

Chemical Analysis Report

NW-DIST-2021-10-13-01

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

Event Description: **Pensacola/ North Esc County Run**

Request ID: **RQ-2021-10-04-62**

Customer: **NW-DIST**

Project ID: **SMP**

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160 Government Center
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Date Certified: 03-NOV-2021 09:38



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: 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: McDavid Creek 100m Upstream SR99

Collection Date/Time: 10/12/2021 11:10

Field ID: G5NW0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283053	EPA 180.1 Rev. 2.0	Turbidity	4.5		NTU	P405011	
	EPA 300.0 Rev. 2.1	Chloride	3.8		mg Cl/L	P405157	
		Sulfate	0.41	I	mg SO4/L	P405160	
	SM 2120 B-2011	Color (true)	59		PCU	P405014	
	SM 2320 B-2011	Total Alkalinity	0.99	I	mg CaCO3/L	P405148	
	SM 2540 C-2011	TDS	18	I	mg/L	P405532	
	SM 2540 D-2011	TSS	5	I	mg/L	P405407	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P405154	
2283054	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P405436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P405474	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P405172	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P405210	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P405420	
2283055	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P405006	

Ref. Method and Comment:

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

Sample Location: Bayou Marcus Creek Upstream of Mobile Hwy Bridge **Collection Date/Time: 10/12/2021 10:20**

Field ID: G5NW0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283050	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P405011	
	EPA 300.0 Rev. 2.1	Chloride	6.7	A	mg Cl/L	P405157	
		Sulfate	3.7	A	mg SO4/L	P405160	
	SM 2120 B-2011	Color (true)	46		PCU	P405014	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P405148	
	SM 2540 C-2011	TDS	50		mg/L	P405532	
	SM 2540 D-2011	TSS	2	I	mg/L	P405407	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P405154	
2283051	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P405436	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P405473	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P405172	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P405210	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P405420	
2283052	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P405006	
2283060	EPA 8270E	Aldrin	0.77	U	ng/L	P405048	
		Alpha-BHC	0.12	U	ng/L	P405048	
		Alpha-Chlordane	0.24	U	ng/L	P405048	
		Beta-BHC	0.12	U	ng/L	P405048	
		Beta-Cyfluthrin**	1.5	UJ	ng/L	P405048	RPD
		Bifenthrin**	0.59	UJ	ng/L	P405048	RPD
		Carbophenothion	1.1	U	ng/L	P405048	
		Chlorothalonil	0.59	U	ng/L	P405048	
		Cis-Nonachlor**	0.24	UJ	ng/L	P405048	RPD
		Cypermethrin	1.8	UJ	ng/L	P405048	RPD
		Dacthal**	0.18	U	ng/L	P405048	
		DDD-p,p'	0.30	U	ng/L	P405048	RPD
		DDE-p,p'	0.24	U	ng/L	P405048	
		DDT-p,p'	0.30	U	ng/L	P405048	
		Delta-BHC	0.48	U	ng/L	P405048	
		Deltamethrin**	1.5	UJ	ng/L	P405048	RPD
		Dichlobenil**	0.12	U	ng/L	P405048	
		Dicofol	1.5	U	ng/L	P405048	
		Dieldrin	1.8	I	ng/L	P405048	
		Endosulfan I	0.48	U	ng/L	P405048	
		Endosulfan II	0.48	UJ	ng/L	P405048	LCS, MS
		Endosulfan Sulfate	0.36	U	ng/L	P405048	RPD
		Endrin	0.48	U	ng/L	P405048	
		Endrin Aldehyde	0.89	UJ	ng/L	P405048	LCS, RPD
		Endrin Ketone	0.48	U	ng/L	P405048	
		Esfenvalerate**	0.89	UJ	ng/L	P405048	RPD
		Ethalfuralin**	0.18	U	ng/L	P405048	
		Fenpropathrin**	0.30	U	ng/L	P405048	

Field ID: G5NW0156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2283060	EPA 8270E	Gamma-BHC	0.15	U	ng/L	P405048	
		Gamma-Chlordane	0.24	U	ng/L	P405048	
		Heptachlor	0.24	U	ng/L	P405048	
		Heptachlor Epoxide	0.84	I	ng/L	P405048	
		Hexachlorobenzene	1.2	U	ng/L	P405048	
		Kepone**	5.9	UJ	ng/L	P405048	CCV, LCS
		Lambda-Cyhalothrin**	0.89	UJ	ng/L	P405048	RPD
		Methoprene**	0.89	UJ	ng/L	P405048	RPD
		Methoxychlor	0.36	U	ng/L	P405048	
		MGK-264**	0.24	U	ng/L	P405048	
		Mirex	0.83	UJ	ng/L	P405048	RPD
		Oxychlordane**	0.36	U	ng/L	P405048	
		Permethrin	1.9	U	ng/L	P405048	
		Phenothrin**	1.1	U	ng/L	P405048	
		Piperonyl Butoxide**	0.18	U	ng/L	P405048	
		Prallethrin**	2.4	U	ng/L	P405048	
		Tau-Fluvalinate**	0.30	UJ	ng/L	P405048	RPD
		Tetramethrin**	0.89	U	ng/L	P405048	
		Trans-Nonachlor**	0.24	U	ng/L	P405048	
		Triclosan Methyl**	0.18	U	ng/L	P405048	
		Trifluralin	0.24	U	ng/L	P405048	
	EPA 8276	Chlordane	3.0	U	ng/L	P405048	
		Toxaphene	18	U	ng/L	P405048	

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: 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: P405011

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405157

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405160

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405436

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405473

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405474

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405172

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405210

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405006

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P405048

Component	Result	Code	Units
Aldrin	0.65	U	ng/L
Aldrin	0.65	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-BHC	0.10	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Alpha-Chlordane	0.20	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-BHC	0.10	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Beta-Cyfluthrin	1.2	U	ng/L
Bifenthrin	0.50	U	ng/L
Bifenthrin	0.50	U	ng/L
Carbophenothion	0.90	U	ng/L
Carbophenothion	0.90	U	ng/L
Chlorothalonil	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
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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8270E

Batch ID: P405048

Component	Result	Code	Units
Ethalfuralin	0.15	U	ng/L
Ethalfuralin	0.15	U	ng/L
Fenpropathrin	0.25	U	ng/L
Fenpropathrin	0.25	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-BHC	0.12	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Gamma-Chlordane	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor	0.20	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Heptachlor Epoxide	0.25	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Hexachlorobenzene	1.0	U	ng/L
Kepone	5.0	U	ng/L
Kepone	5.0	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Lambda-Cyhalothrin	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoprene	0.75	U	ng/L
Methoxychlor	0.30	U	ng/L
Methoxychlor	0.30	U	ng/L
MGK-264	0.20	U	ng/L
MGK-264	0.20	U	ng/L
Mirex	0.70	U	ng/L
Mirex	0.70	U	ng/L
Oxychlordane	0.30	U	ng/L
Oxychlordane	0.30	U	ng/L
Permethrin	1.6	U	ng/L
Permethrin	1.6	U	ng/L
Phenothrin	0.90	U	ng/L
Phenothrin	0.90	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Piperonyl Butoxide	0.15	U	ng/L
Prallethrin	2.0	U	ng/L
Prallethrin	2.0	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tau-Fluvalinate	0.25	U	ng/L
Tetramethrin	0.75	U	ng/L
Tetramethrin	0.75	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Trans-Nonachlor	0.20	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Triclosan Methyl	0.15	U	ng/L
Trifluralin	0.20	U	ng/L
Trifluralin	0.20	U	ng/L

Reference Method: EPA 8276

Batch ID: P405048

Component	Result	Code	Units
Chlordane	2.5	U	ng/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8276

Batch ID: P405048

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

Reference Method: SM 2120 B-2011

Batch ID: P405014

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011

Batch ID: P405148

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

Reference Method: SM 2540 C-2011

Batch ID: P405532

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P405407

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P405154

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P405420

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405157

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405160

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405436

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405473

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: P405474

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405172

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405210

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405006

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

Reference Method: EPA 8270E
Batch ID: P405048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aldrin	53.3	45.9	P/P	20 - 83.0
Alpha-BHC	94.1	90.2	P/P	74 - 108
Alpha-Chlordane	84.7	74.4	P/P	53 - 109
Beta-BHC	74.5	84.8	P/P	64 - 139

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8270E
Batch ID: P405048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beta-Cyfluthrin	104	69.4	P/P	27 - 171
Bifenthrin	71.5	45.6	P/P	20 - 124
Carbophenothion	68.4	57.9	P/P	20 - 94.0
Chlorothalonil	68.2	83.4	P/P	20 - 182
Cis-Nonachlor	96.0	61.6	P/P	46 - 110
Cypermethrin	83.1	57.5	P/P	35 - 160
Dacthal	91.3	90.9	P/P	70 - 115
DDD-p,p'	94.8	71.6	P/P	51 - 108
DDE-p,p'	84.8	74.5	P/P	51 - 104
DDT-p,p'	93.6	86.8	P/P	52 - 107
Delta-BHC	75.8	91.0	P/P	73 - 146
Deltamethrin	88.2	62.4	P/P	20 - 190
Dichlobenil	77.5	71.1	P/P	30 - 100
Dicofol	78.3	70.0	P/P	52 - 110
Dieldrin	86.9	77.5	P/P	57 - 111
Endosulfan I	85.4	80.0	P/P	61 - 106
Endosulfan II	61.6	55.8	P/F	57 - 122
Endosulfan Sulfate	80.0	80.7	P/P	58 - 122
Endrin	50.0	56.2	P/P	34 - 125
Endrin Aldehyde	49.5	30.5	P/F	40 - 120
Endrin Ketone	100	91.1	P/P	51 - 138
Esfenvalerate	82.5	54.5	P/P	20 - 193
Ethalfuralin	77.2	68.0	P/P	51 - 99.0
Fenpropathrin	93.2	70.6	P/P	40 - 116
Gamma-BHC	78.7	82.7	P/P	74 - 116
Gamma-Chlordane	81.4	67.8	P/P	49 - 105
Heptachlor	65.6	57.6	P/P	45 - 98.0
Heptachlor Epoxide	77.1	75.9	P/P	61 - 106
Hexachlorobenzene	65.4	58.1	P/P	41 - 96.0
Kepone	24.9	19.0	F/F	27 - 179
Lambda-Cyhalothrin	80.4	52.2	P/P	20 - 199
Methoprene	80.7	51.4	P/P	50 - 150
Methoxychlor	86.7	81.1	P/P	61 - 111
MGK-264	89.4	81.2	P/P	20 - 124
Mirex	57.0	40.8	P/P	20 - 199
Oxychlordane	76.0	72.1	P/P	50 - 150
Permethrin	107	99.0	P/P	31 - 155
Phenothrin	71.4	53.5	P/P	20 - 100
Piperonyl Butoxide	72.8	83.7	P/P	20 - 144
Prallethrin	79.7	67.4	P/P	20 - 103
Tau-Fluvalinate	78.7	50.0	P/P	24 - 133
Tetramethrin	78.0	65.0	P/P	20 - 116
Trans-Nonachlor	83.7	69.4	P/P	49 - 105
Triclosan Methyl	88.2	81.5	P/P	60 - 111
Trifluralin	74.0	62.1	P/P	53 - 97.0

Reference Method: EPA 8276
Batch ID: P405048

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	103	92.6	P/P	56 - 117
Toxaphene	88.1	81.0	P/P	45 - 116

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P405014

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P405148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P405154

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	93 - 104

Reference Method: SM 5310 B-2011
Batch ID: P405420

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405157

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283050	Chloride	100		P	90 - 110
2283112	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405160

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283050	Sulfate	101		P	90 - 110
2283112	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405436

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283051	Ammonia-N	98.8	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405473

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282867	Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283054	Kjeldahl Nitrogen	101	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405172

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283051	NO2NO3-N	95.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405210

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283396	Total-P	105	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283055	O-Phosphate-P	101	101	P/P	90 - 110

Reference Method: EPA 8270E
Batch ID: P405048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283157	Aldrin	62.6	51.2	P/P	10 - 94.0
2283157	Alpha-BHC	90.7	75.9	P/P	71 - 108

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8270E
Batch ID: P405048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283157	Alpha-Chlordane	68.3	52.6	P/P	42 - 115
2283157	Beta-BHC	98.2	82.1	P/P	56 - 161
2283157	Beta-Cyfluthrin	126	94.3	P/P	46 - 190
2283157	Bifenthrin	75.9	60.2	P/P	19 - 126
2283157	Carbophenothion	85.7	70.8	P/P	18 - 108
2283157	Chlorothalonil	110	93.2	P/P	10 - 262
2283157	Cis-Nonachlor	110	83.6	P/P	44 - 112
2283157	Cypermethrin	101	75.4	P/P	40 - 178
2283157	Dacthal	87.9	71.1	P/P	60 - 119
2283157	DDD-p,p'	87.8	47.3	P/P	40 - 114
2283157	DDE-p,p'	66.4	54.2	P/P	22 - 125
2283157	DDT-p,p'	75.7	60.9	P/P	39 - 110
2283157	Delta-BHC	92.7	76.8	P/P	64 - 174
2283157	Deltamethrin	90.7	60.6	P/P	10 - 227
2283157	Dichlobenil	81.7	68.2	P/P	20 - 99.0
2283157	Dicofol	88.3	66.2	P/P	43 - 115
2283157	Dieldrin	71.0	54.6	P/P	31 - 131
2283157	Endosulfan I	82.0	65.7	P/P	52 - 110
2283157	Endosulfan II	69.5	52.5	P/F	53 - 127
2283157	Endosulfan Sulfate	89.9	62.2	P/P	44 - 135
2283157	Endrin	70.9	53.5	P/P	36 - 122
2283157	Endrin Aldehyde	68.4	55.1	P/P	23 - 115
2283157	Endrin Ketone	91.1	69.5	P/P	46 - 147
2283157	Esfenvalerate	103	78.3	P/P	25 - 217
2283157	Ethalfuralin	84.8	70.5	P/P	46 - 99.0
2283157	Fenpropathrin	98.3	75.1	P/P	42 - 121
2283157	Gamma-BHC	87.9	75.1	P/P	63 - 131
2283157	Gamma-Chlordane	65.8	51.3	P/P	40 - 108
2283157	Heptachlor	76.5	62.1	P/P	38 - 98.0
2283157	Heptachlor Epoxide	79.2	64.3	P/P	39 - 124
2283157	Hexachlorobenzene	70.0	58.6	P/P	37 - 96.0
2283157	Kepone	25.8	20.1	P/P	10 - 216
2283157	Lambda-Cyhalothrin	89.6	64.9	P/P	21 - 220
2283157	Methoprene	87.4	67.7	P/P	50 - 170
2283157	Methoxychlor	90.2	72.2	P/P	56 - 118
2283157	MGK-264	79.8	64.7	P/P	28 - 125
2283157	Mirex	71.3	53.5	P/P	10 - 203
2283157	Oxychlordane	78.0	63.7	P/P	50 - 170
2283157	Permethrin	106	93.6	P/P	42 - 173
2283157	Phenothrin	83.7	62.8	P/P	10 - 140
2283157	Piperonyl Butoxide	110	81.6	P/P	10 - 158
2283157	Prallethrin	71.4	54.0	P/P	19 - 119
2283157	Tau-Fluvalinate	102	75.2	P/P	27 - 164
2283157	Tetramethrin	95.2	73.8	P/P	16 - 130
2283157	Trans-Nonachlor	77.8	65.1	P/P	43 - 105
2283157	Triclosan Methyl	77.5	63.2	P/P	50 - 113
2283157	Trifluralin	79.9	65.4	P/P	48 - 98.0

Reference Method: EPA 8276
Batch ID: P405048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8276

Batch ID: P405048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2283175	Chlordane	96.0	105	P/P	47 - 128
2283175	Toxaphene	92.1	105	P/P	11 - 163

Reference Method: SM 4500 F-C-2011

Batch ID: P405154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282443	Fluoride	102	101	P/P	92 - 107

Reference Method: SM 5310 B-2011

Batch ID: P405420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2282776	Organic Carbon	97.5	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P405011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282936	Turbidity	1.91	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405157

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283050	Chloride	0.435	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P405160

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283050	Sulfate	1.22	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P405436

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283051	Ammonia-N	0.686	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282867	Kjeldahl Nitrogen	1.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P405474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283054	Kjeldahl Nitrogen	2.23	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P405172

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283051	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P405210

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283396	Total-P	1.02	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P405006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283055	O-Phosphate-P	0.198	Spike	P	0 - 20

Reference Method: EPA 8270E
Batch ID: P405048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283157	Aldrin	19.9	Spike	P	0 - 30
2283157	Alpha-BHC	17.8	Spike	P	0 - 30
2283157	Alpha-Chlordane	22.0	Spike	P	0 - 30
2283157	Beta-BHC	17.8	Spike	P	0 - 30
2283157	Beta-Cyfluthrin	29.0	Spike	P	0 - 30
2283157	Bifenthrin	23.0	Spike	P	0 - 30
2283157	Carbophenothion	19.0	Spike	P	0 - 30
2283157	Chlorothalonil	17.0	Spike	P	0 - 50
2283157	Cis-Nonachlor	27.3	Spike	P	0 - 30
2283157	Cypermethrin	28.8	Spike	P	0 - 30
2283157	Dacthal	21.1	Spike	P	0 - 30
2283157	DDD-p,p'	51.9	Spike	F	0 - 30
2283157	DDE-p,p'	17.4	Spike	P	0 - 30
2283157	DDT-p,p'	19.0	Spike	P	0 - 30
2283157	Delta-BHC	18.8	Spike	P	0 - 30
2283157	Deltamethrin	39.8	Spike	F	0 - 30
2283157	Dichlobenil	17.9	Spike	P	0 - 30
2283157	Dicofol	28.7	Spike	P	0 - 30
2283157	Dieldrin	22.0	Spike	P	0 - 30
2283157	Endosulfan I	22.1	Spike	P	0 - 30
2283157	Endosulfan II	27.9	Spike	P	0 - 30
2283157	Endosulfan Sulfate	36.3	Spike	F	0 - 30
2283157	Endrin	28.0	Spike	P	0 - 30
2283157	Endrin Aldehyde	21.5	Spike	P	0 - 30
2283157	Endrin Ketone	27.0	Spike	P	0 - 30
2283157	Esfenvalerate	27.1	Spike	P	0 - 30
2283157	Ethalfuralin	18.4	Spike	P	0 - 30
2283157	Fenpropathrin	26.7	Spike	P	0 - 30
2283157	Gamma-BHC	15.7	Spike	P	0 - 30
2283157	Gamma-Chlordane	21.1	Spike	P	0 - 30
2283157	Heptachlor	20.8	Spike	P	0 - 30
2283157	Heptachlor Epoxide	20.7	Spike	P	0 - 30
2283157	Hexachlorobenzene	17.8	Spike	P	0 - 30
2283157	Kepone	24.5	Spike	P	0 - 30
2283157	Lambda-Cyhalothrin	31.9	Spike	F	0 - 30
2283157	Methoprene	25.5	Spike	P	0 - 30
2283157	Methoxychlor	22.2	Spike	P	0 - 30
2283157	MGK-264	20.9	Spike	P	0 - 30
2283157	Mirex	28.4	Spike	P	0 - 30
2283157	Oxychlordane	20.2	Spike	P	0 - 30
2283157	Permethrin	12.1	Spike	P	0 - 30
2283157	Phenothrin	28.5	Spike	P	0 - 30
2283157	Piperonyl Butoxide	29.4	Spike	P	0 - 30
2283157	Prallethrin	27.7	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8270E
Batch ID: P405048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283157	Tau-Fluvalinate	29.9	Spike	P	0 - 30
2283157	Tetramethrin	25.3	Spike	P	0 - 30
2283157	Trans-Nonachlor	17.8	Spike	P	0 - 30
2283157	Triclosan Methyl	20.4	Spike	P	0 - 30
2283157	Trifluralin	20.0	Spike	P	0 - 30
LFB	Aldrin	14.9	LCS	P	0 - 30
LFB	Alpha-BHC	4.27	LCS	P	0 - 30
LFB	Alpha-Chlordane	13.0	LCS	P	0 - 30
LFB	Beta-BHC	12.9	LCS	P	0 - 30
LFB	Beta-Cyfluthrin	40.0	LCS	F	0 - 30
LFB	Bifenthrin	44.2	LCS	F	0 - 30
LFB	Carbophenothion	16.7	LCS	P	0 - 30
LFB	Chlorothalonil	20.1	LCS	P	0 - 50
LFB	Cis-Nonachlor	43.7	LCS	F	0 - 30
LFB	Cypermethrin	36.3	LCS	F	0 - 30
LFB	Dacthal	0.401	LCS	P	0 - 30
LFB	DDD-p,p'	27.9	LCS	P	0 - 30
LFB	DDE-p,p'	12.9	LCS	P	0 - 30
LFB	DDT-p,p'	7.53	LCS	P	0 - 30
LFB	Delta-BHC	18.2	LCS	P	0 - 30
LFB	Deltamethrin	34.1	LCS	F	0 - 30
LFB	Dichlobenil	8.61	LCS	P	0 - 30
LFB	Dicofol	11.2	LCS	P	0 - 30
LFB	Dieldrin	11.4	LCS	P	0 - 30
LFB	Endosulfan I	6.55	LCS	P	0 - 30
LFB	Endosulfan II	10.0	LCS	P	0 - 30
LFB	Endosulfan Sulfate	0.850	LCS	P	0 - 30
LFB	Endrin	11.7	LCS	P	0 - 30
LFB	Endrin Aldehyde	47.7	LCS	F	0 - 30
LFB	Endrin Ketone	9.32	LCS	P	0 - 30
LFB	Esfenvalerate	40.8	LCS	F	0 - 30
LFB	Ethalfuralin	12.7	LCS	P	0 - 30
LFB	Fenpropathrin	27.7	LCS	P	0 - 30
LFB	Gamma-BHC	4.87	LCS	P	0 - 30
LFB	Gamma-Chlordane	18.3	LCS	P	0 - 30
LFB	Heptachlor	13.1	LCS	P	0 - 30
LFB	Heptachlor Epoxide	1.51	LCS	P	0 - 30
LFB	Hexachlorobenzene	11.8	LCS	P	0 - 30
LFB	Kepone	26.7	LCS	P	0 - 30
LFB	Lambda-Cyhalothrin	42.6	LCS	F	0 - 30
LFB	Methoprene	44.4	LCS	F	0 - 30
LFB	Methoxychlor	6.69	LCS	P	0 - 30
LFB	MGK-264	9.56	LCS	P	0 - 30
LFB	Mirex	33.0	LCS	F	0 - 30
LFB	Oxychlordane	5.27	LCS	P	0 - 30
LFB	Permethrin	8.21	LCS	P	0 - 30
LFB	Phenothrin	28.6	LCS	P	0 - 30
LFB	Piperonyl Butoxide	13.9	LCS	P	0 - 30
LFB	Prallethrin	16.8	LCS	P	0 - 30
LFB	Tau-Fluvalinate	44.7	LCS	F	0 - 30
LFB	Tetramethrin	18.2	LCS	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8270E
 Batch ID: P405048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
LFB	Trans-Nonachlor	18.7	LCS	P	0 - 30
LFB	Triclosan Methyl	7.85	LCS	P	0 - 30
LFB	Trifluralin	17.5	LCS	P	0 - 30

Reference Method: EPA 8276
 Batch ID: P405048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283175	Chlordane	9.03	Spike	P	0 - 30
2283175	Toxaphene	13.3	Spike	P	0 - 30
LFB	Chlordane	10.7	LCS	P	0 - 30
LFB	Toxaphene	8.30	LCS	P	0 - 30

Reference Method: SM 2120 B-2011
 Batch ID: P405014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2283075	Color (true)	17.2	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P405148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282443	Total Alkalinity	4.87	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
 Batch ID: P405532

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282662	TDS	2.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P405154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282443	Fluoride	0.513	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P405420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2282776	Organic Carbon	0.341	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2283060

Field Sample ID: G5NW0156

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8270E	Decachlorobiphenyl	70.5	P	29 - 123
EPA 8270E	Tetrachloro-m-xylene	61.2	P	24 - 97.0
EPA 8276	Decachlorobiphenyl	62.9	P	29 - 92.0
EPA 8276	PCNB	77.8	P	43 - 134

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A108279

Included Lab Sample IDs: 2283050, 2283053

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A108313

Included Lab Sample IDs: 2283052, 2283055

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	99.4	P/P	90 - 110
O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A108314

Included Lab Sample IDs: 2283050, 2283053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	98.5	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A108315

Included Lab Sample IDs: 2283050, 2283053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	101	P/P	90 - 115

Reference Method: SM 2320 B-2011

Run ID: A108368

Included Lab Sample IDs: 2283050, 2283053

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	99.9	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A108368

Included Lab Sample IDs: 2283050, 2283053

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A108378

Included Lab Sample IDs: 2283051, 2283054

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

Reference Method: EPA 8270E

Run ID: A108420

Included Lab Sample IDs: 2283060

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

Reference Method: EPA 8270E
Run ID: A108420
Included Lab Sample IDs: 2283060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aldrin	101		P	80 - 120
Alpha-BHC	100		P	80 - 120
Alpha-Chlordane	99.3		P	80 - 120
Beta-BHC	89.7		P	80 - 120
Beta-Cyfluthrin	95.6		P	80 - 120
Bifenthrin	102		P	80 - 120
Carbophenothion	101		P	80 - 120
Chlorothalonil	100		P	80 - 120
Cis-Nonachlor	116		P	80 - 120
Cypermethrin	91.8		P	80 - 120
Dacthal	101		P	80 - 120
DDD-p,p'	115		P	80 - 120
DDE-p,p'	103		P	80 - 120
DDT-p,p'	103		P	80 - 120
Delta-BHC	89.6		P	80 - 120
Deltamethrin	90.0		P	80 - 120
Dichlobenil	105		P	80 - 120
Dicofol	102		P	80 - 120
Dieldrin	103		P	80 - 120
Endosulfan I	97.4		P	80 - 120
Endosulfan II	98.3		P	80 - 120
Endosulfan Sulfate	96.4		P	80 - 120
Endrin	98.2		P	80 - 120
Endrin Aldehyde	105		P	80 - 120
Endrin Ketone	108		P	80 - 120
Esfenvalerate	91.5		P	80 - 120
Ethalfuralin	99.9		P	80 - 120
Fenpropathrin	102		P	80 - 120
Gamma-BHC	90.3		P	80 - 120
Gamma-Chlordane	101		P	80 - 120
Heptachlor	100		P	80 - 120
Heptachlor Epoxide	102		P	80 - 120
Hexachlorobenzene	99.1		P	80 - 120
Kepone	64.4*		F	80 - 120
Lambda-Cyhalothrin	97.4		P	80 - 120
Methoprene	102		P	80 - 120
Methoxychlor	105		P	80 - 120
MGK-264	105		P	80 - 120
Mirex	96.5		P	80 - 120
Oxychlordane	106		P	80 - 120
Permethrin	100		P	80 - 120
Phenothrin	99.8		P	80 - 120
Piperonyl Butoxide	99.6		P	80 - 120
Prallethrin	93.3		P	80 - 120
Tau-Fluvalinate	92.9		P	80 - 120
Tetramethrin	99.1		P	80 - 120
Trans-Nonachlor	101		P	80 - 120
Triclosan Methyl	100		P	80 - 120
Trifluralin	95.6		P	80 - 120

Quality Assurance Report Calibration Verification

Reference Method: EPA 8276

Run ID: A108429

Included Lab Sample IDs: 2283060

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.8		P	80 - 120
Toxaphene	103		P	80 - 120

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A108451

Included Lab Sample IDs: 2283051, 2283054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A108471

Included Lab Sample IDs: 2283051, 2283054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.0	95.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A108476

Included Lab Sample IDs: 2283051, 2283054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A108513

Included Lab Sample IDs: 2283051, 2283054

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	100	P/P	90 - 110
Kjeldahl Nitrogen	98.6	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	MS
							SMP	
EPA 180.1 Rev. 2.0	Turbidity						1.91	
EPA 300.0 Rev. 2.1	Chloride	101		100	101		0.435	
	Sulfate	102		101	102		1.22	
EPA 350.1 Rev. 2.0	Ammonia-N	97.6		98.8	100			0.686
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102		100	102			1.02
	Kjeldahl Nitrogen	107		101	98.5			2.23
EPA 353.2 Rev. 2.0	NO2NO3-N	101		95.8				0.0
EPA 365.1 Rev. 2.0	Total-P	104		105	104			1.02
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.1		101	101			0.198
EPA 8270E	Aldrin	53.3	45.9	62.6	51.2	14.9		19.9
	Alpha-BHC	94.1	90.2	90.7	75.9	4.27		17.8
	Alpha-Chlordane	84.7	74.4	68.3	52.6	13.0		22.0
	Beta-BHC	74.5	84.8	98.2	82.1	12.9		17.8
	Beta-Cyfluthrin	104	69.4	126	94.3	40.0		29.0
	Bifenthrin	71.5	45.6	75.9	60.2	44.2		23.0
	Carbophenothion	68.4	57.9	85.7	70.8	16.7		19.0
	Chlorothalonil	68.2	83.4	110	93.2	20.1		17.0
	Cis-Nonachlor	96.0	61.6	110	83.6	43.7		27.3
	Cypermethrin	83.1	57.5	101	75.4	36.3		28.8
	Dacthal	91.3	90.9	87.9	71.1	0.401		21.1
	DDD-p,p'	94.8	71.6	87.8	47.3	27.9		51.9
	DDE-p,p'	84.8	74.5	66.4	54.2	12.9		17.4
	DDT-p,p'	93.6	86.8	75.7	60.9	7.53		19.0
	Delta-BHC	75.8	91.0	92.7	76.8	18.2		18.8
	Deltamethrin	88.2	62.4	90.7	60.6	34.1		39.8
	Dichlobenil	77.5	71.1	81.7	68.2	8.61		17.9
	Dicofol	78.3	70.0	88.3	66.2	11.2		28.7
	Dieldrin	86.9	77.5	71.0	54.6	11.4		22.0
	Endosulfan I	85.4	80.0	82.0	65.7	6.55		22.1
	Endosulfan II	61.6	55.8	69.5	52.5	10.0		27.9
	Endosulfan Sulfate	80.0	80.7	89.9	62.2	0.850		36.3
	Endrin	50.0	56.2	70.9	53.5	11.7		28.0
	Endrin Aldehyde	49.5	30.5	68.4	55.1	47.7		21.5
	Endrin Ketone	100	91.1	91.1	69.5	9.32		27.0
	Esfenvalerate	82.5	54.5	103	78.3	40.8		27.1
	Ethalfuralin	77.2	68.0	84.8	70.5	12.7		18.4
	Fenpropathrin	93.2	70.6	98.3	75.1	27.7		26.7
	Gamma-BHC	78.7	82.7	87.9	75.1	4.87		15.7
	Gamma-Chlordane	81.4	67.8	65.8	51.3	18.3		21.1
	Heptachlor	65.6	57.6	76.5	62.1	13.1		20.8
	Heptachlor Epoxide	77.1	75.9	79.2	64.3	1.51		20.7
	Hexachlorobenzene	65.4	58.1	70.0	58.6	11.8		17.8
	Kepone	24.9	19.0	25.8	20.1	26.7		24.5
	Lambda-Cyhalothrin	80.4	52.2	89.6	64.9	42.6		31.9
	Methoprene	80.7	51.4	87.4	67.7	44.4		25.5
	Methoxychlor	86.7	81.1	90.2	72.2	6.69		22.2
	MGK-264	89.4	81.2	79.8	64.7	9.56		20.9
	Mirex	57.0	40.8	71.3	53.5	33.0		28.4
	Oxychlordane	76.0	72.1	78.0	63.7	5.27		20.2
	Permethrin	107	99.0	106	93.6	8.21		12.1
	Phenothrin	71.4	53.5	83.7	62.8	28.6		28.5
	Piperonyl Butoxide	72.8	83.7	110	81.6	13.9		29.4
	Prallethrin	79.7	67.4	54.0	71.4	16.8		27.7
	Tau-Fluvalinate	78.7	50.0	75.2	102	44.7		29.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery		Precision	
						LCS	MS
EPA 8270E	Tetramethrin	78.0	65.0	73.8	95.2	18.2	25.3
	Trans-Nonachlor	83.7	69.4	65.1	77.8	18.7	17.8
	Triclosan Methyl	88.2	81.5	63.2	77.5	7.85	20.4
	Trifluralin	74.0	62.1	65.4	79.9	17.5	20.0
EPA 8276	Chlordane	103	92.6	96.0	105	10.7	9.03
	Toxaphene	88.1	81.0	92.1	105	8.30	13.3
	Color (true)	99.2				17.2	
SM 2320 B-2011	Total Alkalinity	102				4.87	
SM 2540 C-2011	TDS					2.51	
SM 4500 F-C-2011	Fluoride	103		102	101		0.513
SM 5310 B-2011	Organic Carbon	98.2		97.5	97.1		0.341

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2283050, 2283053
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2283050, 2283053
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2283050, 2283053
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2283051, 2283054
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2283051, 2283054
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2283051, 2283054
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2283051, 2283054
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2283052, 2283055
EPA 8270E	Organochlorine pesticides, pyrethroids and tracers in water matrices by GC/MS/MS	2283060
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2283060
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2283050, 2283053
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2283050, 2283053
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2283050, 2283053
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2283050, 2283053
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2283050, 2283053
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2283051, 2283054

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	10/13/2021			10/13/2021 15:31	Khloe J Berg	2283050, 2283053
EPA 300.0 Rev. 2.1	10/13/2021			10/15/2021 18:00	Roberta Tatti	2283050
	10/13/2021			10/15/2021 18:48	Roberta Tatti	2283053
EPA 350.1 Rev. 2.0	10/13/2021			10/21/2021 11:38	Ping Hua	2283051
	10/13/2021			10/21/2021 11:50	Ping Hua	2283054
EPA 351.2 Rev. 2.0	10/13/2021	10/22/2021 11:54	Benjamin T. Nordmann	10/25/2021 10:42	Alexandra J Mattheus	2283051
	10/13/2021	10/22/2021 11:54	Benjamin T. Nordmann	10/25/2021 10:50	Alexandra J Mattheus	2283054
EPA 353.2 Rev. 2.0	10/13/2021			10/18/2021 10:11	Beverly Y. Sanders	2283051
	10/13/2021			10/18/2021 10:26	Beverly Y. Sanders	2283054
EPA 365.1 Rev. 2.0	10/13/2021	10/19/2021 16:46	Simonne.V. Calhoun	10/20/2021 15:43	Lipi Saha	2283051
	10/13/2021	10/19/2021 16:46	Simonne.V. Calhoun	10/20/2021 15:44	Lipi Saha	2283054
EPA 365.1 Rev. 2.0 dissolved	10/13/2021			10/13/2021 15:06	James L Waggeberby	2283055
	10/13/2021			10/13/2021 16:01	James L Waggeberby	2283052
EPA 8270E	10/13/2021	10/17/2021 10:45	Rasheda Ghaffari	10/20/2021 01:35	Arthur Maknenko	2283060
EPA 8276	10/13/2021	10/17/2021 10:45	Rasheda Ghaffari	10/19/2021 06:01	Michael Poppell	2283060
SM 2120 B-2011	10/13/2021			10/13/2021 17:12	Benjamin T. Nordmann	2283050
	10/13/2021			10/13/2021 17:13	Benjamin T. Nordmann	2283053
SM 2320 B-2011	10/13/2021			10/16/2021 17:10	Dale L. Simmons	2283050
	10/13/2021			10/16/2021 17:19	Dale L. Simmons	2283053
SM 2540 C-2011	10/13/2021			10/14/2021 15:39	Yijie Li	2283050, 2283053
SM 2540 D-2011	10/13/2021			10/14/2021 15:39	Yijie Li	2283050, 2283053
SM 4500 F-C-2011	10/13/2021			10/16/2021 17:10	Dale L. Simmons	2283050
	10/13/2021			10/16/2021 17:19	Dale L. Simmons	2283053
SM 5310 B-2011	10/13/2021			10/21/2021 03:10	Khloe J Berg	2283051
	10/13/2021			10/21/2021 03:25	Khloe J Berg	2283054