Chemical Analysis Report

NE-DIST-2021-02-23-01

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

Event Description: **LSJR East 2021**
Request ID: **RQ-2021-02-08-30**
Customer: **NE-DIST**
Project ID: **SMP**

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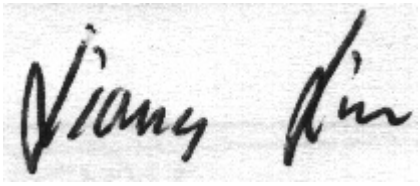
Date Certified: 16-MAR-2021 14:45



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: Big Pottsburg CR Bowden Rd. **Collection Date/Time: 02/22/2021 08:35**

Field ID: 20030068 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226462	EPA 8276	Chlordane	8.6	I	ng/L	P394192	
		Toxaphene	31	U	ng/L	P394192	

Sample Location: Little Pottsburg Creek at Emerson **Collection Date/Time: 02/22/2021 09:20**

Field ID: 20030070 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226437	EPA 180.1 Rev. 2.0	Turbidity	5.9		NTU	P394119	
	EPA 300.0 Rev. 2.1	Chloride	39		mg Cl/L	P394241	
		Sulfate	51		mg SO4/L	P394243	
	SM 2120 B-2011	Color (true)	56		PCU	P394123	
	SM 2320 B-2011	Total Alkalinity	153		mg CaCO3/L	P394419	
	SM 2540 C-2011	TDS	342	A	mg/L	P394603	
	SM 2540 D-2011	TSS	3	I A	mg/L	P394530	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P394357	
2226438	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P394300	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P394205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.57		mg N/L	P394136	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P394154	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P394646	
2226439	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P394103	
2226463	EPA 8321B	2,4-D	0.017		ug/L	P394025	
		Acesulfame K	0.10	U	ug/L	P394077	MS
		2,4,5-T	0.0040	U	ug/L	P394025	
		AMPA	0.33	I	ug/L	P394077	
		Sucralose	1.3		ug/L	P394077	
		Acetaminophen**	0.049		ug/L	P394025	RPD
		Acetamiprid**	0.0020	U	ug/L	P394025	
		Endothall	0.25	U	ug/L	P394077	
		Glufosinate	0.10	U	ug/L	P394077	
		Glyphosate	0.92		ug/L	P394077	
		Afidopyropen**	0.0020	U	ug/L	P394025	
		Bentazon	0.11		ug/L	P394025	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P394025	
		Carbamazepine**	0.0013	I	ug/L	P394025	
		Clothianidin**	0.0049	I	ug/L	P394025	
		Dinotefuran**	0.0053	I	ug/L	P394025	
		Diuron	0.0057	I	ug/L	P394025	
		Fenuron	0.016	U	ug/L	P394025	
		Fluridone**	0.0077		ug/L	P394025	
		Imazapyr**	0.21		ug/L	P394025	
		Hydrocodone**	0.0020	U	ug/L	P394025	
		Ibuprofen**	0.020	U	ug/L	P394025	
		Imidacloprid	0.021		ug/L	P394025	
		Linuron	0.0040	U	ug/L	P394025	
		Mandestrobin**	0.0020	U	ug/L	P394025	
		MCPP	0.0039	I	ug/L	P394025	
		Naproxen**	0.0080	U	ug/L	P394025	RPD
		Primidone**	0.013	I	ug/L	P394025	
		Pyraclostrobin**	0.0020	U	ug/L	P394025	

Field ID: 20030070 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226463	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P394025	
		Tolfenpyrad**	0.0020	U	ug/L	P394025	
		Triclopyr**	0.0040	U	ug/L	P394025	
2226468	EPA 200.7 Rev. 4.4	Barium	42.5		ug/L	P394173	
		Calcium	76.6		mg/L	P394173	
		Iron	1.39E+03		ug/L	P394173	
		Magnesium	9.90		mg/L	P394173	
		Manganese	54.9		ug/L	P394173	
		Potassium	2.4		mg/L	P394173	
		Sodium	26.1		mg/L	P394173	
		Zinc	19	I	ug/L	P394173	
	EPA 200.8 Rev. 5.4	Aluminum	40		ug/L	P394173	
		Antimony	0.22		ug/L	P394173	
		Arsenic	1.10		ug/L	P394173	
		Beryllium	0.016	I	ug/L	P394173	
		Boron**	43.1		ug/L	P394173	
		Cadmium	0.020	U	ug/L	P394173	
		Chromium	0.48	I	ug/L	P394173	
		Copper	2.02		ug/L	P394173	
		Lead	0.30	I	ug/L	P394173	
		Nickel	0.99	I	ug/L	P394173	
		Selenium	0.24	I	ug/L	P394173	
		Silver	0.010	U	ug/L	P394173	
		Thallium	0.10	U	ug/L	P394173	
	SM 2340B	Hardness	232		mg/L	P394173	

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: Drainage Ditch Parental Home Rd. **Collection Date/Time: 02/22/2021 08:50**

Field ID: 20030071 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226440	EPA 180.1 Rev. 2.0	Turbidity	6.2		NTU	P394119	
	EPA 300.0 Rev. 2.1	Chloride	37		mg Cl/L	P394241	
		Sulfate	32		mg SO4/L	P394243	
	SM 2120 B-2011	Color (true)	62		PCU	P394123	
	SM 2320 B-2011	Total Alkalinity	122		mg CaCO3/L	P394419	
	SM 2540 C-2011	TDS	256		mg/L	P394603	
	SM 2540 D-2011	TSS	2	I	mg/L	P394530	
	SM 4500 F-C-2011	Fluoride	0.15		mg F/L	P394357	
2226441	EPA 350.1 Rev. 2.0	Ammonia-N	0.20		mg N/L	P394300	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.73		mg N/L	P394205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.37		mg N/L	P394136	
	EPA 365.1 Rev. 2.0	Total-P	0.078		mg P/L	P394154	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P394646	
2226442	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P394103	
2226464	EPA 8321B	2,4-D	0.071		ug/L	P394025	
		Acesulfame K	0.10	U	ug/L	P394077	MS
		2,4,5-T	0.0040	U	ug/L	P394025	
		AMPA	0.55		ug/L	P394077	
		Sucralose	0.21		ug/L	P394077	
		Acetaminophen**	0.28		ug/L	P394025	RPD
		Acetamiprid**	0.0020	U	ug/L	P394025	
		Endothall	0.25	U	ug/L	P394077	
		Glufosinate	0.10	U	ug/L	P394077	
		Glyphosate	1.4		ug/L	P394077	
		Afidopyropen**	0.0020	U	ug/L	P394025	
		Bentazon	0.012		ug/L	P394025	MS
		Benzovindiflupyr**	0.0020	U	ug/L	P394025	
		Carbamazepine**	8.0E-04	U	ug/L	P394025	
		Clothianidin**	0.0020	U	ug/L	P394025	
		Dinotefuran**	0.0038	I	ug/L	P394025	
		Diuron	0.0040	I	ug/L	P394025	
		Fenuron	0.016	U	ug/L	P394025	
		Fluridone**	9.6E-04	I	ug/L	P394025	
		Imazapyr**	0.39		ug/L	P394025	
		Hydrocodone**	0.0020	U	ug/L	P394025	
		Ibuprofen**	0.020	U	ug/L	P394025	
		Imidacloprid	0.024		ug/L	P394025	
		Linuron	0.0040	U	ug/L	P394025	
		Mandestrobin**	0.0020	U	ug/L	P394025	
		MCPP	0.046		ug/L	P394025	
		Naproxen**	0.0080	U	ug/L	P394025	RPD
		Primidone**	0.0040	U	ug/L	P394025	
		Pyraclostrobin**	0.0020	U	ug/L	P394025	

Field ID: 20030071 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226464	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P394025	
		Tolfenpyrad**	0.0020	U	ug/L	P394025	
		Triclopyr**	0.0040	U	ug/L	P394025	

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: Red Bay Branch at Lone Star Road **Collection Date/Time: 02/22/2021 09:50**

Field ID: 20030674 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226443	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P394119	
	EPA 300.0 Rev. 2.1	Chloride	44		mg Cl/L	P394241	
		Sulfate	50		mg SO4/L	P394243	
	SM 2120 B-2011	Color (true)	12		PCU	P394123	
	SM 2320 B-2011	Total Alkalinity	51	A	mg CaCO3/L	P394419	
	SM 2540 C-2011	TDS	207		mg/L	P394603	
	SM 2540 D-2011	TSS	2	I	mg/L	P394530	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394357	
2226444	EPA 350.1 Rev. 2.0	Ammonia-N	0.079		mg N/L	P394300	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.39		mg N/L	P394205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.0		mg N/L	P394136	
	EPA 365.1 Rev. 2.0	Total-P	0.039		mg P/L	P394154	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P394646	
2226445	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.019		mg P/L	P394103	
2226465	EPA 8321B	2,4-D	0.10		ug/L	P394079	
		Acesulfame K	0.10	U	ug/L	P394077	MS
		2,4,5-T	0.0040	U	ug/L	P394079	
		AMPA	0.40		ug/L	P394077	
		Sucralose	3.9		ug/L	P394077	
		Acetaminophen**	0.0080	U	ug/L	P394079	
		Acetamiprid**	0.0020	U	ug/L	P394079	
		Endothall	0.25	U	ug/L	P394077	
		Glufosinate	0.10	U	ug/L	P394077	
		Glyphosate	0.89		ug/L	P394077	
		Afidopyropen**	0.0020	U	ug/L	P394079	
		Bentazon	0.086		ug/L	P394079	
		Benzovindiflupyr**	0.0020	U	ug/L	P394079	
		Carbamazepine**	0.019		ug/L	P394079	
		Clothianidin**	0.0020	U	ug/L	P394079	
		Dinotefuran**	0.0076	I	ug/L	P394079	
		Diuron	0.0024	I	ug/L	P394079	
		Fenuron	0.016	U	ug/L	P394079	
		Fluridone**	8.0E-04	U	ug/L	P394079	
		Imazapyr**	0.19		ug/L	P394079	
		Hydrocodone**	0.0020	U	ug/L	P394079	
		Ibuprofen**	0.020	U	ug/L	P394079	
		Imidacloprid	0.014		ug/L	P394079	
		Linuron	0.0040	U	ug/L	P394079	
		Mandestrobin**	0.0020	U	ug/L	P394079	
		MCPP	0.0020	U	ug/L	P394079	
		Naproxen**	0.0080	U	ug/L	P394079	
		Primidone**	0.015	I	ug/L	P394079	
		Pyraclostrobin**	0.0020	U	ug/L	P394079	

Field ID: 20030674 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226465	EPA 8321B	Thiamethoxam**	0.0020	U	ug/L	P394079	
		Tolfenpyrad**	0.0020	U	ug/L	P394079	
		Triclopyr**	0.0040	U	ug/L	P394079	

Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

Sample Location: Greenfield Creek @ Queens Harbour Blvd. **Collection Date/Time: 02/22/2021 10:50**

Field ID: 20030809 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226431	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P394119	
	EPA 300.0 Rev. 2.1	Bromide	1.4		mg Br/L	P394335	
	SM 2320 B-2011	Total Alkalinity	72		mg CaCO3/L	P394419	
	SM 2540 D-2011	TSS	6	I	mg/L	P394531	
	SM 4500 F-C-2011	Fluoride	0.093	I	mg F/L	P394357	
2226432	EPA 350.1 Rev. 2.0	Ammonia-N	0.093		mg N/L	P394300	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.86		mg N/L	P394205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.15		mg N/L	P394136	
	EPA 365.1 Rev. 2.0	Total-P	0.085		mg P/L	P394154	
	SM 5310 B-2011	Organic Carbon	16		mg C/L	P394646	
2226433	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.026		mg P/L	P394103	
2226466	EPA 200.7 Rev. 4.4	Calcium	51.9		mg/L	P394173	
		Iron	520		ug/L	P394173	
		Magnesium	33.1		mg/L	P394173	
		Manganese	22.6		ug/L	P394173	
		Zinc	6.5	I	ug/L	P394173	
	EPA 200.8 Rev. 5.4	Aluminum	212		ug/L	P394173	
		Antimony	0.12	I	ug/L	P394173	
		Arsenic	0.98		ug/L	P394173	
		Beryllium	0.031	I	ug/L	P394173	
		Cadmium	0.020	U	ug/L	P394173	
		Chromium	0.62	I	ug/L	P394173	
		Copper	4.39		ug/L	P394173	
		Lead	0.34	I	ug/L	P394173	
		Nickel	0.50	U	ug/L	P394173	
		Selenium	0.20	U	ug/L	P394173	
		Silver	0.010	U	ug/L	P394173	
		Thallium	0.10	U	ug/L	P394173	

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: Greenfield CR at Hodges Rd. **Collection Date/Time: 02/22/2021 10:25**

Field ID: G2NE1145 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226434	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P394119	
	EPA 300.0 Rev. 2.1	Chloride	44	A	mg Cl/L	P394241	
		Sulfate	43	A	mg SO4/L	P394243	
	SM 2120 B-2011	Color (true)	67	A	PCU	P394123	
	SM 2320 B-2011	Total Alkalinity	88		mg CaCO3/L	P394419	
	SM 2540 C-2011	TDS	264		mg/L	P394602	
	SM 2540 D-2011	TSS	2	I	mg/L	P394529	
	SM 4500 F-C-2011	Fluoride	0.074	I	mg F/L	P394357	
2226435	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P394300	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83		mg N/L	P394205	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.23		mg N/L	P394136	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P394154	
	SM 5310 B-2011	Organic Carbon	15		mg C/L	P394646	
2226436	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.040		mg P/L	P394103	
2226467	EPA 200.7 Rev. 4.4	Barium	38.3		ug/L	P394173	
		Calcium	54.3		mg/L	P394173	
		Iron	260		ug/L	P394173	
		Magnesium	7.23		mg/L	P394173	
		Manganese	19.5		ug/L	P394173	
		Potassium	2.7		mg/L	P394173	
		Sodium	25.1		mg/L	P394173	
		Zinc	5.9	I	ug/L	P394173	
	EPA 200.8 Rev. 5.4	Aluminum	181		ug/L	P394173	
		Antimony	0.081	I	ug/L	P394173	
		Arsenic	0.62		ug/L	P394173	
		Beryllium	0.024	I	ug/L	P394173	
		Boron**	29.6		ug/L	P394173	
		Cadmium	0.020	U	ug/L	P394173	
		Chromium	0.55	I	ug/L	P394173	
		Copper	6.19		ug/L	P394173	
		Lead	0.20	U	ug/L	P394173	
		Nickel	0.50	U	ug/L	P394173	
		Selenium	0.20	U	ug/L	P394173	
		Silver	0.010	U	ug/L	P394173	
		Thallium	0.10	U	ug/L	P394173	
	SM 2340B	Hardness	165		mg/L	P394173	

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394119

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394173

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: P394173

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
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394241

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394243

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394300

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394205

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394136

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394154

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394103

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

Reference Method: EPA 8276
Batch ID: P394192

Component	Result	Code	Units
Chlordane	5.0	U	ng/L
Toxaphene	30	U	ng/L

Reference Method: EPA 8321B
Batch ID: P394025

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P394025

Component	Result	Code	Units
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B
Batch ID: P394077

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P394079

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L

Quality Assurance Report
Method Blank Results

Reference Method: EPA 8321B
Batch ID: P394079

Component	Result	Code	Units
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P394123

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P394419

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

Reference Method: SM 2540 C-2011
Batch ID: P394602

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P394603

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394529

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394530

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P394531

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394357

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: P394646

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: P394173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.6		P	85 - 115
Calcium	103		P	85 - 115
Iron	99.1		P	85 - 115
Magnesium	94.8		P	85 - 115
Manganese	97.8		P	85 - 115
Potassium	98.8		P	85 - 115
Sodium	103		P	85 - 115
Zinc	98.4		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394173

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	100		P	85 - 115
Beryllium	92.7		P	85 - 115
Boron	97.8		P	85 - 115
Cadmium	95.2		P	85 - 115
Chromium	96.4		P	85 - 115
Copper	96.8		P	85 - 115
Lead	105		P	85 - 115
Nickel	98.0		P	85 - 115
Selenium	100		P	85 - 115
Silver	104		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394241

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394243

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394300

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: P394205

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: P394136

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394154

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394103

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

Reference Method: EPA 8276
Batch ID: P394192

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlordane	73.4	86.0	P/P	56 - 117
Toxaphene	91.9	107	P/P	45 - 116

Reference Method: EPA 8321B
Batch ID: P394025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	139		P	30 - 160
2,4,5-T	107		P	30 - 160
Acetaminophen	104		P	30 - 160
Acetamiprid	112		P	30 - 160
Afidopyropen	75.2		P	30 - 160
Bentazon	89.0		P	30 - 160
Benzovindiflupyr	91.0		P	30 - 160
Carbamazepine	113		P	30 - 160
Clothianidin	116		P	30 - 160
Dinotefuran	109		P	30 - 160
Diuron	67.3		P	30 - 160
Fenuron	112		P	30 - 160
Fluridone	94.7		P	30 - 160
Hydrocodone	117		P	30 - 160
Ibuprofen	108		P	30 - 160
Imazapyr	149		P	30 - 160
Imidacloprid	126		P	30 - 160
Linuron	85.4		P	30 - 160
Mandestrobin	97.3		P	30 - 160
MCPP	123		P	30 - 160
Naproxen	49.4		P	30 - 160

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P394025

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Primidone	122		P	30 - 160
Pyraclostrobin	77.6		P	30 - 160
Thiamethoxam	123		P	30 - 160
Tolfenpyrad	50.5		P	30 - 160
Triclopyr	105		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	95.2		P	40 - 150
AMPA	87.1		P	40 - 150
Endothall	93.7		P	40 - 150
Glufosinate	109		P	40 - 150
Glyphosate	82.4		P	40 - 140
Sucralose	111		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P394079

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	114		P	30 - 160
2,4,5-T	87.1		P	30 - 160
Acetaminophen	76.0		P	30 - 160
Acetamiprid	81.0		P	30 - 160
Afidopyropen	51.2		P	30 - 160
Bentazon	64.0		P	30 - 160
Benzovindiflupyr	77.1		P	30 - 160
Carbamazepine	104		P	30 - 160
Clothianidin	99.3		P	30 - 160
Dinotefuran	85.4		P	30 - 160
Diuron	70.1		P	30 - 160
Fenuron	107		P	30 - 160
Fluridone	88.3		P	30 - 160
Hydrocodone	103		P	30 - 160
Ibuprofen	71.4		P	30 - 160
Imazapyr	81.8		P	30 - 160
Imidacloprid	104		P	30 - 160
Linuron	74.2		P	30 - 160
Mandestrobin	84.6		P	30 - 160
MCPP	95.8		P	30 - 160
Naproxen	49.5		P	30 - 160
Primidone	101		P	30 - 160
Pyraclostrobin	80.5		P	30 - 160
Thiamethoxam	99.4		P	30 - 160
Tolfenpyrad	52.0		P	30 - 160
Triclopyr	82.9		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P394123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P394123

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.6		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P394419

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.7		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394646

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.3		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226395	Barium	108		P	80 - 120
2226395	Calcium	110		P	80 - 120
2226395	Iron	107		P	80 - 120
2226395	Magnesium	103		P	80 - 120
2226395	Manganese	106		P	80 - 120
2226395	Potassium	105		P	80 - 120
2226395	Sodium	109		P	80 - 120
2226395	Zinc	107		P	80 - 120
2226817	Barium	102	103	P/P	80 - 120
2226817	Calcium	104		P	80 - 120
2226817	Iron	103	106	P/P	80 - 120
2226817	Magnesium	96.4		P	80 - 120
2226817	Manganese	102	103	P/P	80 - 120
2226817	Potassium	104	107	P/P	80 - 120
2226817	Sodium	103	107	P/P	80 - 120
2226817	Zinc	113	113	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394173

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226395	Aluminum	104		P	80 - 120
2226395	Antimony	98.2		P	80 - 120
2226395	Arsenic	98.6		P	80 - 120
2226395	Beryllium	92.4		P	80 - 120
2226395	Boron	101		P	80 - 120
2226395	Cadmium	96.3		P	80 - 120
2226395	Chromium	95.8		P	80 - 120
2226395	Copper	97.4		P	80 - 120
2226395	Lead	105		P	80 - 120
2226395	Nickel	96.7		P	80 - 120
2226395	Selenium	95.1		P	80 - 120
2226395	Silver	104		P	80 - 120
2226395	Thallium	105		P	80 - 120
2226817	Aluminum	97.5	98.3	P/P	80 - 120
2226817	Antimony	98.4	99.2	P/P	80 - 120
2226817	Arsenic	97.1	97.7	P/P	80 - 120
2226817	Beryllium	90.9	98.3	P/P	80 - 120
2226817	Boron	98.1	99.5	P/P	80 - 120
2226817	Cadmium	94.3	96.9	P/P	80 - 120
2226817	Chromium	94.8	95.8	P/P	80 - 120
2226817	Copper	90.4	91.9	P/P	80 - 120
2226817	Lead	102	103	P/P	80 - 120
2226817	Nickel	93.3	93.7	P/P	80 - 120
2226817	Selenium	96.3	97.4	P/P	80 - 120
2226817	Silver	103	103	P/P	80 - 120
2226817	Thallium	102	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394241

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226363	Chloride	102		P	90 - 110
2226434	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394243

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226363	Sulfate	100		P	90 - 110
2226434	Sulfate	107		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226337	Bromide	95.5	93.9	P/P	90 - 110
2226988	Bromide	95.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226522	Ammonia-N	97.2	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226418	Kjeldahl Nitrogen	104	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226418	NO2NO3-N	97.5	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394154

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226415	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226419	O-Phosphate-P	94.6	94.4	P/P	90 - 110

Reference Method: EPA 8276
Batch ID: P394192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226629	Chlordane	111	125	P/P	47 - 128

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8276
Batch ID: P394192

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226629	Toxaphene	133	159	P/P	11 - 163

Reference Method: EPA 8321B
Batch ID: P394025

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225913	2,4-D	105	105	P/P	30 - 160
2225913	2,4,5-T	73.8	92.6	P/P	30 - 160
2225913	Acetaminophen	146	101	P/P	30 - 160
2225913	Acetamiprid	86.8	86.9	P/P	30 - 160
2225913	Afidopyropen	56.5	63.6	P/P	30 - 160
2225913	Bentazon	29.0	32.7	F/P	30 - 160
2225913	Benzovindiflupyr	68.7	66.5	P/P	30 - 160
2225913	Carbamazepine	79.2	81.0	P/P	30 - 160
2225913	Clothianidin	99.4	99.9	P/P	30 - 160
2225913	Dinotefuran	118	123	P/P	30 - 160
2225913	Diuron	46.0	46.6	P/P	30 - 160
2225913	Fenuron	67.5	73.3	P/P	30 - 160
2225913	Fluridone	60.9	64.4	P/P	30 - 160
2225913	Hydrocodone	106	116	P/P	30 - 160
2225913	Ibuprofen	79.2	74.1	P/P	30 - 160
2225913	Imazapyr	101	96.0	P/P	30 - 160
2225913	Imidacloprid	138	146	P/P	30 - 160
2225913	Linuron	63.2	66.5	P/P	30 - 160
2225913	Mandestrobin	75.9	75.7	P/P	30 - 160
2225913	MCPP	87.4	91.1	P/P	30 - 160
2225913	Naproxen	55.5	80.8	P/P	30 - 160
2225913	Primidone	90.6	105	P/P	30 - 160
2225913	Pyraclostrobin	67.5	65.1	P/P	30 - 160
2225913	Thiamethoxam	137	143	P/P	30 - 160
2225913	Tolfenpyrad	54.7	42.7	P/P	30 - 160
2225913	Triclopyr	78.7	89.3	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P394077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226151	Acesulfame K	17.1	17.8	F/F	40 - 150
2226151	AMPA	104	102	P/P	40 - 150
2226151	Endothall	97.1	97.8	P/P	40 - 150
2226151	Glufosinate	106	102	P/P	40 - 150
2226151	Glyphosate	62.9	90.5	P/P	40 - 140
2226151	Sucralose	94.6	91.1	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P394079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227057	2,4-D	91.2	81.8	P/P	30 - 160
2227057	2,4,5-T	77.4	73.4	P/P	30 - 160
2227057	Acetaminophen	94.8	94.8	P/P	30 - 160
2227057	Acetamiprid	91.2	103	P/P	30 - 160

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P394079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227057	Afidopyropen	74.9	77.0	P/P	30 - 160
2227057	Benzovindiflupyr	72.0	71.1	P/P	30 - 160
2227057	Clothianidin	101	88.7	P/P	30 - 160
2227057	Dinotefuran	114	113	P/P	30 - 160
2227057	Diuron	53.6	50.8	P/P	30 - 160
2227057	Fenuron	74.0	64.4	P/P	30 - 160
2227057	Fluridone	48.9	74.1	P/P	30 - 160
2227057	Hydrocodone	100	94.1	P/P	30 - 160
2227057	Ibuprofen	51.7	62.0	P/P	30 - 160
2227057	Imazapyr	81.8	64.3	P/P	30 - 160
2227057	Imidacloprid	138	139	P/P	30 - 160
2227057	Linuron	53.8	53.9	P/P	30 - 160
2227057	Mandestrobin	78.3	81.7	P/P	30 - 160
2227057	MCPP	78.5	81.6	P/P	30 - 160
2227057	Naproxen	58.9	54.8	P/P	30 - 160
2227057	Primidone	92.1	82.5	P/P	30 - 160
2227057	Pyraclostrobin	79.5	79.8	P/P	30 - 160
2227057	Thiamethoxam	116	112	P/P	30 - 160
2227057	Tolfenpyrad	58.4	61.7	P/P	30 - 160
2227057	Triclopyr	76.0	80.8	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P394357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226434	Fluoride	101	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P394646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226372	Organic Carbon	95.6	96.4	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226414	Turbidity	3.38	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226817	Barium	1.05	Spike	P	0 - 20
2226817	Calcium	1.25	Spike	P	0 - 20
2226817	Iron	2.07	Spike	P	0 - 20
2226817	Magnesium	2.72	Spike	P	0 - 20
2226817	Manganese	1.39	Spike	P	0 - 20
2226817	Potassium	2.42	Spike	P	0 - 20
2226817	Sodium	2.40	Spike	P	0 - 20
2226817	Zinc	0.122	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394173

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226817	Aluminum	0.877	Spike	P	0 - 20
2226817	Antimony	0.893	Spike	P	0 - 20
2226817	Arsenic	0.594	Spike	P	0 - 20
2226817	Beryllium	7.54	Spike	P	0 - 20
2226817	Boron	1.34	Spike	P	0 - 20
2226817	Cadmium	2.70	Spike	P	0 - 20
2226817	Chromium	1.05	Spike	P	0 - 20
2226817	Copper	1.26	Spike	P	0 - 20
2226817	Lead	0.758	Spike	P	0 - 20
2226817	Nickel	0.379	Spike	P	0 - 20
2226817	Selenium	1.18	Spike	P	0 - 20
2226817	Silver	0.317	Spike	P	0 - 20
2226817	Thallium	1.55	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394241

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226434	Chloride	2.07	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394243

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226434	Sulfate	2.38	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226337	Bromide	1.65	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226522	Ammonia-N	0.181	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226418	Kjeldahl Nitrogen	1.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226418	NO2NO3-N	1.02	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394154

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226415	Total-P	0.213	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226419	O-Phosphate-P	0.198	Spike	P	0 - 20

Reference Method: EPA 8276
Batch ID: P394192

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226629	Chlordane	11.3	Spike	P	0 - 30
2226629	Toxaphene	17.8	Spike	P	0 - 30
LFB	Chlordane	15.8	LCS	P	0 - 30
LFB	Toxaphene	15.0	LCS	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P394025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225913	2,4-D	0.460	Spike	P	0 - 30
2225913	2,4,5-T	22.6	Spike	P	0 - 30
2225913	Acetaminophen	36.4	Spike	F	0 - 30
2225913	Acetamiprid	0.0174	Spike	P	0 - 30
2225913	Afidopyropen	11.8	Spike	P	0 - 30
2225913	Bentazon	5.74	Spike	P	0 - 30
2225913	Benzovindiflupyr	3.34	Spike	P	0 - 30
2225913	Carbamazepine	2.37	Spike	P	0 - 30
2225913	Clothianidin	0.486	Spike	P	0 - 30
2225913	Dinotefuran	4.58	Spike	P	0 - 30
2225913	Diuron	1.40	Spike	P	0 - 30
2225913	Fenuron	6.03	Spike	P	0 - 30
2225913	Fluridone	5.56	Spike	P	0 - 30
2225913	Hydrocodone	8.94	Spike	P	0 - 30
2225913	Ibuprofen	6.66	Spike	P	0 - 30
2225913	Imazapyr	5.24	Spike	P	0 - 30
2225913	Imidacloprid	5.24	Spike	P	0 - 30
2225913	Linuron	5.15	Spike	P	0 - 30
2225913	Mandestrobin	0.257	Spike	P	0 - 30
2225913	MCPP	3.83	Spike	P	0 - 30
2225913	Naproxen	37.2	Spike	F	0 - 30
2225913	Primidone	14.9	Spike	P	0 - 30
2225913	Pyraclostrobin	3.59	Spike	P	0 - 30
2225913	Thiamethoxam	4.11	Spike	P	0 - 30
2225913	Tolfenpyrad	24.7	Spike	P	0 - 30
2225913	Triclopyr	12.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226151	Acesulfame K	3.46	Spike	P	0 - 30
2226151	AMPA	1.58	Spike	P	0 - 30
2226151	Endothall	0.687	Spike	P	0 - 30
2226151	Glufosinate	4.41	Spike	P	0 - 30
2226151	Glyphosate	29.3	Spike	P	0 - 30
2226151	Sucralose	3.65	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P394079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227057	2,4-D	9.45	Spike	P	0 - 30
2227057	2,4,5-T	5.39	Spike	P	0 - 30
2227057	Acetaminophen	0.00359	Spike	P	0 - 30
2227057	Acetamiprid	12.0	Spike	P	0 - 30
2227057	Afidopyropen	2.82	Spike	P	0 - 30
2227057	Bentazon	15.4	Spike	P	0 - 30
2227057	Benzovindiflupyr	1.35	Spike	P	0 - 30

Quality Assurance Report
Precision

Reference Method: EPA 8321B
Batch ID: P394079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227057	Carbamazepine	1.80	Spike	P	0 - 30
2227057	Clothianidin	12.4	Spike	P	0 - 30
2227057	Dinotefuran	0.775	Spike	P	0 - 30
2227057	Diuron	4.40	Spike	P	0 - 30
2227057	Fenuron	13.9	Spike	P	0 - 30
2227057	Fluridone	26.5	Spike	P	0 - 30
2227057	Hydrocodone	6.38	Spike	P	0 - 30
2227057	Ibuprofen	18.1	Spike	P	0 - 30
2227057	Imazapyr	10.5	Spike	P	0 - 30
2227057	Imidacloprid	0.158	Spike	P	0 - 30
2227057	Linuron	0.228	Spike	P	0 - 30
2227057	Mandestrobin	4.30	Spike	P	0 - 30
2227057	MCPP	3.90	Spike	P	0 - 30
2227057	Naproxen	7.23	Spike	P	0 - 30
2227057	Primidone	7.28	Spike	P	0 - 30
2227057	Pyraclostrobin	0.409	Spike	P	0 - 30
2227057	Thiamethoxam	4.03	Spike	P	0 - 30
2227057	Tolfenpyrad	5.54	Spike	P	0 - 30
2227057	Triclopyr	6.03	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P394123

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226434	Color (true)	0.720	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P394419

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226443	Total Alkalinity	2.25	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P394602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226414	TDS	0.0	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P394603

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226437	TDS	3.51	Sample	P	0 - 10

Quality Assurance Report
Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P394357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226434	Fluoride	0.953	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226372	Organic Carbon	0.568	Spike	P	0 - 20

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

Quality Assurance Report
Surrogates

Lab Sample ID: 2226462
Field Sample ID: 20030068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8276	Decachlorobiphenyl	72.7	P	29 - 92.0
EPA 8276	PCNB	86.9	P	43 - 134

Lab Sample ID: 2226463
Field Sample ID: 20030070

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	83.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	126	P	30 - 160
EPA 8321B	Carbamazepine-d10	74.6	P	30 - 160
EPA 8321B	Diuron-d6	54.2	P	30 - 160
EPA 8321B	Endothall-d6	97.5	P	40 - 160
EPA 8321B	Endothall-d6	97.5	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	79.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	79.6	P	40 - 160
EPA 8321B	Ibuprofen-d3	69.9	P	30 - 160
EPA 8321B	Primidone-d5	84.3	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160
EPA 8321B	Sucralose-d6	128	P	30 - 160

Lab Sample ID: 2226464
Field Sample ID: 20030071

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	77.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	114	P	30 - 160
EPA 8321B	Carbamazepine-d10	75.2	P	30 - 160
EPA 8321B	Diuron-d6	53.3	P	30 - 160
EPA 8321B	Endothall-d6	105	P	40 - 160
EPA 8321B	Endothall-d6	105	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	88.7	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	88.7	P	40 - 160
EPA 8321B	Ibuprofen-d3	75.7	P	30 - 160
EPA 8321B	Primidone-d5	80.3	P	30 - 160
EPA 8321B	Sucralose-d6	124	P	30 - 160
EPA 8321B	Sucralose-d6	124	P	30 - 160

Lab Sample ID: 2226465
Field Sample ID: 20030674

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	96.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	87.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	90.2	P	30 - 160
EPA 8321B	Diuron-d6	73.5	P	30 - 160
EPA 8321B	Endothall-d6	97.6	P	40 - 160
EPA 8321B	Endothall-d6	97.6	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	90.9	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	90.9	P	40 - 160
EPA 8321B	Ibuprofen-d3	58.6	P	30 - 160
EPA 8321B	Primidone-d5	90.2	P	30 - 160
EPA 8321B	Sucralose-d6	124	P	30 - 160

Quality Assurance Report
Surrogates

Lab Sample ID: 2226465
Field Sample ID: 20030674

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Sucralose-d6	124	P	30 - 160

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A103726
Included Lab Sample IDs: 2226433, 2226436, 2226439, 2226442, 2226445

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.9	98.5	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A103729
Included Lab Sample IDs: 2226434, 2226437, 2226440, 2226443

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

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A103730
Included Lab Sample IDs: 2226431, 2226434, 2226437, 2226440, 2226443

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A103734
Included Lab Sample IDs: 2226431

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	97.0	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A103736
Included Lab Sample IDs: 2226432, 2226435, 2226438, 2226441, 2226444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.0	99.0	P/P	90 - 110
NO2NO3-N	99.5	98.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A103737
Included Lab Sample IDs: 2226434, 2226437, 2226440, 2226443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	100	P/P	90 - 110
Chloride	99.6	101	P/P	90 - 110
Sulfate	98.8	100	P/P	90 - 110
Sulfate	100	99.5	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A103740
Included Lab Sample IDs: 2226463, 2226464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	118	105	P/P	50 - 150
2,4,5-T	102	96.3	P/P	50 - 150
Acetaminophen	111	112	P/P	60 - 160
Acetamiprid	120	115	P/P	50 - 150
Afidopyropen	89.7	101	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A103740
Included Lab Sample IDs: 2226463, 2226464

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	116	118	P/P	50 - 160
Bentazon	127	116	P/P	50 - 160
Benzovindiflupyr	106	106	P/P	50 - 160
Carbamazepine	110	114	P/P	60 - 150
Clothianidin	108	105	P/P	60 - 150
Dinotefuran	108	102	P/P	50 - 150
Diuron	106	108	P/P	60 - 160
Fenuron	102	107	P/P	60 - 150
Fluridone	124	120	P/P	60 - 160
Hydrocodone	109	106	P/P	60 - 150
Ibuprofen	99.3	100	P/P	50 - 160
Imazapyr	81.2	80.3	P/P	50 - 160
Imidacloprid	98.6	100	P/P	60 - 150
Linuron	113	112	P/P	60 - 150
Mandestrobin	113	111	P/P	50 - 150
MCPP	104	99.8	P/P	50 - 150
Naproxen	71.5	95.6	P/P	50 - 160
Primidone	107	108	P/P	60 - 150
Pyraclostrobin	96.9	98.4	P/P	60 - 150
Thiamethoxam	105	119	P/P	50 - 150
Tolfenpyrad	114	115	P/P	60 - 150
Triclopyr	111	93.6	P/P	50 - 150

Reference Method: EPA 8321B
Run ID: A103745
Included Lab Sample IDs: 2226463, 2226464, 2226465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	86.9	93.3	P/P	60 - 160
AMPA	91.8	90.3	P/P	60 - 160
Endothall	101	102	P/P	60 - 160
Glufosinate	117	96.0	P/P	60 - 160
Glyphosate	129	116	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A103747
Included Lab Sample IDs: 2226432, 2226435, 2226438, 2226441

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

Reference Method: EPA 8321B
Run ID: A103756
Included Lab Sample IDs: 2226465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	89.8	P/P	50 - 150
2,4,5-T	106	92.8	P/P	50 - 150
Acetaminophen	91.8	93.2	P/P	60 - 160
Acetamiprid	113	110	P/P	50 - 150
Afidopyropen	107	83.7	P/P	50 - 150

Quality Assurance Report
Calibration Verification

Reference Method: EPA 8321B
Run ID: A103756
Included Lab Sample IDs: 2226465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bentazon	98.0	103	P/P	50 - 160
Benzovindiflupyr	112	98.4	P/P	50 - 160
Carbamazepine	112	108	P/P	60 - 150
Clothianidin	98.6	98.5	P/P	60 - 150
Dinotefuran	106	100	P/P	50 - 150
Diuron	117	120	P/P	60 - 160
Fenuron	108	99.6	P/P	60 - 150
Fluridone	125	116	P/P	60 - 160
Hydrocodone	117	99.6	P/P	60 - 150
Ibuprofen	81.3	99.8	P/P	50 - 160
Imazapyr	89.2	87.4	P/P	50 - 160
Imidacloprid	100	102	P/P	60 - 150
Linuron	111	105	P/P	60 - 150
Mandestrobin	115	110	P/P	50 - 150
MCPP	108	99.1	P/P	50 - 150
Naproxen	94.7	99.5	P/P	50 - 160
Primidone	101	95.0	P/P	60 - 150
Pyraclostrobin	119	109	P/P	60 - 150
Thiamethoxam	102	101	P/P	50 - 150
Tolfenpyrad	120	118	P/P	60 - 150
Triclopyr	99.2	98.3	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A103767
Included Lab Sample IDs: 2226444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A103798
Included Lab Sample IDs: 2226432, 2226435, 2226438, 2226441, 2226444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A103809
Included Lab Sample IDs: 2226432, 2226435, 2226438, 2226441, 2226444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.7	98.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103829
Included Lab Sample IDs: 2226466, 2226467, 2226468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	106	101	P/P	90 - 110
Calcium	103	101	P/P	90 - 110
Iron	101	98.9	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103829
Included Lab Sample IDs: 2226466, 2226467, 2226468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	99.3	97.3	P/P	90 - 110
Manganese	104	101	P/P	90 - 110
Potassium	100	98.9	P/P	90 - 110
Sodium	102	99.9	P/P	90 - 110

Reference Method: EPA 8276
Run ID: A103833
Included Lab Sample IDs: 2226462

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chlordane	95.9		P	80 - 120
Toxaphene	96.2		P	80 - 120

Reference Method: SM 4500 F-C-2011
Run ID: A103840
Included Lab Sample IDs: 2226431, 2226434, 2226437, 2226440, 2226443

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A103850
Included Lab Sample IDs: 2226466, 2226467, 2226468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Zinc	95.6	106	P/P	95 - 105

Reference Method: SM 2320 B-2011
Run ID: A103855
Included Lab Sample IDs: 2226431, 2226434, 2226437, 2226440, 2226443

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	90.7	93.3	P/P	90 - 110
Total Alkalinity	93.5	90.7	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A103914
Included Lab Sample IDs: 2226463, 2226464, 2226465

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	114	114	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A103955
Included Lab Sample IDs: 2226466, 2226467, 2226468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.4	99.1	P/P	90 - 110
Antimony	97.4	97.1	P/P	90 - 110
Arsenic	98.8	99.0	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A103955
Included Lab Sample IDs: 2226466, 2226467, 2226468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	97.7	96.6	P/P	90 - 110
Boron	102	102	P/P	90 - 110
Cadmium	98.7	98.5	P/P	90 - 110
Chromium	97.4	97.8	P/P	90 - 110
Copper	97.2	97.1	P/P	90 - 110
Lead	107	108	P/P	90 - 110
Nickel	98.6	98.0	P/P	90 - 110
Selenium	99.8	99.0	P/P	90 - 110
Silver	101	101	P/P	90 - 110
Thallium	106	106	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A103961
Included Lab Sample IDs: 2226432, 2226435, 2226438, 2226441, 2226444

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	94.9	P/P	90 - 110
Organic Carbon	95.6	95.7	P/P	90 - 110
Organic Carbon	95.7	95.6	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		
							LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity							3.38	
EPA 200.7 Rev. 4.4	Barium	98.6		108	102	103			1.05
	Calcium	103		110	104				1.25
	Iron	99.1		107	103	106			2.07
	Magnesium	94.8		103	96.4				2.72
	Manganese	97.8		106	102	103			1.39
	Potassium	98.8		105	104	107			2.42
	Sodium	103		109	103	107			2.40
	Zinc	98.4		107	113	113			0.122
EPA 200.8 Rev. 5.4	Aluminum	100		97.5	98.3	104			0.877
	Antimony	101		98.4	99.2	98.2			0.893
	Arsenic	100		97.1	97.7	98.6			0.594
	Beryllium	92.7		90.9	98.3	92.4			7.54
	Boron	97.8		98.1	99.5	101			1.34
	Cadmium	95.2		94.3	96.9	96.3			2.70
	Chromium	96.4		94.8	95.8	95.8			1.05
	Copper	96.8		90.4	91.9	97.4			1.26
	Lead	105		102	103	105			0.758
	Nickel	98.0		93.3	93.7	96.7			0.379
	Selenium	100		96.3	97.4	95.1			1.18
	Silver	104		103	103	104			0.317
	Thallium	102		102	104	105			1.55
EPA 300.0 Rev. 2.1	Bromide	96.0		95.5	93.9	95.7			1.65
	Chloride	102		103	102			2.07	
	Sulfate	101		107	100			2.38	
EPA 350.1 Rev. 2.0	Ammonia-N	101		97.2	97.0				0.181
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107		104	102				1.21
EPA 353.2 Rev. 2.0	NO2NO3-N	99.0		97.5	98.5				1.02
EPA 365.1 Rev. 2.0	Total-P	103		104	104				0.213
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101		94.6	94.4				0.198
EPA 8276	Chlordane	86.0	73.4	111	125		15.8		11.3
	Toxaphene	91.9	107	133	159		15.0		17.8
EPA 8321B	2,4-D	139		105	105				0.460
	2,4-D	114		91.2	81.8				9.45
	2,4,5-T	107		73.8	92.6				22.6
	2,4,5-T	87.1		77.4	73.4				5.39
	Acesulfame K	95.2		17.1	17.8				3.46
	Acetaminophen	104		146	101				36.4
	Acetaminophen	76.0		94.8	94.8				0.0035
	Acetamiprid	112		86.8	86.9				0.0174
	Acetamiprid	81.0		91.2	103				12.0
	Afidopyropen	75.2		56.5	63.6				11.8
	Afidopyropen	51.2		74.9	77.0				2.82
	AMPA	87.1		104	102				1.58
	Bentazon	89.0		29.0	32.7				5.74
	Bentazon	64.0							15.4
	Benzovindiflupyr	91.0		68.7	66.5				3.34
	Benzovindiflupyr	77.1		72.0	71.1				1.35
	Carbamazepine	113		79.2	81.0				2.37
	Carbamazepine	104							1.80
	Clothianidin	116		99.4	99.9				0.486
	Clothianidin	99.3		101	88.7				12.4
	Dinotefuran	109		118	123				4.58
	Dinotefuran	85.4		114	113				0.775

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 8321B	Diuron	67.3	46.0	46.6			1.40
	Diuron	70.1	53.6	50.8			4.40
	Endothall	93.7	97.1	97.8			0.687
	Fenuron	112	67.5	73.3			6.03
	Fenuron	107	74.0	64.4			13.9
	Fluridone	94.7	60.9	64.4			5.56
	Fluridone	88.3	48.9	74.1			26.5
	Glufosinate	109	106	102			4.41
	Glyphosate	82.4	62.9	90.5			29.3
	Hydrocodone	117	106	116			8.94
	Hydrocodone	103	100	94.1			6.38
	Ibuprofen	108	79.2	74.1			6.66
	Ibuprofen	71.4	51.7	62.0			18.1
	Imazapyr	149	101	96.0			5.24
	Imazapyr	81.8	81.8	64.3			10.5
	Imidacloprid	126	138	146			5.24
	Imidacloprid	104	138	139			0.158
	Linuron	85.4	63.2	66.5			5.15
	Linuron	74.2	53.8	53.9			0.228
	Mandestrobin	97.3	75.9	75.7			0.257
	Mandestrobin	84.6	78.3	81.7			4.30
	MCPP	123	87.4	91.1			3.83
	MCPP	95.8	78.5	81.6			3.90
	Naproxen	49.4	55.5	80.8			37.2
	Naproxen	49.5	58.9	54.8			7.23
	Primidone	122	90.6	105			14.9
	Primidone	101	92.1	82.5			7.28
	Pyraclostrobin	77.6	67.5	65.1			3.59
	Pyraclostrobin	80.5	79.5	79.8			0.409
	Sucralose	111	94.6	91.1			3.65
	Thiamethoxam	123	137	143			4.11
	Thiamethoxam	99.4	116	112			4.03
	Tolfenpyrad	50.5	54.7	42.7			24.7
	Tolfenpyrad	52.0	58.4	61.7			5.54
	Triclopyr	105	78.7	89.3			12.5
	Triclopyr	82.9	76.0	80.8			6.03
SM 2120 B-2011	Color (true)	98.6				0.720	
SM 2320 B-2011	Total Alkalinity	94.7				2.25	
SM 2540 C-2011	TDS					0.0	
	TDS					3.51	
SM 4500 F-C-2011	Fluoride	98.6	101	102			0.953
SM 5310 B-2011	Organic Carbon	95.3	95.6	96.4			0.568

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2226431, 2226434, 2226437, 2226440, 2226443
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2226466, 2226467, 2226468
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2226466, 2226467, 2226468
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2226431

Reference Method Descriptions

Method	Description	Associated Samples
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2226434, 2226437, 2226440, 2226443
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2226434, 2226437, 2226440, 2226443
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2226432, 2226435, 2226438, 2226441, 2226444
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2226432, 2226435, 2226438, 2226441, 2226444
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2226432, 2226435, 2226438, 2226441, 2226444
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2226432, 2226435, 2226438, 2226441, 2226444
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2226433, 2226436, 2226439, 2226442, 2226445
EPA 8276	Organochlorine pesticides in water matrices by GC/MS with Negative Chemical Ionization	2226462
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2226463, 2226464, 2226465
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2226463, 2226464, 2226465
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2226434, 2226437, 2226440, 2226443
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2226431, 2226434, 2226437, 2226440, 2226443
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2226467, 2226468
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2226434, 2226437, 2226440, 2226443
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2226431, 2226434, 2226437, 2226440, 2226443
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2226431, 2226434, 2226437, 2226440, 2226443
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2226432, 2226435, 2226438, 2226441, 2226444

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	02/23/2021			02/23/2021 15:14	Yen Ta	2226431, 2226434, 2226437, 2226440, 2226443
EPA 200.7 Rev. 4.4	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/01/2021 19:08	Betina Topolski	2226466
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/01/2021 19:24	Betina Topolski	2226467
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/01/2021 19:31	Betina Topolski	2226468
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/02/2021 12:19	Betina Topolski	2226466
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/02/2021 12:22	Betina Topolski	2226467
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/02/2021 12:26	Betina Topolski	2226468
EPA 200.8 Rev. 5.4	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/08/2021 16:54	Alexander Thompson	2226466
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/08/2021 17:01	Alexander Thompson	2226467
	02/23/2021	02/24/2021 16:30	Elliott D. Healy	03/08/2021 17:09	Alexander Thompson	2226468
EPA 300.0 Rev. 2.1	02/23/2021			02/24/2021 20:42	Lipi Saha	2226434
	02/23/2021			02/24/2021 23:44	Lipi Saha	2226437
	02/23/2021			02/24/2021 23:56	Lipi Saha	2226440
	02/23/2021			02/25/2021 00:08	Lipi Saha	2226443
	02/23/2021			02/26/2021 15:08	Lipi Saha	2226431
EPA 350.1 Rev. 2.0	02/23/2021			02/27/2021 13:38	Ping Hua	2226444
	02/23/2021			02/27/2021 13:42	Ping Hua	2226432
	02/23/2021			02/27/2021 13:43	Ping Hua	2226435
	02/23/2021			02/27/2021 13:45	Ping Hua	2226438
	02/23/2021			02/27/2021 13:46	Ping Hua	2226441
EPA 351.2 Rev. 2.0	02/23/2021	02/25/2021 12:02	Yen Ta	02/26/2021 14:33	Virginia P. Brown	2226432
	02/23/2021	02/25/2021 12:02	Yen Ta	02/26/2021 14:34	Virginia P. Brown	2226435
	02/23/2021	02/25/2021 12:02	Yen Ta	02/26/2021 14:35	Virginia P. Brown	2226438
	02/23/2021	02/25/2021 12:02	Yen Ta	02/26/2021 14:37	Virginia P. Brown	2226441
	02/23/2021	02/25/2021 12:02	Yen Ta	02/26/2021 14:38	Virginia P. Brown	2226444
EPA 353.2 Rev. 2.0	02/23/2021			02/24/2021 08:58	Beverly Y. Sanders	2226432
	02/23/2021			02/24/2021 08:59	Beverly Y. Sanders	2226435
	02/23/2021			02/24/2021 09:00	Beverly Y. Sanders	2226438
	02/23/2021			02/24/2021 09:01	Beverly Y. Sanders	2226441
	02/23/2021			02/24/2021 09:46	Beverly Y. Sanders	2226444
EPA 365.1 Rev. 2.0	02/23/2021	02/24/2021 11:30	Shengyu Wang	02/24/2021 15:41	Shengyu Wang	2226432
	02/23/2021	02/24/2021 11:30	Shengyu Wang	02/24/2021 15:42	Shengyu Wang	2226435
	02/23/2021	02/24/2021 11:30	Shengyu Wang	02/24/2021 15:43	Shengyu Wang	2226438
	02/23/2021	02/24/2021 11:30	Shengyu Wang	02/24/2021 15:44	Shengyu Wang	2226441
	02/23/2021	02/24/2021 11:30	Shengyu Wang	02/25/2021 12:29	Shengyu Wang	2226444
EPA 365.1 Rev. 2.0 dissolved	02/23/2021			02/23/2021 13:59	Lipi Saha	2226433, 2226436
	02/23/2021			02/23/2021 14:00	Lipi Saha	2226439
	02/23/2021			02/23/2021 14:01	Lipi Saha	2226442
	02/23/2021			02/23/2021 14:02	Lipi Saha	2226445

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8276	02/23/2021	02/24/2021 11:00	Fe-Val Siddell	03/02/2021 07:48	Arthur Maknenko	2226462
EPA 8321B	02/23/2021	02/23/2021 13:00	Hoor Shaik	02/24/2021 06:50	Juyoung Kim	2226463
	02/23/2021	02/23/2021 13:00	Hoor Shaik	02/24/2021 07:24	Juyoung Kim	2226464
	02/23/2021	02/23/2021 13:00	Hoor Shaik	02/24/2021 09:13	Juyoung Kim	2226463
	02/23/2021	02/23/2021 16:30	Rebecca Ware	02/23/2021 19:47	Rebecca Ware	2226463
	02/23/2021	02/23/2021 16:30	Rebecca Ware	02/23/2021 20:01	Rebecca Ware	2226464
	02/23/2021	02/23/2021 16:30	Rebecca Ware	02/23/2021 20:14	Rebecca Ware	2226465
	02/23/2021	02/23/2021 16:30	Rebecca Ware	03/04/2021 16:07	Rebecca Ware	2226463
	02/23/2021	02/23/2021 16:30	Rebecca Ware	03/04/2021 16:19	Rebecca Ware	2226464
	02/23/2021	02/23/2021 16:30	Rebecca Ware	03/04/2021 16:30	Rebecca Ware	2226465
	02/23/2021	02/24/2021 15:00	Hoor Shaik	02/25/2021 01:36	Juyoung Kim	2226465
	02/23/2021	02/24/2021 15:00	Hoor Shaik	02/25/2021 10:20	Juyoung Kim	2226465
SM 2120 B-2011	02/23/2021			02/23/2021 16:23	Benjamin T. Nordmann	2226434
	02/23/2021			02/23/2021 16:24	Benjamin T. Nordmann	2226437, 2226440
	02/23/2021			02/23/2021 16:25	Benjamin T. Nordmann	2226443
SM 2320 B-2011	02/23/2021			03/02/2021 12:26	Dale L. Simmons	2226443
	02/23/2021			03/02/2021 13:04	Dale L. Simmons	2226434
	02/23/2021			03/02/2021 13:17	Dale L. Simmons	2226437
	02/23/2021			03/02/2021 13:29	Dale L. Simmons	2226440
	02/23/2021			03/02/2021 14:54	Dale L. Simmons	2226431
SM 2340B	02/23/2021			03/01/2021 19:24	Betina Topolski	2226467
	02/23/2021			03/01/2021 19:31	Betina Topolski	2226468
SM 2540 C-2011	02/23/2021			02/26/2021 14:36	Yijie Li	2226434, 2226437, 2226440, 2226443
SM 2540 D-2011	02/23/2021			02/26/2021 14:36	Yijie Li	2226431, 2226434, 2226437, 2226440, 2226443
SM 4500 F-C-2011	02/23/2021			02/25/2021 01:28	Dale L. Simmons	2226434
	02/23/2021			02/25/2021 03:24	Dale L. Simmons	2226437
	02/23/2021			02/25/2021 03:37	Dale L. Simmons	2226440
	02/23/2021			02/25/2021 03:49	Dale L. Simmons	2226443
	02/23/2021			02/25/2021 05:05	Dale L. Simmons	2226431
SM 5310 B-2011	02/23/2021			03/08/2021 23:40	Madeline Gruver	2226435
	02/23/2021			03/09/2021 02:27	Madeline Gruver	2226432
	02/23/2021			03/09/2021 02:57	Madeline Gruver	2226438
	02/23/2021			03/09/2021 03:08	Madeline Gruver	2226441
	02/23/2021			03/09/2021 03:18	Madeline Gruver	2226444