

Chemical Analysis Report

NE-DIST-2021-02-11-01

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

Event Description: **ICW Boat and Arlington**
Request ID: **RQ-2021-02-08-31**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 03-MAR-2021 15:15

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Arlington River at Carlton Oaks

Collection Date/Time: 02/10/2021 12:25

Field ID: G2NE1152

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224817	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P393679	
	EPA 300.0 Rev. 2.1	Bromide	8.1		mg Br/L	P394011	
	SM 2320 B-2011	Total Alkalinity	65		mg CaCO3/L	P393786	
	SM 2540 D-2011	TSS	17		mg/L	P394095	
	SM 4500 F-C-2011	Fluoride	0.21		mg F/L	P393944	
2224818	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P394069	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P393896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.30		mg N/L	P393809	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P393776	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P393934	
2224819	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.036		mg P/L	P393677	

Sample Location: Little Pottsburg Creek at Atlantic Blvd

Collection Date/Time: 02/10/2021 12:00

Field ID: 20030679

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224811	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P393679	
	EPA 300.0 Rev. 2.1	Bromide	6.5		mg Br/L	P394011	
	SM 2320 B-2011	Total Alkalinity	66		mg CaCO3/L	P393786	
	SM 2540 D-2011	TSS	16	A	mg/L	P394095	
	SM 4500 F-C-2011	Fluoride	0.18		mg F/L	P393944	
2224812	EPA 350.1 Rev. 2.0	Ammonia-N	0.058		mg N/L	P394069	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.78		mg N/L	P393896	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P393808	
	EPA 365.1 Rev. 2.0	Total-P	0.11		mg P/L	P393776	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P393934	
2224813	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.052		mg P/L	P393677	
2224824	EPA 8321B	Acesulfame K	0.10	U	ug/L	P393719	
		2,4-D	0.067		ug/L	P393672	
		AMPA	1.0	U	ug/L	P393719	
		Sucralose	0.63		ug/L	P393719	
		Acetaminophen**	0.033		ug/L	P393672	RPD
		Endothall	0.25	UJ	ug/L	P393719	CCV
		Acetamiprid**	0.0020	U	ug/L	P393672	RPD
		Glufosinate	1.0	U	ug/L	P393719	
		Glyphosate	1.0	U	ug/L	P393719	
		Afidopyropen**	0.0020	U	ug/L	P393672	RPD
		Bentazon	0.019		ug/L	P393672	
		Benzovindiflupyr**	0.0020	U	ug/L	P393672	
		Carbamazepine**	8.4E-04	I	ug/L	P393672	
		Clothianidin**	0.0020	U	ug/L	P393672	
		Dinotefuran**	0.0022	I	ug/L	P393672	
		Diuron	0.015		ug/L	P393672	
		Fenuron	0.016	U	ug/L	P393672	
		Fluridone**	0.0048		ug/L	P393672	
		Imazapyr**	0.20		ug/L	P393672	
		Hydrocodone**	0.0020	U	ug/L	P393672	
		Ibuprofen**	0.020	U	ug/L	P393672	
		Imidacloprid	0.076		ug/L	P393672	
		Linuron	0.0040	U	ug/L	P393672	
		Mandestrobin**	0.0020	U	ug/L	P393672	
		MCP	0.0043	I	ug/L	P393672	
		Naproxen**	0.0080	U	ug/L	P393672	
		Primidone**	0.0040	U	ug/L	P393672	RPD
		Pyraclostrobin**	0.0020	U	ug/L	P393672	
		Thiamethoxam**	0.0020	U	ug/L	P393672	
		Tolfenpyrad**	0.0020	U	ug/L	P393672	
		Triclopyr**	0.0040	U	ug/L	P393672	
2224826	EPA 200.7 Rev. 4.4	Calcium	67.6		mg/L	P393675	

Field ID: 20030679

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224826	EPA 200.7 Rev. 4.4	Iron	880		ug/L	P393675	
		Magnesium	130		mg/L	P393675	
		Manganese	23.8		ug/L	P393675	
		Zinc	14	I	ug/L	P393675	
	EPA 200.8 Rev. 5.4	Aluminum	504		ug/L	P393675	
		Antimony	0.15	I	ug/L	P393675	
		Arsenic	1.37		ug/L	P393675	
		Beryllium	0.025	I	ug/L	P393675	
		Cadmium	0.020	U	ug/L	P393675	
		Chromium	0.91	I	ug/L	P393675	
		Copper	2.60		ug/L	P393675	
		Lead	1.92		ug/L	P393675	
		Nickel	0.66	I	ug/L	P393675	
		Selenium	0.20	U	ug/L	P393675	
		Silver	0.010	U	ug/L	P393675	
		Thallium	0.10	U	ug/L	P393675	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference. Refer to the Lab Analysis Report for an explanation of QC Codes.

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

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

Sample Location: FB_02102021

Collection Date/Time: 02/10/2021 12:05

Field ID: FB_02102021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224814	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P393679	
	EPA 300.0 Rev. 2.1	Bromide	0.013	U	mg Br/L	P394011	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P393786	
	SM 2540 D-2011	TSS	2	U	mg/L	P394095	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P393944	
2224815	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P394033	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P393892	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P393755	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P393774	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P393934	
2224816	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P393676	
2224825	EPA 8321B	2,4-D	0.0020	U	ug/L	P393672	
		Acesulfame K	0.10	U	ug/L	P393719	
		AMPA	0.10	U	ug/L	P393719	
		Sucralose	0.010	U	ug/L	P393719	
		Acetaminophen**	0.0080	U	ug/L	P393672	RPD
		Endothall	0.25	UJ	ug/L	P393719	CCV
		Acetamiprid**	0.0020	U	ug/L	P393672	RPD
		Glufosinate	0.10	U	ug/L	P393719	
		Glyphosate	0.10	U	ug/L	P393719	
		Afidopyropen**	0.0020	U	ug/L	P393672	RPD
		Bentazon	8.0E-04	U	ug/L	P393672	
		Benzovindiflupyr**	0.0020	U	ug/L	P393672	
		Carbamazepine**	8.0E-04	U	ug/L	P393672	
		Clothianidin**	0.0020	U	ug/L	P393672	
		Dinotefuran**	0.0020	U	ug/L	P393672	
		Diuron	0.0020	U	ug/L	P393672	
		Fenuron	0.016	U	ug/L	P393672	
		Fluridone**	8.0E-04	U	ug/L	P393672	
		Imazapyr**	0.0040	U	ug/L	P393672	
		Hydrocodone**	0.0020	U	ug/L	P393672	
		Ibuprofen**	0.020	U	ug/L	P393672	
		Imidacloprid	0.0020	U	ug/L	P393672	
		Linuron	0.0040	U	ug/L	P393672	
		Mandestrobin**	0.0020	U	ug/L	P393672	
		MCP	0.0020	U	ug/L	P393672	
		Naproxen**	0.0080	U	ug/L	P393672	
		Primidone**	0.0040	U	ug/L	P393672	RPD
		Pyraclostrobin**	0.0020	U	ug/L	P393672	
		Thiamethoxam**	0.0020	U	ug/L	P393672	
		Tolfenpyrad**	0.0020	U	ug/L	P393672	
		Triclopyr**	0.0040	U	ug/L	P393672	
2224827	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P393675	

Field ID: FB_02102021

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2224827	EPA 200.7 Rev. 4.4	Iron	30	U	ug/L	P393675	
		Magnesium	0.040	U	mg/L	P393675	
		Manganese	1.0	U	ug/L	P393675	
		Zinc	5.0	U	ug/L	P393675	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P393675	
		Antimony	0.050	U	ug/L	P393675	
		Arsenic	0.050	U	ug/L	P393675	
		Beryllium	0.010	U	ug/L	P393675	
		Cadmium	0.020	U	ug/L	P393675	
		Chromium	0.40	U	ug/L	P393675	
		Copper	0.40	U	ug/L	P393675	
		Lead	0.20	U	ug/L	P393675	
		Nickel	0.50	U	ug/L	P393675	
		Selenium	0.20	U	ug/L	P393675	
		Silver	0.010	U	ug/L	P393675	
		Thallium	0.10	U	ug/L	P393675	

Ref. Method and Comment:

EPA 8321B: MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Refer to the Lab Analysis Report for an explanation of QC Codes.

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393679

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P393675

Component	Result	Code	Units
Calcium	0.075	U	mg/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: P393675

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
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: P394011

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394033

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393892

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393896

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393755

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393808

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393809

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393774

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393776

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393676

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393677

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

Reference Method: EPA 8321B
Batch ID: P393672

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P393672

Component	Result	Code	Units
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
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B

Batch ID: P393719

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: P393786

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

Reference Method: SM 2540 D-2011

Batch ID: P394095

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011

Batch ID: P393944

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: P393934

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: P393675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Manganese	104		P	85 - 115
Zinc	111		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393675

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	99.5		P	85 - 115
Arsenic	99.3		P	85 - 115
Beryllium	89.5		P	85 - 115
Cadmium	97.6		P	85 - 115
Chromium	95.7		P	85 - 115
Copper	96.8		P	85 - 115
Lead	102		P	85 - 115
Nickel	95.7		P	85 - 115
Selenium	99.3		P	85 - 115
Silver	113		P	85 - 115
Thallium	94.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394011

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394033

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	95.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393892

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393896

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393755

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393808

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393809

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393774

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393776

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393676

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393677

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

Reference Method: EPA 8321B
Batch ID: P393672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	95.6		P	30 - 160
Acetaminophen	148		P	30 - 160
Acetamiprid	86.9		P	30 - 160
Afidopyropen	72.0		P	30 - 160
Bentazon	89.3		P	30 - 160
Benzovindiflupyr	76.9		P	30 - 160
Carbamazepine	106		P	30 - 160
Clothianidin	90.2		P	30 - 160
Dinotefuran	82.1		P	30 - 160
Diuron	63.8		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P393672

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	97.7		P	30 - 160
Fluridone	82.4		P	30 - 160
Hydrocodone	89.6		P	30 - 160
Ibuprofen	86.6		P	30 - 160
Imazapyr	97.9		P	30 - 160
Imidacloprid	93.7		P	30 - 160
Linuron	69.0		P	30 - 160
Mandestrobin	81.5		P	30 - 160
MCPP	97.0		P	30 - 160
Naproxen	52.5		P	30 - 160
Primidone	88.8		P	30 - 160
Pyraclostrobin	75.5		P	30 - 160
Thiamethoxam	83.4		P	30 - 160
Tolfenpyrad	45.0		P	30 - 160
Triclopyr	86.2		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P393719

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	85.1		P	40 - 150
AMPA	109		P	40 - 150
Endothall	149		P	40 - 150
Glufosinate	132		P	40 - 150
Glyphosate	79.7		P	40 - 140
Sucralose	101		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P393786

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P393944

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	93.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P393934

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	89.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P393675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224718	Iron	108	109	P/P	80 - 120
2224718	Magnesium	104		P	80 - 120
2224718	Manganese	104	105	P/P	80 - 120
2224718	Zinc	110	112	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P393675

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224718	Aluminum	103	95.2	P/P	80 - 120
2224718	Antimony	104	95.8	P/P	80 - 120
2224718	Arsenic	102	94.0	P/P	80 - 120
2224718	Beryllium	88.5	84.2	P/P	80 - 120
2224718	Cadmium	100	91.8	P/P	80 - 120
2224718	Chromium	99.5	91.0	P/P	80 - 120
2224718	Copper	93.8	85.6	P/P	80 - 120
2224718	Lead	105	97.6	P/P	80 - 120
2224718	Nickel	95.6	87.7	P/P	80 - 120
2224718	Selenium	98.8	90.6	P/P	80 - 120
2224718	Silver	99.3	106	P/P	80 - 120
2224718	Thallium	97.9	92.7	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P394011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224351	Bromide	95.5	96.8	P/P	90 - 110
2225313	Bromide	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224790	Ammonia-N	97.4	99.8	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P394069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224758	Ammonia-N	104	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P393892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224715	Kjeldahl Nitrogen	110	105	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P393896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224754	Kjeldahl Nitrogen	99.8	107	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393755

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224789	NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224750	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224818	NO2NO3-N	95.2		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393774

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224756	Total-P	105	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393776

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224861	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393676

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224793	O-Phosphate-P	98.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224813	O-Phosphate-P	96.1	97.4	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P393672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224683	2,4-D	74.4	75.3	P/P	30 - 160
2224683	Acetaminophen	148	104	P/P	30 - 160
2224683	Acetamiprid	57.5	96.6	P/P	30 - 160
2224683	Afidopyrophen	45.1	79.1	P/P	30 - 160
2224683	Benzovindiflupyr	65.1	70.2	P/P	30 - 160
2224683	Carbamazepine	69.5	76.1	P/P	30 - 160
2224683	Clothianidin	81.6	86.7	P/P	30 - 160
2224683	Dinotefuran	86.3	92.7	P/P	30 - 160
2224683	Diuron	46.5	47.6	P/P	30 - 160
2224683	Fenuron	61.5	68.8	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P393672

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224683	Hydrocodone	84.6	88.6	P/P	30 - 160
2224683	Ibuprofen	73.9	74.2	P/P	30 - 160
2224683	Imidacloprid	122	129	P/P	30 - 160
2224683	Linuron	60.6	57.8	P/P	30 - 160
2224683	Mandestrobin	69.3	75.2	P/P	30 - 160
2224683	MCCP	74.9	85.5	P/P	30 - 160
2224683	Naproxen	70.9	53.6	P/P	30 - 160
2224683	Primidone	62.4	88.5	P/P	30 - 160
2224683	Pyraclostrobin	72.7	78.4	P/P	30 - 160
2224683	Thiamethoxam	97.4	110	P/P	30 - 160
2224683	Tolfenpyrad	41.7	44.4	P/P	30 - 160
2224683	Triclopyr	77.0	87.4	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P393719

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224678	Acesulfame K	103	112	P/P	40 - 150
2224678	AMPA	129	134	P/P	40 - 150
2224678	Endothall	123	134	P/P	40 - 150
2224678	Glufosinate	103	119	P/P	40 - 150
2224678	Glyphosate	89.4	101	P/P	40 - 140
2224678	Sucralose	94.0	115	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P393944

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224849	Fluoride	94.6	94.1	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P393934

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2224856	Organic Carbon	89.1	89.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P393679

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224713	Turbidity	3.90	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P393675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224718	Calcium	1.36	Spike	P	0 - 20
2224718	Iron	0.942	Spike	P	0 - 20
2224718	Magnesium	1.42	Spike	P	0 - 20
2224718	Manganese	0.940	Spike	P	0 - 20
2224718	Zinc	1.59	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P393675

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224718	Aluminum	7.79	Spike	P	0 - 20
2224718	Antimony	8.15	Spike	P	0 - 20
2224718	Arsenic	8.59	Spike	P	0 - 20
2224718	Beryllium	5.07	Spike	P	0 - 20
2224718	Cadmium	8.65	Spike	P	0 - 20
2224718	Chromium	8.94	Spike	P	0 - 20
2224718	Copper	8.57	Spike	P	0 - 20
2224718	Lead	7.19	Spike	P	0 - 20
2224718	Nickel	8.59	Spike	P	0 - 20
2224718	Selenium	8.54	Spike	P	0 - 20
2224718	Silver	6.37	Spike	P	0 - 20
2224718	Thallium	5.53	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P394011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224351	Bromide	0.855	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224790	Ammonia-N	1.77	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P394069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224758	Ammonia-N	0.134	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224715	Kjeldahl Nitrogen	3.54	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P393896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224754	Kjeldahl Nitrogen	6.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393755

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224789	NO2NO3-N	0.913	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224750	NO2NO3-N	0.468	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P393809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224818	NO2NO3-N	0.201	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393774

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224756	Total-P	1.43	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P393776

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224861	Total-P	0.0417	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393676

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224793	O-Phosphate-P	1.03	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P393677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224813	O-Phosphate-P	0.873	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P393672

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224683	2,4-D	1.12	Spike	P	0 - 30
2224683	Acetaminophen	35.1	Spike	F	0 - 30
2224683	Acetamiprid	50.8	Spike	F	0 - 30
2224683	Afidopyropen	54.7	Spike	F	0 - 30
2224683	Bentazon	0.00733	Spike	P	0 - 30
2224683	Benzovindiflupyr	7.60	Spike	P	0 - 30
2224683	Carbamazepine	8.36	Spike	P	0 - 30
2224683	Clothianidin	6.03	Spike	P	0 - 30
2224683	Dinotefuran	7.16	Spike	P	0 - 30
2224683	Diuron	2.41	Spike	P	0 - 30
2224683	Fenuron	11.3	Spike	P	0 - 30
2224683	Fluridone	6.25	Spike	P	0 - 30
2224683	Hydrocodone	4.64	Spike	P	0 - 30
2224683	Ibuprofen	0.424	Spike	P	0 - 30
2224683	Imazapyr	13.5	Spike	P	0 - 30
2224683	Imidacloprid	5.25	Spike	P	0 - 30
2224683	Linuron	4.72	Spike	P	0 - 30
2224683	Mandestrobin	8.17	Spike	P	0 - 30
2224683	MCP	13.3	Spike	P	0 - 30
2224683	Naproxen	27.9	Spike	P	0 - 30
2224683	Primidone	34.5	Spike	F	0 - 30
2224683	Pyraclostrobin	7.57	Spike	P	0 - 30
2224683	Thiamethoxam	11.8	Spike	P	0 - 30
2224683	Tolfenpyrad	6.33	Spike	P	0 - 30
2224683	Triclopyr	12.7	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P393719

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224678	Acesulfame K	8.14	Spike	P	0 - 30
2224678	AMPA	3.35	Spike	P	0 - 30
2224678	Endothall	8.43	Spike	P	0 - 30
2224678	Glufosinate	14.1	Spike	P	0 - 30
2224678	Glyphosate	12.5	Spike	P	0 - 30
2224678	Sucralose	7.53	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P393786

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224849	Total Alkalinity	1.47	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P394095

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224811	TSS	5.13	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P393944

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224849	Fluoride	0.484	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P393934

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2224856	Organic Carbon	0.0890	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2224824

Field Sample ID: 20030679

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	90.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	115	P	30 - 160
EPA 8321B	Carbamazepine-d10	71.4	P	30 - 160
EPA 8321B	Diuron-d6	60.6	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	125	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	125	P	30 - 160
EPA 8321B	Ibuprofen-d3	69.5	P	30 - 160
EPA 8321B	Primidone-d5	85.9	P	30 - 160
EPA 8321B	Sucralose-d6	94.3	P	30 - 160
EPA 8321B	Sucralose-d6	94.3	P	30 - 160

Lab Sample ID: 2224825

Field Sample ID: FB_02102021

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	92.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.8	P	30 - 160
EPA 8321B	Diuron-d6	89.0	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Endothall-d6	133	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	116	P	30 - 160
EPA 8321B	Ibuprofen-d3	91.5	P	30 - 160
EPA 8321B	Primidone-d5	96.2	P	30 - 160
EPA 8321B	Sucralose-d6	99.1	P	30 - 160
EPA 8321B	Sucralose-d6	99.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A103541

Included Lab Sample IDs: 2224813, 2224816, 2224819

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.6	P/P	90 - 110
O-Phosphate-P	99.1	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A103542

Included Lab Sample IDs: 2224811, 2224814, 2224817

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

Reference Method: EPA 8321B

Run ID: A103561

Included Lab Sample IDs: 2224824, 2224825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.4	98.8	P/P	50 - 150
Acetaminophen	112	107	P/P	60 - 160
Acetamiprid	108	107	P/P	50 - 150
Afidopyropen	111	99.3	P/P	50 - 150
Bentazon	139	139	P/P	50 - 160
Benzovindiflupyr	98.3	107	P/P	50 - 160
Carbamazepine	117	114	P/P	60 - 150
Clothianidin	95.4	94.3	P/P	60 - 150
Dinotefuran	102	102	P/P	50 - 150
Diuron	105	112	P/P	60 - 160
Fenuron	103	104	P/P	60 - 150
Fluridone	115	128	P/P	60 - 160
Hydrocodone	107	105	P/P	60 - 150
Ibuprofen	81.7	131	P/P	50 - 160
Imazapyr	118	88.9	P/P	50 - 160
Imidacloprid	99.8	101	P/P	60 - 150
Linuron	107	110	P/P	60 - 150
Mandestrobin	104	112	P/P	50 - 150
MCP	107	109	P/P	50 - 150
Naproxen	87.5	77.2	P/P	50 - 160
Primidone	92.0	96.4	P/P	60 - 150
Pyraclostrobin	105	108	P/P	60 - 150
Thiamethoxam	95.9	102	P/P	50 - 150
Tolfenpyrad	101	100	P/P	60 - 150
Triclopyr	106	108	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103580

Included Lab Sample IDs: 2224815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	104	106	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A103594

Included Lab Sample IDs: 2224811, 2224814, 2224817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	96.7	94.1	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A103597

Included Lab Sample IDs: 2224826, 2224827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	90 - 110
Calcium	103	103	P/P	95 - 105
Iron	102	101	P/P	90 - 110
Iron	102	102	P/P	95 - 105
Magnesium	101	100	P/P	90 - 110
Magnesium	102	101	P/P	95 - 105
Manganese	100	101	P/P	95 - 105
Manganese	101	101	P/P	90 - 110
Zinc	104	109	P/P	95 - 105
Zinc	109	110	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A103599

Included Lab Sample IDs: 2224812, 2224818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	99.5	P/P	90 - 110
NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103606

Included Lab Sample IDs: 2224812, 2224818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A103610

Included Lab Sample IDs: 2224815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.8	99.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103631

Included Lab Sample IDs: 2224824, 2224825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	74.6	75.0	P/P	60 - 160
AMPA	110	104	P/P	40 - 160
AMPA	113	108	P/P	40 - 160
Endothall	150	165*	P/F	60 - 160
Glufosinate	115	107	P/P	60 - 200
Glufosinate	119	110	P/P	60 - 200

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A103631

Included Lab Sample IDs: 2224824, 2224825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glyphosate	112	117	P/P	60 - 160
Glyphosate	150	119	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A103645

Included Lab Sample IDs: 2224812, 2224815, 2224818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	91.2	90.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A103647

Included Lab Sample IDs: 2224824, 2224825

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	98.2	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A103651

Included Lab Sample IDs: 2224811, 2224814, 2224817

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

Reference Method: SM 4500 F-C-2011

Run ID: A103652

Included Lab Sample IDs: 2224811, 2224814, 2224817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.2	95.2	P/P	90 - 110
Fluoride	98.0	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A103666

Included Lab Sample IDs: 2224812, 2224815, 2224818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.2	99.7	P/P	90 - 110
Kjeldahl Nitrogen	100	102	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103671

Included Lab Sample IDs: 2224826, 2224827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	103	103	P/P	90 - 110
Aluminum	98.5	103	P/P	90 - 110
Antimony	94.7	99.2	P/P	90 - 110
Antimony	99.2	96.0	P/P	90 - 110
Arsenic	97.0	99.8	P/P	90 - 110
Arsenic	99.8	98.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103671

Included Lab Sample IDs: 2224826, 2224827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	93.6	91.7	P/P	90 - 110
Beryllium	94.2	93.6	P/P	90 - 110
Cadmium	102	99.9	P/P	90 - 110
Cadmium	98.0	102	P/P	90 - 110
Chromium	94.9	98.5	P/P	90 - 110
Chromium	98.5	95.4	P/P	90 - 110
Copper	94.1	96.5	P/P	90 - 110
Copper	96.5	94.8	P/P	90 - 110
Lead	105	107	P/P	90 - 110
Lead	107	106	P/P	90 - 110
Nickel	95.1	98.0	P/P	90 - 110
Nickel	98.0	95.0	P/P	90 - 110
Selenium	97.8	99.8	P/P	90 - 110
Selenium	99.8	98.7	P/P	90 - 110
Thallium	103	99.4	P/P	90 - 110
Thallium	99.2	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103697

Included Lab Sample IDs: 2224815

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.6	99.1	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A103711

Included Lab Sample IDs: 2224812, 2224818

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.4	99.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A103714

Included Lab Sample IDs: 2224826, 2224827

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	108	108	P/P	90 - 110
Silver	108	107	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					3.90	
EPA 200.7 Rev. 4.4	Calcium	104					1.36
	Iron	104	108	109			0.942
	Magnesium	103	104				1.42
	Manganese	104	104	105			0.940
	Zinc	111	110	112			1.59
EPA 200.8 Rev. 5.4	Aluminum	104	103	95.2			7.79
	Antimony	99.5	104	95.8			8.15
	Arsenic	99.3	102	94.0			8.59
	Beryllium	89.5	88.5	84.2			5.07
	Cadmium	97.6	100	91.8			8.65
	Chromium	95.7	99.5	91.0			8.94
	Copper	96.8	93.8	85.6			8.57
	Lead	102	105	97.6			7.19
	Nickel	95.7	95.6	87.7			8.59
	Selenium	99.3	98.8	90.6			8.54
	Silver	113	99.3	106			6.37
	Thallium	94.4	97.9	92.7			5.53
EPA 300.0 Rev. 2.1	Bromide	99.3	95.5	96.8	97.9		0.855
EPA 350.1 Rev. 2.0	Ammonia-N	99.4	97.4	99.8			1.77
	Ammonia-N	95.8	104	103			0.134
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	100	110	105			3.54
	Kjeldahl Nitrogen	103	99.8	107			6.29
EPA 353.2 Rev. 2.0	NO2NO3-N	104	103	104			0.913
	NO2NO3-N	98.5	100	99.5			0.468
	NO2NO3-N	99.5	95.2				0.201
EPA 365.1 Rev. 2.0	Total-P	106	105	103			1.43
	Total-P	105	104	104			0.0417
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2	98.0	97.0			1.03
	O-Phosphate-P	98.5	96.1	97.4			0.873
EPA 8321B	2,4-D	95.6	74.4	75.3			1.12
	Acesulfame K	85.1	103	112			8.14
	Acetaminophen	148	148	104			35.1
	Acetamiprid	86.9	57.5	96.6			50.8
	Afidopyropen	72.0	45.1	79.1			54.7
	AMPA	109	129	134			3.35
	Bentazon	89.3					0.0073
	Benzovindiflupyr	76.9	65.1	70.2			7.60
	Carbamazepine	106	69.5	76.1			8.36
	Clothianidin	90.2	81.6	86.7			6.03
	Dinotefuran	82.1	86.3	92.7			7.16
	Diuron	63.8	46.5	47.6			2.41
	Endothall	149	123	134			8.43
	Fenuron	97.7	61.5	68.8			11.3
	Fluridone	82.4					6.25
	Glufosinate	132	103	119			14.1
	Glyphosate	79.7	89.4	101			12.5
	Hydrocodone	89.6	84.6	88.6			4.64
	Ibuprofen	86.6	73.9	74.2			0.424
	Imazapyr	97.9					13.5
	Imidacloprid	93.7	122	129			5.25
	Linuron	69.0	60.6	57.8			4.72
	Mandestrobin	81.5	69.3	75.2			8.17
	MCPP	97.0	74.9	85.5			13.3

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	52.5	70.9	53.6		27.9
	Primidone	88.8	62.4	88.5		34.5
	Pyraclostrobin	75.5	72.7	78.4		7.57
	Sucralose	101	94.0	115		7.53
	Thiamethoxam	83.4	97.4	110		11.8
	Tolfenpyrad	45.0	41.7	44.4		6.33
	Triclopyr	86.2	77.0	87.4		12.7
SM 2320 B-2011	Total Alkalinity	98.1			1.47	
SM 2540 D-2011	TSS				5.13	
SM 4500 F-C-2011	Fluoride	93.4	94.1	94.6		0.484
SM 5310 B-2011	Organic Carbon	89.9	89.1	89.2		0.0890

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2224811, 2224814, 2224817
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2224826, 2224827
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2224826, 2224827
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2224811, 2224814, 2224817
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2224812, 2224815, 2224818
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2224812, 2224815, 2224818
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2224812, 2224815, 2224818
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2224812, 2224815, 2224818
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2224813, 2224816, 2224819
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2224824, 2224825
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2224824, 2224825
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2224811, 2224814, 2224817
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2224811, 2224814, 2224817
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2224811, 2224814, 2224817
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2224812, 2224815, 2224818

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	02/11/2021			02/11/2021 15:08	Yen Ta	2224811, 2224814, 2224817
EPA 200.7 Rev. 4.4	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 13:34	Betina Topolski	2224827
	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 15:36	Betina Topolski	2224826
	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/15/2021 15:44	Betina Topolski	2224826
EPA 200.8 Rev. 5.4	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/18/2021 19:17	Alexander Thompson	2224827
	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/18/2021 20:53	Alexander Thompson	2224826
	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/19/2021 16:33	Alexander Thompson	2224827
	02/11/2021	02/11/2021 15:50	Elliott D. Healy	02/19/2021 17:28	Alexander Thompson	2224826
EPA 300.0 Rev. 2.1	02/11/2021			02/18/2021 17:16	Lipi Saha	2224811
	02/11/2021			02/18/2021 17:34	Lipi Saha	2224814
	02/11/2021			02/18/2021 17:52	Lipi Saha	2224817
EPA 350.1 Rev. 2.0	02/11/2021			02/19/2021 18:37	Ping Hua	2224815
	02/11/2021			02/22/2021 16:30	Ping Hua	2224812
	02/11/2021			02/22/2021 16:32	Ping Hua	2224818
EPA 351.2 Rev. 2.0	02/11/2021	02/17/2021 12:20	Yen Ta	02/18/2021 16:09	Julia Storbeck	2224815
	02/11/2021	02/17/2021 12:55	Yen Ta	02/18/2021 18:06	Julia Storbeck	2224812
	02/11/2021	02/17/2021 12:55	Yen Ta	02/18/2021 18:08	Julia Storbeck	2224818
EPA 353.2 Rev. 2.0	02/11/2021			02/15/2021 09:54	Beverly Y. Sanders	2224815
	02/11/2021			02/16/2021 09:12	Beverly Y. Sanders	2224812
	02/11/2021			02/16/2021 09:19	Beverly Y. Sanders	2224818
EPA 365.1 Rev. 2.0	02/11/2021	02/15/2021 19:15	Madeline Gruver	02/16/2021 12:17	Shengyu Wang	2224812
	02/11/2021	02/15/2021 19:15	Madeline Gruver	02/16/2021 12:18	Shengyu Wang	2224818
	02/11/2021	02/15/2021 19:15	Madeline Gruver	02/16/2021 13:40	Shengyu Wang	2224815
EPA 365.1 Rev. 2.0 dissolved	02/11/2021			02/11/2021 15:09	Blanca Fach	2224816
	02/11/2021			02/11/2021 15:15	Blanca Fach	2224813
	02/11/2021			02/11/2021 15:22	Blanca Fach	2224819
EPA 8321B	02/11/2021	02/12/2021 13:00	Hoor Shaik	02/13/2021 15:49	Juyoung Kim	2224824
	02/11/2021	02/12/2021 13:00	Hoor Shaik	02/13/2021 16:24	Juyoung Kim	2224825
	02/11/2021	02/12/2021 16:30	Rebecca Ware	02/13/2021 06:05	Rebecca Ware	2224824
	02/11/2021	02/12/2021 16:30	Rebecca Ware	02/13/2021 06:19	Rebecca Ware	2224825
	02/11/2021	02/12/2021 16:30	Rebecca Ware	02/13/2021 16:59	Rebecca Ware	2224824
	02/11/2021	02/12/2021 16:30	Rebecca Ware	02/18/2021 00:12	Rebecca Ware	2224824
	02/11/2021	02/12/2021 16:30	Rebecca Ware	02/18/2021 00:24	Rebecca Ware	2224825
SM 2320 B-2011	02/11/2021			02/12/2021 19:08	Dale L. Simmons	2224814
	02/11/2021			02/12/2021 19:58	Dale L. Simmons	2224811
	02/11/2021			02/12/2021 20:20	Dale L. Simmons	2224817
SM 2540 D-2011	02/11/2021			02/15/2021 14:26	Yijie Li	2224811, 2224814, 2224817
SM 4500 F-C-2011	02/11/2021			02/18/2021 09:44	Dale L. Simmons	2224814
	02/11/2021			02/18/2021 10:39	Dale L. Simmons	2224811
	02/11/2021			02/18/2021 11:04	Dale L. Simmons	2224817

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	02/11/2021			02/17/2021 00:36	Touraj Touran	2224812
	02/11/2021			02/17/2021 00:48	Touraj Touran	2224815
	02/11/2021			02/17/2021 01:01	Touraj Touran	2224818