

Chemical Analysis Report

NW-DIST-2021-02-19-01

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

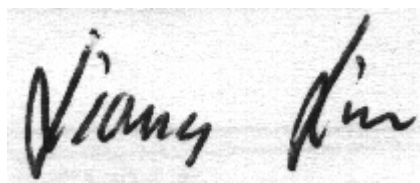
Event Description: **Escambia Bay Whaler Run**
Request ID: **RQ-2021-01-18-46**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Liang Lin, Environmental Administrator

Date Certified: 12-MAR-2021 18:41

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Bayou Texar near Baars Park

Collection Date/Time: 02/18/2021 10:05

Field ID: G4NW0516

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226175	EPA 180.1 Rev. 2.0	Turbidity	26	A	NTU	P394031	
	EPA 300.0 Rev. 2.1	Bromide	0.027	I	mg Br/L	P394335	
	SM 2320 B-2011	Total Alkalinity	13		mg CaCO3/L	P394364	
	SM 2540 D-2011	TSS	12		mg/L	P394344	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P394524	
2226177	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P394189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	I	mg N/L	P394084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.28		mg N/L	P394076	
	EPA 365.1 Rev. 2.0	Total-P	0.037		mg P/L	P394060	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P394610	
2226179	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394024	
2226205	EPA 8321B	2,4-D	0.012		ug/L	P394025	
		Acesulfame K	0.10	U	ug/L	P394077	MS
		2,4,5-T	0.0040	U	ug/L	P394025	
		AMPA	0.10	U	ug/L	P394077	
		Sucralose	0.17		ug/L	P394077	
		Acetaminophen**	0.012	I	ug/L	P394025	RPD
		Acetamiprid**	0.018		ug/L	P394025	
		Endothall	0.25	U	ug/L	P394077	
		Glufosinate	0.10	U	ug/L	P394077	
		Glyphosate	0.10	U	ug/L	P394077	
		Afidopyropen**	0.0020	U	ug/L	P394025	
		Bentazon	8.0E-04	U	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**	0.0020	U	ug/L	P394025	
		Diuron	0.0023	I	ug/L	P394025	
		Fenuron	0.016	U	ug/L	P394025	
		Fluridone**	8.0E-04	U	ug/L	P394025	
		Imazapyr**	0.0040	U	ug/L	P394025	
		Hydrocodone**	0.0020	U	ug/L	P394025	
		Ibuprofen**	0.020	U	ug/L	P394025	
		Imidacloprid	0.032		ug/L	P394025	
		Linuron	0.0040	U	ug/L	P394025	
		Mandestrobin**	0.0020	U	ug/L	P394025	
		MCPP	0.0020	U	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	
		Thiamethoxam**	0.0020	U	ug/L	P394025	
		Tolfenpyrad**	0.0020	U	ug/L	P394025	
		Triclopyr**	0.0040	U	ug/L	P394025	

Field ID: G4NW0516

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226210	EPA 200.7 Rev. 4.4	Calcium	7.40		mg/L	P394231	
		Chromium	1.7	I	ug/L	P394231	
		Iron	1.29E+03		ug/L	P394231	
		Magnesium	1.67		mg/L	P394231	
		Manganese	31.3		ug/L	P394231	
		Zinc	9.1	I	ug/L	P394231	
	EPA 200.8 Rev. 5.4	Aluminum	1.17E+03		ug/L	P394231	
		Antimony	0.26	I	ug/L	P394231	
		Arsenic	0.60	I	ug/L	P394231	
		Beryllium	0.040	U	ug/L	P394231	
		Cadmium	0.080	U	ug/L	P394231	
		Copper	1.9	I	ug/L	P394231	
		Lead	2.2		ug/L	P394231	
		Nickel	2.0	U	ug/L	P394231	
		Selenium	0.80	U	ug/L	P394231	
		Silver	0.040	U	ug/L	P394231	
		Thallium	0.40	U	ug/L	P394231	

Ref. Method and Comment:

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

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Trout Bayou

Collection Date/Time: 02/18/2021 12:30

Field ID: G4NW0443

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226169	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P394030	
	EPA 300.0 Rev. 2.1	Bromide	26		mg Br/L	P394129	
	SM 2320 B-2011	Total Alkalinity	49		mg CaCO3/L	P394162	
	SM 2540 D-2011	TSS	7	I	mg/L	P394344	
	SM 4500 F-C-2011	Fluoride	0.43	I	mg F/L	P394356	
2226171	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P394189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38	I	mg N/L	P394084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.024		mg N/L	P394076	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P394060	
	SM 5310 B-2011	Organic Carbon	4.6		mg C/L	P394374	
2226173	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P394024	

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 Texar 200 Meters above Hwy 90 Bridge Collection Date/Time: 02/18/2021 09:40

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226176	EPA 180.1 Rev. 2.0	Turbidity	2.3		NTU	P394031	
	EPA 300.0 Rev. 2.1	Bromide	30		mg Br/L	P394129	
	SM 2320 B-2011	Total Alkalinity	58		mg CaCO3/L	P394162	
	SM 2540 D-2011	TSS	3	U	mg/L	P394344	
	SM 4500 F-C-2011	Fluoride	0.61		mg F/L	P394165	
2226178	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P394189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P394207	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P394076	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P394060	
	SM 5310 B-2011	Organic Carbon	2.8		mg C/L	P394610	
2226180	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P394024	
2226206	EPA 8321B	2,4-D	0.0095		ug/L	P394025	
		Acesulfame K	0.10	U	ug/L	P394077	MS
		2,4,5-T	0.0040	U	ug/L	P394025	
		AMPA	0.10	UJ	ug/L	P394077	SUR
		Sucralose	0.056		ug/L	P394077	
		Acetaminophen**	0.0080	U	ug/L	P394025	RPD
		Endothall	0.25	U	ug/L	P394077	
		Acetamiprid**	0.0020	U	ug/L	P394025	
		Glufosinate	0.10	UJ	ug/L	P394077	SUR
		Glyphosate	0.10	UJ	ug/L	P394077	SUR
		Afidopyropen**	0.0020	U	ug/L	P394025	
		Bentazon	8.0E-04	U	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**	0.0020	U	ug/L	P394025	
		Diuron	0.0020	U	ug/L	P394025	
		Fenuron	0.016	U	ug/L	P394025	
		Fluridone**	8.0E-04	U	ug/L	P394025	
		Imazapyr**	0.0040	U	ug/L	P394025	
		Hydrocodone**	0.0020	U	ug/L	P394025	
		Ibuprofen**	0.020	U	ug/L	P394025	
		Imidacloprid	0.0075	I	ug/L	P394025	
		Linuron	0.0040	U	ug/L	P394025	
		Mandestrobin**	0.0020	U	ug/L	P394025	
		MCP	0.0020	U	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	
		Thiamethoxam**	0.0020	U	ug/L	P394025	
		Tolfenpyrad**	0.0020	U	ug/L	P394025	
		Triclopyr**	0.0040	U	ug/L	P394025	

Field ID: G4NW0402

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226211	EPA 200.7 Rev. 4.4	Calcium	180		mg/L	P394231	
		Chromium	4.3	I	ug/L	P394231	
		Iron	90	U	ug/L	P394231	
		Magnesium	536		mg/L	P394231	
		Manganese	19		ug/L	P394231	
		Zinc	15	U	ug/L	P394231	
	EPA 200.8 Rev. 5.4	Aluminum	140	I	ug/L	P394231	
		Antimony	0.20	U	ug/L	P394231	
		Arsenic	0.75	I	ug/L	P394231	
		Beryllium	0.040	U	ug/L	P394231	
		Cadmium	0.080	U	ug/L	P394231	
		Copper	1.6	U	ug/L	P394231	
		Lead	0.80	U	ug/L	P394231	
		Nickel	2.0	U	ug/L	P394231	
		Selenium	0.80	U	ug/L	P394231	
		Silver	0.040	U	ug/L	P394231	
		Thallium	0.40	U	ug/L	P394231	

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: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for calcium and magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Judges Bayou Mouth

Collection Date/Time: 02/18/2021 11:30

Field ID: G4NW0441

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2226170	EPA 180.1 Rev. 2.0	Turbidity	7.5		NTU	P394030	
	EPA 300.0 Rev. 2.1	Bromide	3.0		mg Br/L	P394129	
	SM 2320 B-2011	Total Alkalinity	6.2		mg CaCO3/L	P394364	
	SM 2540 D-2011	TSS	4	I	mg/L	P394343	
	SM 4500 F-C-2011	Fluoride	0.087	I	mg F/L	P394163	
2226172	EPA 350.1 Rev. 2.0	Ammonia-N	0.038		mg N/L	P394189	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P394084	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.18		mg N/L	P394076	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P394060	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P394609	
2226174	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	I	mg P/L	P394024	

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: P394030

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394031

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394231

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Chromium	1.0	U	ug/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394231

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
Cadmium	0.020	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: P394129

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

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

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394189

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P394084

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P394207

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P394076

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P394060

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P394024

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P394025

Component	Result	Code	Units
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: SM 2320 B-2011

Batch ID: P394162

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

Reference Method: SM 2320 B-2011

Batch ID: P394364

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

Reference Method: SM 2540 D-2011

Batch ID: P394343

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011

Batch ID: P394344

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P394163

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011

Batch ID: P394165

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P394356

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P394524

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P394374

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

Reference Method: SM 5310 B-2011
Batch ID: P394609

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

Reference Method: SM 5310 B-2011
Batch ID: P394610

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: P394231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Chromium	96.9		P	85 - 115
Iron	103		P	85 - 115
Magnesium	102		P	85 - 115
Manganese	102		P	85 - 115
Zinc	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.6		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	96.7		P	85 - 115
Beryllium	86.7		P	85 - 115
Cadmium	98.6		P	85 - 115
Copper	92.9		P	85 - 115
Lead	104		P	85 - 115
Nickel	92.2		P	85 - 115
Selenium	95.9		P	85 - 115
Silver	101		P	85 - 115
Thallium	108		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394129

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	99.7		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: P394189

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394084

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394207

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	98.9		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394076

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394060

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394024

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.9		P	90 - 110

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
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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P394077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glufosinate	109		P	40 - 150
Glyphosate	82.4		P	40 - 140
Sucralose	111		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P394162

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.6		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P394364

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	94.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P394163

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P394165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.0		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P394356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P394524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P394374

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

Reference Method: SM 5310 B-2011
Batch ID: P394609

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.1		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P394610

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227163	Chromium	90.0	92.9	P/P	80 - 120
2227163	Iron	92.4	99.2	P/P	80 - 120
2227163	Manganese	95.1	97.7	P/P	80 - 120
2227163	Zinc	95.0	98.1	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2227163	Aluminum	94.9	95.8	P/P	70 - 130
2227163	Antimony	108	108	P/P	70 - 130
2227163	Arsenic	108	105	P/P	70 - 130
2227163	Beryllium	96.4	92.6	P/P	70 - 130
2227163	Cadmium	96.2	94.8	P/P	70 - 130
2227163	Copper	102	102	P/P	70 - 130
2227163	Lead	110	109	P/P	70 - 130
2227163	Nickel	100	98.7	P/P	70 - 130
2227163	Selenium	101	99.1	P/P	70 - 130
2227163	Silver	96.2	96.0	P/P	70 - 130
2227163	Thallium	112	113	P/P	70 - 130

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394129

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225834	Bromide	97.3	96.9	P/P	90 - 110
2226053	Bromide	100		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: P394189

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226171	Ammonia-N	97.8	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394084

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224472	Kjeldahl Nitrogen	94.5	94.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394207

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226488	Kjeldahl Nitrogen	101	92.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P394076

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225540	NO2NO3-N	98.9	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P394060

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226005	Total-P	110	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P394024

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226173	O-Phosphate-P	99.2	99.3	P/P	90 - 110

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	MCP	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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P394077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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: SM 4500 F-C-2011
Batch ID: P394163

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226073	Fluoride	101	100	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P394165

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224939	Fluoride	96.1	97.6	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P394356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226528	Fluoride	96.2	98.2	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P394524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226238	Fluoride	98.0	99.6	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P394374

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2225675	Organic Carbon	97.1	96.3	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P394609

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226085	Organic Carbon	94.6	93.9	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P394610

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2226178	Organic Carbon	90.8	91.3	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394030

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226082	Turbidity	1.83	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P394031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226175	Turbidity	3.05	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P394231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227163	Calcium	3.76	Spike	P	0 - 20
2227163	Chromium	3.11	Spike	P	0 - 20
2227163	Iron	3.94	Spike	P	0 - 20
2227163	Magnesium	2.71	Spike	P	0 - 20
2227163	Manganese	2.53	Spike	P	0 - 20
2227163	Zinc	3.23	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P394231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2227163	Aluminum	0.990	Spike	P	0 - 20
2227163	Antimony	0.703	Spike	P	0 - 20
2227163	Arsenic	2.33	Spike	P	0 - 20
2227163	Beryllium	4.02	Spike	P	0 - 20
2227163	Cadmium	1.46	Spike	P	0 - 20
2227163	Copper	0.469	Spike	P	0 - 20
2227163	Lead	0.686	Spike	P	0 - 20
2227163	Nickel	1.40	Spike	P	0 - 20
2227163	Selenium	1.85	Spike	P	0 - 20
2227163	Silver	0.170	Spike	P	0 - 20
2227163	Thallium	0.336	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394129

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225834	Bromide	0.351	Spike	P	0 - 20

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

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394189

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226171	Ammonia-N	0.177	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394084

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224472	Kjeldahl Nitrogen	0.498	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P394207

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226488	Kjeldahl Nitrogen	5.86	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P394076

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225540	NO2NO3-N	0.484	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P394060

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226005	Total-P	1.65	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P394024

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226173	O-Phosphate-P	0.101	Spike	P	0 - 20

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

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	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	MCPPP	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: SM 2320 B-2011
Batch ID: P394162

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225753	Total Alkalinity	0.348	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P394364

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226104	Total Alkalinity	1.51	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P394163

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226073	Fluoride	0.472	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P394165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224939	Fluoride	0.891	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P394356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226528	Fluoride	1.37	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P394524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226238	Fluoride	0.959	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P394374

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2225675	Organic Carbon	0.737	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P394609

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226085	Organic Carbon	0.496	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P394610

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2226178	Organic Carbon	0.510	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2226205

Field Sample ID: G4NW0516

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	110	P	30 - 160
EPA 8321B	Acetaminophen-d4	122	P	30 - 160
EPA 8321B	Carbamazepine-d10	92.3	P	30 - 160
EPA 8321B	Diuron-d6	73.1	P	30 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Endothall-d6	101	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	94.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	94.4	P	40 - 160
EPA 8321B	Ibuprofen-d3	95.8	P	30 - 160
EPA 8321B	Primidone-d5	112	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160

Lab Sample ID: 2226206

Field Sample ID: G4NW0402

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	101	P	30 - 160
EPA 8321B	Carbamazepine-d10	85.3	P	30 - 160
EPA 8321B	Diuron-d6	66.0	P	30 - 160
EPA 8321B	Endothall-d6	103	P	40 - 160
EPA 8321B	Endothall-d6	103	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	174	F	40 - 160
EPA 8321B	Glyphosate 13C 15N	174	F	40 - 160
EPA 8321B	Ibuprofen-d3	74.2	P	30 - 160
EPA 8321B	Primidone-d5	111	P	30 - 160
EPA 8321B	Sucralose-d6	88.3	P	30 - 160
EPA 8321B	Sucralose-d6	88.3	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103693

Included Lab Sample IDs: 2226173, 2226174, 2226179, 2226180

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103696

Included Lab Sample IDs: 2226169, 2226170, 2226175, 2226176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103717

Included Lab Sample IDs: 2226171, 2226172, 2226177, 2226178

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103721

Included Lab Sample IDs: 2226171, 2226172, 2226177, 2226178

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103734

Included Lab Sample IDs: 2226169, 2226170, 2226175, 2226176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.1	98.0	P/P	90 - 110
Bromide	97.0	98.2	P/P	90 - 110
Bromide	98.0	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103740

Included Lab Sample IDs: 2226205, 2226206

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
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

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A103740

Included Lab Sample IDs: 2226205, 2226206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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: SM 2320 B-2011

Run ID: A103744

Included Lab Sample IDs: 2226169, 2226176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.3	96.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103744

Included Lab Sample IDs: 2226170, 2226176

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.0	98.6	P/P	90 - 110
Fluoride	96.5	99.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103745

Included Lab Sample IDs: 2226205, 2226206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	115	86.9	P/P	60 - 160
AMPA	85.8	91.8	P/P	60 - 160
Endothall	114	101	P/P	60 - 160
Glufosinate	111	117	P/P	60 - 160
Glyphosate	113	129	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103751

Included Lab Sample IDs: 2226171, 2226172, 2226177, 2226178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	99.8	P/P	90 - 110
Ammonia-N	99.4	98.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103774

Included Lab Sample IDs: 2226171, 2226172, 2226177

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	92.0	95.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103798

Included Lab Sample IDs: 2226178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	96.3	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103829

Included Lab Sample IDs: 2226210, 2226211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	102	104	P/P	90 - 110
Calcium	103	97.8	P/P	90 - 110
Chromium	102	99.4	P/P	90 - 110
Chromium	99.4	93.7	P/P	90 - 110
Iron	101	103	P/P	90 - 110
Iron	101	95.5	P/P	90 - 110
Magnesium	100	94.1	P/P	90 - 110
Magnesium	101	102	P/P	90 - 110
Manganese	103	97.0	P/P	90 - 110
Manganese	105	103	P/P	90 - 110
Zinc	100	92.9	P/P	90 - 110
Zinc	103	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103840

Included Lab Sample IDs: 2226169

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

Reference Method: SM 2320 B-2011

Run ID: A103841

Included Lab Sample IDs: 2226170, 2226175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	92.7	94.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103844

Included Lab Sample IDs: 2226171

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.3	93.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103899

Included Lab Sample IDs: 2226210, 2226211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	103	102	P/P	90 - 110
Arsenic	99.8	99.7	P/P	90 - 110
Beryllium	96.5	96.2	P/P	90 - 110
Cadmium	99.5	98.9	P/P	90 - 110
Copper	97.1	97.8	P/P	90 - 110
Lead	103	102	P/P	90 - 110
Nickel	97.0	96.4	P/P	90 - 110
Selenium	98.9	99.2	P/P	90 - 110
Silver	100	99.8	P/P	90 - 110
Thallium	108	108	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A103903

Included Lab Sample IDs: 2226175

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	98.1	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103914

Included Lab Sample IDs: 2226205, 2226206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	112	114	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103928

Included Lab Sample IDs: 2226210, 2226211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.3	96.9	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A103939

Included Lab Sample IDs: 2226172, 2226177, 2226178

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.5	94.8	P/P	90 - 110
Organic Carbon	95.5	95.5	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					1.83	
	Turbidity					3.05	
EPA 200.7 Rev. 4.4	Calcium	108					3.76
	Chromium	96.9	90.0	92.9			3.11
	Iron	103	92.4	99.2			3.94
	Magnesium	102					2.71
	Manganese	102	95.1	97.7			2.53
	Zinc	106	95.0	98.1			3.23
EPA 200.8 Rev. 5.4	Aluminum	91.6	94.9	95.8			0.990
	Antimony	103	108	108			0.703
	Arsenic	96.7	108	105			2.33
	Beryllium	86.7	96.4	92.6			4.02
	Cadmium	98.6	96.2	94.8			1.46
	Copper	92.9	102	102			0.469
	Lead	104	110	109			0.686
	Nickel	92.2	100	98.7			1.40
	Selenium	95.9	101	99.1			1.85
	Silver	101	96.2	96.0			0.170
	Thallium	108	112	113			0.336
EPA 300.0 Rev. 2.1	Bromide	99.7	97.3	96.9	100		0.351
	Bromide	96.0	95.5	93.9	95.7		1.65
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.8	98.0			0.177
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.8	94.5	94.0			0.498
	Kjeldahl Nitrogen	98.9	101	92.8			5.86
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	98.9	98.4			0.484
EPA 365.1 Rev. 2.0	Total-P	107	110	108			1.65
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	99.2	99.3			0.101
EPA 8321B	2,4-D	139	105	105			0.460
	2,4,5-T	107	73.8	92.6			22.6
	Acesulfame K	95.2	17.1	17.8			3.46
	Acetaminophen	104	146	101			36.4
	Acetamiprid	112	86.8	86.9			0.0174
	Afidopyropen	75.2	56.5	63.6			11.8
	AMPA	87.1	104	102			1.58
	Bentazon	89.0	29.0	32.7			5.74
	Benzovindiflupyr	91.0	68.7	66.5			3.34
	Carbamazepine	113	79.2	81.0			2.37
	Clothianidin	116	99.4	99.9			0.486
	Dinotefuran	109	118	123			4.58
	Diuron	67.3	46.0	46.6			1.40
	Endothall	93.7	97.1	97.8			0.687
	Fenuron	112	67.5	73.3			6.03
	Fluridone	94.7	60.9	64.4			5.56
	Glufosinate	109	106	102			4.41
	Glyphosate	82.4	62.9	90.5			29.3
	Hydrocodone	117	106	116			8.94
	Ibuprofen	108	79.2	74.1			6.66
	Imazapyr	149	101	96.0			5.24
	Imidacloprid	126	138	146			5.24
	Linuron	85.4	63.2	66.5			5.15
	Mandestrobin	97.3	75.9	75.7			0.257
	MCPP	123	87.4	91.1			3.83
	Naproxen	49.4	55.5	80.8			37.2
	Primidone	122	90.6	105			14.9

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	77.6	67.5	65.1		3.59
	Sucralose	111	94.6	91.1		3.65
	Thiamethoxam	123	137	143		4.11
	Tolfenpyrad	50.5	54.7	42.7		24.7
	Triclopyr	105	78.7	89.3		12.5
SM 2320 B-2011	Total Alkalinity	99.6			0.348	
	Total Alkalinity	94.5			1.51	
SM 4500 F-C-2011	Fluoride	99.3	101	100		0.472
	Fluoride	97.0	96.1	97.6		0.891
	Fluoride	98.1	96.2	98.2		1.37
	Fluoride	95.6	98.0	99.6		0.959
SM 5310 B-2011	Organic Carbon	97.4	97.1	96.3		0.737
	Organic Carbon	94.1	94.6	93.9		0.496
	Organic Carbon	95.5	90.8	91.3		0.510

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2226169, 2226170, 2226175, 2226176
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2226210, 2226211
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2226210, 2226211
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2226169, 2226170, 2226175, 2226176
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2226171, 2226172, 2226177, 2226178
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2226171, 2226172, 2226177, 2226178
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2226171, 2226172, 2226177, 2226178
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2226171, 2226172, 2226177, 2226178
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2226173, 2226174, 2226179, 2226180
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2226205, 2226206
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2226205, 2226206
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2226169, 2226170, 2226175, 2226176
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2226169, 2226170, 2226175, 2226176
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2226169, 2226170, 2226175, 2226176
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2226171, 2226172, 2226177, 2226178

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	02/19/2021			02/19/2021 14:29	Yen Ta	2226169, 2226170, 2226175, 2226176
EPA 200.7 Rev. 4.4	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/01/2021 13:34	Betina Topolski	2226211
	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/01/2021 13:43	Betina Topolski	2226211
	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/01/2021 16:26	Betina Topolski	2226210
EPA 200.8 Rev. 5.4	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/04/2021 20:55	Alexander Thompson	2226210
	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/04/2021 21:02	Alexander Thompson	2226211
	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/05/2021 16:10	Alexander Thompson	2226210
	02/19/2021	02/25/2021 16:10	Elliott D. Healy	03/05/2021 16:15	Alexander Thompson	2226211
EPA 300.0 Rev. 2.1	02/19/2021			02/23/2021 09:22	Lipi Saha	2226169
	02/19/2021			02/23/2021 09:40	Lipi Saha	2226170
	02/19/2021			02/23/2021 10:52	Lipi Saha	2226176
	02/19/2021			02/26/2021 14:14	Lipi Saha	2226175
EPA 350.1 Rev. 2.0	02/19/2021			02/24/2021 17:41	Ping Hua	2226177
	02/19/2021			02/24/2021 17:42	Ping Hua	2226178
	02/19/2021			02/24/2021 18:01	Ping Hua	2226171
	02/19/2021			02/24/2021 18:06	Ping Hua	2226172
EPA 351.2 Rev. 2.0	02/19/2021	02/23/2021 11:05	Yen Ta	02/25/2021 15:08	Julia Storbeck	2226171
	02/19/2021	02/23/2021 11:05	Yen Ta	02/25/2021 15:10	Julia Storbeck	2226172
	02/19/2021	02/23/2021 11:05	Yen Ta	02/25/2021 15:11	Julia Storbeck	2226177
	02/19/2021	02/25/2021 12:00	Yen Ta	02/26/2021 13:07	Virginia P. Brown	2226178
EPA 353.2 Rev. 2.0	02/19/2021			02/23/2021 09:34	Beverly Y. Sanders	2226171
	02/19/2021			02/23/2021 09:35	Beverly Y. Sanders	2226172
	02/19/2021			02/23/2021 09:36	Beverly Y. Sanders	2226177
	02/19/2021			02/23/2021 09:37	Beverly Y. Sanders	2226178
EPA 365.1 Rev. 2.0	02/19/2021	02/22/2021 12:30	Yen Ta	02/23/2021 13:16	Shengyu Wang	2226171, 2226172
	02/19/2021	02/22/2021 12:30	Yen Ta	02/23/2021 13:17	Shengyu Wang	2226177
	02/19/2021	02/22/2021 12:30	Yen Ta	02/23/2021 13:18	Shengyu Wang	2226178
EPA 365.1 Rev. 2.0 dissolved	02/19/2021			02/19/2021 14:25	Samantha Davila	2226173
	02/19/2021			02/19/2021 14:27	Samantha Davila	2226174
	02/19/2021			02/19/2021 14:28	Samantha Davila	2226179
	02/19/2021			02/19/2021 14:29	Samantha Davila	2226180
EPA 8321B	02/19/2021	02/23/2021 09:00	Hoor Shaik	02/24/2021 03:57	Juyoung Kim	2226205
	02/19/2021	02/23/2021 09:00	Hoor Shaik	02/24/2021 04:31	Juyoung Kim	2226206
	02/19/2021	02/23/2021 10:00	Rebecca Ware	02/23/2021 17:57	Rebecca Ware	2226205
	02/19/2021	02/23/2021 10:00	Rebecca Ware	02/23/2021 18:11	Rebecca Ware	2226206
	02/19/2021	02/23/2021 10:00	Rebecca Ware	03/04/2021 15:07	Rebecca Ware	2226205
	02/19/2021	02/23/2021 10:00	Rebecca Ware	03/04/2021 15:19	Rebecca Ware	2226206
SM 2320 B-2011	02/19/2021			02/24/2021 07:25	Dale L. Simmons	2226169
	02/19/2021			02/24/2021 07:37	Dale L. Simmons	2226176
	02/19/2021			02/27/2021 08:22	Dale L. Simmons	2226170

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	02/19/2021			02/27/2021 09:02	Dale L. Simmons	2226175
SM 2540 D-2011	02/19/2021			02/22/2021 14:12	Yijie Li	2226169, 2226170, 2226175, 2226176
SM 4500 F-C-2011	02/19/2021			02/23/2021 23:19	Dale L. Simmons	2226170
	02/19/2021			02/24/2021 05:44	Dale L. Simmons	2226176
	02/19/2021			02/24/2021 22:18	Dale L. Simmons	2226169
	02/19/2021			03/04/2021 23:13	Dale L. Simmons	2226175
SM 5310 B-2011	02/19/2021			03/02/2021 06:15	Touraj Touran	2226171
	02/19/2021			03/06/2021 01:54	Madeline Gruver	2226172
	02/19/2021			03/06/2021 04:37	Madeline Gruver	2226178
	02/19/2021			03/06/2021 05:50	Madeline Gruver	2226177