TDS						5.14
SM 4500 F-C-2011	Fluoride	99.5		101	100		0.457
SM 5310 B-2011	Organic Carbon	95.8		95.4	97.4		1.42

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2262394
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2262400
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2262400
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2262394
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2262394
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2262395
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2262395
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2262395
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2262395
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2262396
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2262401
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2262394
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2262394
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2262400
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2262394
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2262394
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2262394
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2262395

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	07/15/2021			07/15/2021 15:38	Sarah A Nixon	2262394
EPA 200.7 Rev. 4.4	07/15/2021	07/15/2021 14:55	Elliott D. Healy	07/26/2021 16:30	Josef B Mick	2262400
EPA 200.8 Rev. 5.4	07/15/2021	07/22/2021 15:25	Elliott D. Healy	07/23/2021 21:31	Alexander Thompson	2262400
	07/15/2021	07/22/2021 15:25	Elliott D. Healy	07/26/2021 15:56	Alexander Thompson	2262400
	07/15/2021	07/28/2021 12:45	Elliott D. Healy	07/29/2021 19:16	McKinley C Carter	2262400
EPA 300.0 Rev. 2.1	07/15/2021			07/21/2021 04:29	Lipi Saha	2262394
EPA 350.1 Rev. 2.0	07/15/2021			07/27/2021 12:20	Roberta Tatti	2262395
EPA 351.2 Rev. 2.0	07/15/2021	08/06/2021 13:37	Benjamin T. Nordmann	08/10/2021 12:48	Virginia P. Brown	2262395
EPA 353.2 Rev. 2.0	07/15/2021			07/19/2021 10:08	Beverly Y. Sanders	2262395
EPA 365.1 Rev. 2.0	07/15/2021	07/22/2021 12:02	Shengyu Ding	07/23/2021 08:51	Shengyu Ding	2262395
EPA 365.1 Rev. 2.0 dissolved	07/15/2021			07/15/2021 15:25	Ping Hua	2262396
EPA 8270E	07/15/2021	07/19/2021 11:00	Fe-Val Siddell	07/22/2021 20:21	Arthur Maknenko	2262401
SM 2120 B-2011	07/15/2021			07/15/2021 16:26	Sarah A Nixon	2262394
SM 2320 B-2011	07/15/2021			07/17/2021 04:36	Dale L. Simmons	2262394
SM 2340B	07/15/2021			07/26/2021 16:30	Josef B Mick	2262400
SM 2540 C-2011	07/15/2021			07/16/2021 14:42	Yijie Li	2262394
SM 2540 D-2011	07/15/2021			07/16/2021 14:42	Yijie Li	2262394
SM 4500 F-C-2011	07/15/2021			07/17/2021 04:23	Dale L. Simmons	2262394
SM 5310 B-2011	07/15/2021			07/22/2021 13:07	Madeline Gruver	2262395