

Chemical Analysis Report

SE-DIST-2021-04-01-01

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

Event Description: **SMP - Stuart Boat #2**
Request ID: **RQ-2021-03-29-66**
Customer: **SE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
2199 South Rock Road
Fort Pierce, FL 34945
Attn: Drew Liddick

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 21-APR-2021 10:20

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: Manatee Pocket

Collection Date/Time: 03/31/2021 11:45

Field ID: G2SE0063

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2235457	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P395821	
	SM 2320 B-2011	Total Alkalinity	122	A	mg CaCO3/L	P396087	
	SM 2540 D-2011	TSS	5	IA	mg/L	P396103	
	SM 4500 F-C-2011	Fluoride	1.1		mg F/L	P396091	
2235458	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P396652	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.37	I	mg N/L	P396520	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P395943	
	EPA 365.1 Rev. 2.0	Total-P	0.043		mg P/L	P395984	
	SM 5310 B-2011	Organic Carbon	3.8		mg C/L	P396300	
2235459	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.017		mg P/L	P395808	
2235465	EPA 8321B	2,4-D	0.16		ug/L	P395928	MS
		Acesulfame K	0.10	U	ug/L	P395858	MS
		2,4,5-T	0.0040	U	ug/L	P395928	
		AMPA	0.10	U	ug/L	P395858	
		Sucralose	0.094		ug/L	P395858	
		Acetaminophen	0.0080	U	ug/L	P395928	MS
		Acetamiprid	0.0020	U	ug/L	P395928	
		Endothall	0.25	U	ug/L	P395858	
		Glufosinate	0.10	U	ug/L	P395858	
		Glyphosate	0.10	U	ug/L	P395858	MS
		Afidopyropen	0.0020	U	ug/L	P395928	
		Bentazon	0.020		ug/L	P395928	MS
		Benzovindiflupyr	0.0020	U	ug/L	P395928	
		Carbamazepine	8.0E-04	U	ug/L	P395928	
		Clothianidin	0.0020	U	ug/L	P395928	
		Dinotefuran	0.0020	U	ug/L	P395928	
		Diuron	0.013		ug/L	P395928	
		Fenuron	0.016	U	ug/L	P395928	
		Fluridone	0.0021	I	ug/L	P395928	
		Imazapyr	0.080		ug/L	P395928	
		Hydrocodone	0.0020	U	ug/L	P395928	
		Ibuprofen	0.020	U	ug/L	P395928	
		Imidacloprid	0.0022	I	ug/L	P395928	
		Linuron	0.0040	U	ug/L	P395928	
		Mandestrobin	0.0020	U	ug/L	P395928	
		MCP	0.0020	U	ug/L	P395928	
		Naproxen	0.0080	U	ug/L	P395928	
		Primidone	0.0040	U	ug/L	P395928	
		Pyraclostrobin	0.0020	U	ug/L	P395928	
		Thiamethoxam	0.0020	U	ug/L	P395928	
		Tolfenpyrad	0.0020	U	ug/L	P395928	
		Triclopyr	0.0040	U	ug/L	P395928	

Field ID: G2SE0063

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 8321B: MS accuracy for imazapyr could not be assessed due to high concentration of parameter in the spiked sample. The surrogate 2,4-D-d3 recovery could not be assessed due to an elevated level of 2,4-D in the sample matrix.

Sample Location: Manatee Pocket

Collection Date/Time: 03/31/2021 12:00

Field ID: FB_033121

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2235460	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P395822	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P396042	
	SM 2540 D-2011	TSS	2	U	mg/L	P396399	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P396044	
2235461	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P396568	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P396069	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P395950	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P395969	
	SM 5310 B-2011	Organic Carbon	0.50	U	mg C/L	P396052	
2235462	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P395807	
2235466	EPA 8321B	2,4-D	0.0020	U	ug/L	P395928	MS
		Acesulfame K	0.10	U	ug/L	P395858	MS
		2,4,5-T	0.0040	U	ug/L	P395928	
		AMPA	0.10	U	ug/L	P395858	
		Sucralose	0.010	U	ug/L	P395858	
		Acetaminophen	0.0080	U	ug/L	P395928	MS
		Acetamiprid	0.0020	U	ug/L	P395928	
		Endothall	0.25	U	ug/L	P395858	
		Glufosinate	0.10	U	ug/L	P395858	
		Glyphosate	0.10	U	ug/L	P395858	MS
		Afidopyropen	0.0020	U	ug/L	P395928	
		Bentazon	8.0E-04	U	ug/L	P395928	MS
		Benzovindiflupyr	0.0020	U	ug/L	P395928	
		Carbamazepine	8.0E-04	U	ug/L	P395928	
		Clothianidin	0.0020	U	ug/L	P395928	
		Dinotefuran	0.0020	U	ug/L	P395928	
		Diuron	0.0020	U	ug/L	P395928	
		Fenuron	0.016	U	ug/L	P395928	
		Fluridone	8.0E-04	U	ug/L	P395928	
		Imazapyr	0.0040	U	ug/L	P395928	
		Hydrocodone	0.0020	U	ug/L	P395928	
		Ibuprofen	0.020	U	ug/L	P395928	
		Imidacloprid	0.0020	U	ug/L	P395928	
		Linuron	0.0040	U	ug/L	P395928	
		Mandestrobin	0.0020	U	ug/L	P395928	
		MCPP	0.0020	U	ug/L	P395928	
		Naproxen	0.0080	U	ug/L	P395928	
		Primidone	0.0040	U	ug/L	P395928	
		Pyraclostrobin	0.0020	U	ug/L	P395928	
		Thiamethoxam	0.0020	U	ug/L	P395928	
		Tolfenpyrad	0.0020	U	ug/L	P395928	
		Triclopyr	0.0040	U	ug/L	P395928	
2235468	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P395805	

Field ID: FB_033121

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2235468	EPA 200.7 Rev. 4.4	Chromium	1.0	U	ug/L	P395805	
		Iron	30	U	ug/L	P395805	
		Magnesium	0.040	U	mg/L	P395805	
		Manganese	1.0	U	ug/L	P395805	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P395805	
		Aluminum	5.0	U	ug/L	P395805	
		Antimony	0.050	U	ug/L	P395805	
		Arsenic	0.050	U	ug/L	P395805	
		Beryllium	0.010	U	ug/L	P395805	
		Cadmium	0.020	U	ug/L	P395805	
		Copper	0.40	U	ug/L	P395805	
		Lead	0.20	U	ug/L	P395805	
		Nickel	0.50	U	ug/L	P395805	
		Selenium	0.20	U	ug/L	P395805	
		Silver	0.010	U	ug/L	P395917	
		Thallium	0.10	U	ug/L	P395805	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 8321B: MS accuracy for imazapyr 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 and magnesium 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: P395821

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395822

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395805

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: P395805

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
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395917

Component	Result	Code	Units
Silver	0.010	U	ug/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396568

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396652

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: P396069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396520

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395943

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395950

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395969

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395807

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395808

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

Reference Method: EPA 8321B
Batch ID: P395858

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P395858

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P395928

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	U	ug/L
Acetaminophen	0.019	I	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	0.14		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: SM 2320 B-2011
Batch ID: P396042

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

Reference Method: SM 2320 B-2011
Batch ID: P396087

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

Reference Method: SM 2540 D-2011
Batch ID: P396103

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P396399

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396044

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P396091

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P396052

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

Reference Method: SM 5310 B-2011
Batch ID: P396300

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: P395805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	101		P	85 - 115
Chromium	96.9		P	85 - 115
Iron	104		P	85 - 115
Magnesium	96.6		P	85 - 115
Manganese	98.5		P	85 - 115
Zinc	99.1		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395805

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.2		P	85 - 115
Antimony	97.4		P	85 - 115
Arsenic	93.3		P	85 - 115
Beryllium	90.2		P	85 - 115
Cadmium	94.8		P	85 - 115
Copper	91.8		P	85 - 115
Lead	95.4		P	85 - 115
Nickel	91.5		P	85 - 115
Selenium	93.3		P	85 - 115
Thallium	100		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395917

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Silver	97.0		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396568

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396652

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396069

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396520

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395943

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395950

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395969

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395984

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395807

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395808

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

Reference Method: EPA 8321B
Batch ID: P395858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	121		P	40 - 150
AMPA	106		P	40 - 150
Endothall	101		P	40 - 150
Glufosinate	104		P	40 - 150
Glyphosate	134		P	40 - 140
Sucralose	138		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P395928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	127		P	30 - 160
2,4,5-T	101		P	30 - 160
Acetaminophen	104		P	30 - 160
Acetamiprid	91.2		P	30 - 160
Afidopyropen	72.7		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P395928

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bentazon	104		P	30 - 160
Benzovindiflupyr	90.5		P	30 - 160
Carbamazepine	96.6		P	30 - 160
Clothianidin	101		P	30 - 160
Dinotefuran	97.6		P	30 - 160
Diuron	75.5		P	30 - 160
Fenuron	99.3		P	30 - 160
Fluridone	103		P	30 - 160
Hydrocodone	101		P	30 - 160
Ibuprofen	90.1		P	30 - 160
Imazapyr	110		P	30 - 160
Imidacloprid	105		P	30 - 160
Linuron	87.9		P	30 - 160
Mandestrobin	96.8		P	30 - 160
MCPP	116		P	30 - 160
Naproxen	90.4		P	30 - 160
Primidone	103		P	30 - 160
Pyraclostrobin	79.3		P	30 - 160
Thiamethoxam	105		P	30 - 160
Tolfenpyrad	57.7		P	30 - 160
Triclopyr	102		P	30 - 160

Reference Method: SM 2320 B-2011
Batch ID: P396042

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P396087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P396044

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P396091

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P396052

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	93.5		P	85 - 115

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P396300

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P395805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235131	Chromium	94.2	91.9	P/P	70 - 130
2235131	Iron	103	103	P/P	70 - 130
2235131	Manganese	99.3	95.9	P/P	70 - 130
2235131	Zinc	97.2	93.5	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395805

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235131	Aluminum	91.7	95.6	P/P	70 - 130
2235131	Antimony	101	105	P/P	70 - 130
2235131	Arsenic	104	108	P/P	70 - 130
2235131	Beryllium	104	103	P/P	70 - 130
2235131	Cadmium	88.0	93.2	P/P	70 - 130
2235131	Copper	113	116	P/P	70 - 130
2235131	Lead	101	105	P/P	70 - 130
2235131	Nickel	116	121	P/P	70 - 130
2235131	Selenium	100	102	P/P	70 - 130
2235131	Thallium	104	110	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P395917

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235136	Silver	92.5	99.5	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P396568

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235447	Ammonia-N	98.6	98.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P396652

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236300	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396069

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235395	Kjeldahl Nitrogen	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P396520

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2234957	Kjeldahl Nitrogen	101	96.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235458	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395950

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235425	NO2NO3-N	96.6	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395969

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235475	Total-P	100	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395984

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236176	Total-P	95.4	96.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395807

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235312	O-Phosphate-P	99.1	97.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395808

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235459	O-Phosphate-P	101	100	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P395858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235408	Acesulfame K	192	197	F/F	40 - 150
2235408	AMPA	118	112	P/P	40 - 150
2235408	Endothall	113	123	P/P	40 - 150
2235408	Glufosinate	96.9	108	P/P	40 - 150
2235408	Glyphosate	129	148	P/F	40 - 140
2235408	Sucralose	106	106	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P395928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235408	2,4-D	320	305	F/F	30 - 160
2235408	2,4,5-T	117	117	P/P	30 - 160
2235408	Acetaminophen	185	139	F/P	30 - 160
2235408	Acetamiprid	116	113	P/P	30 - 160
2235408	Afidopyropen	111	105	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P395928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235408	Bentazon	300	300	F/F	30 - 160
2235408	Benzovindiflupyr	101	97.6	P/P	30 - 160
2235408	Carbamazepine	115	112	P/P	30 - 160
2235408	Clothianidin	119	121	P/P	30 - 160
2235408	Dinotefuran	122	115	P/P	30 - 160
2235408	Diuron	98.1	95.9	P/P	30 - 160
2235408	Fenuron	105	98.4	P/P	30 - 160
2235408	Fluridone	115	114	P/P	30 - 160
2235408	Hydrocodone	131	123	P/P	30 - 160
2235408	Ibuprofen	97.7	98.6	P/P	30 - 160
2235408	Imidacloprid	148	144	P/P	30 - 160
2235408	Linuron	97.3	87.1	P/P	30 - 160
2235408	Mandestrobin	100	97.2	P/P	30 - 160
2235408	MCPP	135	134	P/P	30 - 160
2235408	Naproxen	102	109	P/P	30 - 160
2235408	Primidone	119	117	P/P	30 - 160
2235408	Pyraclostrobin	93.5	82.5	P/P	30 - 160
2235408	Thiamethoxam	138	136	P/P	30 - 160
2235408	Tolfenpyrad	67.0	58.2	P/P	30 - 160
2235408	Triclopyr	124	121	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P396091

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235457	Fluoride	95.8	96.5	P/P	94 - 107

Reference Method: SM 5310 B-2011

Batch ID: P396052

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2235317	Organic Carbon	95.2	95.9	P/P	85 - 115

Reference Method: SM 5310 B-2011

Batch ID: P396300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2236177	Organic Carbon	92.2	92.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235365	Turbidity	4.16	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P395822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235471	Turbidity	0.778	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P395805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235131	Calcium	1.01	Spike	P	0 - 20
2235131	Chromium	2.21	Spike	P	0 - 20
2235131	Iron	0.176	Spike	P	0 - 20
2235131	Magnesium	2.19	Spike	P	0 - 20
2235131	Manganese	3.53	Spike	P	0 - 20
2235131	Zinc	3.84	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395805

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235131	Aluminum	4.07	Spike	P	0 - 20
2235131	Antimony	4.43	Spike	P	0 - 20
2235131	Arsenic	4.00	Spike	P	0 - 20
2235131	Beryllium	0.735	Spike	P	0 - 20
2235131	Cadmium	5.73	Spike	P	0 - 20
2235131	Copper	2.88	Spike	P	0 - 20
2235131	Lead	3.89	Spike	P	0 - 20
2235131	Nickel	3.94	Spike	P	0 - 20
2235131	Selenium	1.32	Spike	P	0 - 20
2235131	Thallium	5.88	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P395917

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235136	Silver	7.30	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396568

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235447	Ammonia-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P396652

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236300	Ammonia-N	0.323	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235395	Kjeldahl Nitrogen	0.608	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P396520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2234957	Kjeldahl Nitrogen	3.14	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235458	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P395950

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235425	NO2NO3-N	0.454	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395969

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235475	Total-P	2.13	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P395984

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236176	Total-P	1.56	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395807

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235312	O-Phosphate-P	1.20	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P395808

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235459	O-Phosphate-P	0.256	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P395858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235408	Acesulfame K	2.67	Spike	P	0 - 30
2235408	AMPA	4.83	Spike	P	0 - 30
2235408	Endothall	8.60	Spike	P	0 - 30
2235408	Glufosinate	11.3	Spike	P	0 - 30
2235408	Glyphosate	13.2	Spike	P	0 - 30
2235408	Sucralose	0.533	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P395928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235408	2,4-D	4.70	Spike	P	0 - 30
2235408	2,4,5-T	0.565	Spike	P	0 - 30
2235408	Acetaminophen	28.1	Spike	P	0 - 30
2235408	Acetamiprid	2.29	Spike	P	0 - 30
2235408	Afidopyropen	5.53	Spike	P	0 - 30
2235408	Bentazon	0.0691	Spike	P	0 - 30
2235408	Benzovindiflupyr	3.29	Spike	P	0 - 30
2235408	Carbamazepine	2.16	Spike	P	0 - 30
2235408	Clothianidin	1.44	Spike	P	0 - 30
2235408	Dinotefuran	5.68	Spike	P	0 - 30
2235408	Diuron	2.26	Spike	P	0 - 30
2235408	Fenuron	6.78	Spike	P	0 - 30
2235408	Fluridone	0.833	Spike	P	0 - 30
2235408	Hydrocodone	6.47	Spike	P	0 - 30
2235408	Ibuprofen	0.905	Spike	P	0 - 30
2235408	Imazapyr	2.53	Spike	P	0 - 30
2235408	Imidacloprid	2.74	Spike	P	0 - 30
2235408	Linuron	11.1	Spike	P	0 - 30
2235408	Mandestrobin	3.07	Spike	P	0 - 30
2235408	MCP	0.726	Spike	P	0 - 30
2235408	Naproxen	6.52	Spike	P	0 - 30
2235408	Primidone	1.75	Spike	P	0 - 30
2235408	Pyraclostrobin	12.6	Spike	P	0 - 30
2235408	Thiamethoxam	1.69	Spike	P	0 - 30
2235408	Tolfenpyrad	14.2	Spike	P	0 - 30
2235408	Triclopyr	2.21	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P396042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P396042

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235759	Total Alkalinity	0.609	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P396087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235457	Total Alkalinity	2.60	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P396044

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235759	Fluoride	0.502	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P396091

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235457	Fluoride	0.495	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P396052

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2235317	Organic Carbon	0.479	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P396300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2236177	Organic Carbon	0.335	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2235465

Field Sample ID: G2SE0063

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	111	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.6	P	30 - 160
EPA 8321B	Diuron-d6	74.9	P	30 - 160
EPA 8321B	Endothall-d6	81.2	P	40 - 160
EPA 8321B	Endothall-d6	81.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.2	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	41.2	P	40 - 160
EPA 8321B	Ibuprofen-d3	117	P	30 - 160
EPA 8321B	Primidone-d5	130	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160

Lab Sample ID: 2235466

Field Sample ID: FB_033121

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	153	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	120	P	30 - 160
EPA 8321B	Diuron-d6	98.8	P	30 - 160
EPA 8321B	Endothall-d6	91.4	P	40 - 160
EPA 8321B	Endothall-d6	91.4	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	124	P	40 - 160
EPA 8321B	Glyphosate 13C 15N	124	P	40 - 160
EPA 8321B	Ibuprofen-d3	136	P	30 - 160
EPA 8321B	Primidone-d5	128	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	30 - 160
EPA 8321B	Sucralose-d6	92.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A104426

Included Lab Sample IDs: 2235459, 2235462

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A104429

Included Lab Sample IDs: 2235457, 2235460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105
Turbidity	101	100	P/P	95 - 105

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104464

Included Lab Sample IDs: 2235468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.3	97.5	P/P	90 - 110
Antimony	94.6	96.3	P/P	90 - 110
Arsenic	95.0	98.0	P/P	90 - 110
Beryllium	93.9	101	P/P	90 - 110
Cadmium	94.3	94.8	P/P	90 - 110
Copper	94.4	98.8	P/P	90 - 110
Lead	95.3	96.3	P/P	90 - 110
Nickel	94.9	100	P/P	90 - 110
Selenium	97.0	98.2	P/P	90 - 110
Thallium	99.0	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A104468

Included Lab Sample IDs: 2235468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Silver	97.8	98.9	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104476

Included Lab Sample IDs: 2235465, 2235466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	126	91.4	P/P	40 - 160
Acesulfame K	91.4	83.5	P/P	40 - 160
AMPA	107	94.6	P/P	40 - 160
AMPA	94.6	88.4	P/P	40 - 160
Endothall	66.0	77.8	P/P	40 - 160
Endothall	71.9	66.0	P/P	40 - 160
Glufosinate	82.2	84.5	P/P	40 - 160
Glufosinate	84.5	94.7	P/P	40 - 160
Glyphosate	136	127	P/P	40 - 160
Glyphosate	158	136	P/P	40 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104479

Included Lab Sample IDs: 2235458

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A104482

Included Lab Sample IDs: 2235461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104507

Included Lab Sample IDs: 2235461

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

Reference Method: SM 2320 B-2011

Run ID: A104518

Included Lab Sample IDs: 2235460

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.8	101	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104518

Included Lab Sample IDs: 2235460

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A104520

Included Lab Sample IDs: 2235468

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	96.0	94.8	P/P	90 - 110
Chromium	97.0	95.5	P/P	90 - 110
Iron	98.2	96.7	P/P	90 - 110
Magnesium	93.8	92.8	P/P	90 - 110
Manganese	94.9	94.8	P/P	90 - 110
Zinc	99.2	97.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104530

Included Lab Sample IDs: 2235461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	96.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A104549

Included Lab Sample IDs: 2235457

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	98.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A104549

Included Lab Sample IDs: 2235457

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A104554

Included Lab Sample IDs: 2235458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	97.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A104557

Included Lab Sample IDs: 2235465, 2235466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	126	132	P/P	60 - 160
Sucralose	154	103	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A104599

Included Lab Sample IDs: 2235465, 2235466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	108	108	P/P	50 - 150
2,4-D	108	121	P/P	50 - 150
2,4,5-T	111	126	P/P	50 - 150
2,4,5-T	114	111	P/P	50 - 150
Acetaminophen	117	135	P/P	60 - 160
Acetaminophen	121	117	P/P	60 - 160
Acetamiprid	123	126	P/P	50 - 150
Acetamiprid	126	139	P/P	50 - 150
Afidopyropen	104	137	P/P	50 - 150
Afidopyropen	137	131	P/P	50 - 150
Bentazon	116	123	P/P	50 - 160
Bentazon	123	135	P/P	50 - 160
Benzovindiflupyr	129	150	P/P	50 - 160
Benzovindiflupyr	130	129	P/P	50 - 160
Carbamazepine	128	139	P/P	60 - 150
Carbamazepine	132	128	P/P	60 - 150
Clothianidin	115	119	P/P	60 - 150
Clothianidin	119	146	P/P	60 - 150
Dinotefuran	113	133	P/P	50 - 150
Dinotefuran	116	113	P/P	50 - 150
Diuron	128	141	P/P	60 - 160
Diuron	133	128	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A104599

Included Lab Sample IDs: 2235465, 2235466

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	93.7	101	P/P	60 - 150
Fenuron	96.9	93.7	P/P	60 - 150
Fluridone	114	134	P/P	60 - 160
Fluridone	122	114	P/P	60 - 160
Hydrocodone	121	144	P/P	60 - 150
Hydrocodone	128	121	P/P	60 - 150
Ibuprofen	101	111	P/P	50 - 160
Ibuprofen	99.6	101	P/P	50 - 160
Imazapyr	118	148	P/P	50 - 160
Imazapyr	130	118	P/P	50 - 160
Imidacloprid	120	122	P/P	60 - 150
Imidacloprid	122	132	P/P	60 - 150
Linuron	127	147	P/P	60 - 150
Linuron	129	127	P/P	60 - 150
Mandestrobin	115	132	P/P	50 - 150
Mandestrobin	124	115	P/P	50 - 150
MCPPP	115	124	P/P	50 - 150
MCPPP	124	130	P/P	50 - 150
Naproxen	119	150	P/P	50 - 160
Naproxen	84.6	119	P/P	50 - 160
Primidone	117	122	P/P	60 - 150
Primidone	122	134	P/P	60 - 150
Pyraclostrobin	115	133	P/P	60 - 150
Pyraclostrobin	121	115	P/P	60 - 150
Thiamethoxam	122	137	P/P	50 - 150
Thiamethoxam	126	122	P/P	50 - 150
Tolfenpyrad	121	138	P/P	60 - 150
Tolfenpyrad	125	121	P/P	60 - 150
Triclopyr	114	130	P/P	50 - 150
Triclopyr	130	129	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104602

Included Lab Sample IDs: 2235461

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.6	96.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A104628

Included Lab Sample IDs: 2235458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.4	94.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104733

Included Lab Sample IDs: 2235461

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A104751

Included Lab Sample IDs: 2235458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	106	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A104770

Included Lab Sample IDs: 2235458

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	97.8	98.1	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					4.16	
	Turbidity					0.778	
EPA 200.7 Rev. 4.4	Calcium	101					1.01
	Chromium	96.9	94.2	91.9			2.21
	Iron	104	103	103			0.176
	Magnesium	96.6					2.19
	Manganese	98.5	99.3	95.9			3.53
	Zinc	99.1	97.2	93.5			3.84
EPA 200.8 Rev. 5.4	Aluminum	91.2	91.7	95.6			4.07
	Antimony	97.4	101	105			4.43
	Arsenic	93.3	104	108			4.00
	Beryllium	90.2	104	103			0.735
	Cadmium	94.8	88.0	93.2			5.73
	Copper	91.8	113	116			2.88
	Lead	95.4	101	105			3.89
	Nickel	91.5	116	121			3.94
	Selenium	93.3	100	102			1.32
	Silver	97.0	92.5	99.5			7.30
	Thallium	100	104	110			5.88
EPA 350.1 Rev. 2.0	Ammonia-N	99.2	98.6	98.6			0.0
	Ammonia-N	98.2	101	101			0.323
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	103	104			0.608
	Kjeldahl Nitrogen	105	101	96.8			3.14
EPA 353.2 Rev. 2.0	NO2NO3-N	100	99.5	99.5			0.0
	NO2NO3-N	100	96.6	97.0			0.454
EPA 365.1 Rev. 2.0	Total-P	100	100	103			2.13
	Total-P	104	95.4	96.9			1.56
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.8	99.1	97.7			1.20
	O-Phosphate-P	99.1	101	100			0.256
EPA 8321B	2,4-D	127	320	305			4.70
	2,4,5-T	101	117	117			0.565
	Acesulfame K	121	192	197			2.67
	Acetaminophen	104	185	139			28.1
	Acetamiprid	91.2	116	113			2.29
	Afidopyropen	72.7	111	105			5.53
	AMPA	106	118	112			4.83
	Bentazon	104	300	300			0.0691
	Benzovindiflupyr	90.5	101	97.6			3.29
	Carbamazepine	96.6	115	112			2.16
	Clothianidin	101	119	121			1.44
	Dinotefuran	97.6	122	115			5.68
	Diuron	75.5	98.1	95.9			2.26
	Endothall	101	113	123			8.60
	Fenuron	99.3	105	98.4			6.78
	Fluridone	103	115	114			0.833
	Glufosinate	104	96.9	108			11.3
	Glyphosate	134	129	148			13.2
	Hydrocodone	101	131	123			6.47
	Ibuprofen	90.1	97.7	98.6			0.905
	Imazapyr	110					2.53
	Imidacloprid	105	148	144			2.74
	Linuron	87.9	97.3	87.1			11.1
	Mandestrobin	96.8	100	97.2			3.07
	MCPP	116	135	134			0.726

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	90.4	102	109		6.52
	Primidone	103	119	117		1.75
	Pyraclostrobin	79.3	93.5	82.5		12.6
	Sucralose	138	106	106		0.533
	Thiamethoxam	105	138	136		1.69
	Tolfenpyrad	57.7	67.0	58.2		14.2
	Triclopyr	102	124	121		2.21
SM 2320 B-2011	Total Alkalinity	100			0.609	
	Total Alkalinity	101			2.60	
SM 4500 F-C-2011	Fluoride	99.0				0.502
	Fluoride	97.9	95.8	96.5		0.495
SM 5310 B-2011	Organic Carbon	93.5	95.2	95.9		0.479
	Organic Carbon	95.4	92.2	92.6		0.335

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2235457, 2235460
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2235468
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2235468
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2235458, 2235461
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2235458, 2235461
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2235458, 2235461
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2235458, 2235461
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2235459, 2235462
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2235465, 2235466
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2235465, 2235466
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2235457, 2235460
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2235457, 2235460
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2235457, 2235460
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2235458, 2235461

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	04/01/2021			04/01/2021 15:12	Yen Ta	2235457, 2235460
EPA 200.7 Rev. 4.4	04/01/2021	04/01/2021 15:00	Elliott D. Healy	04/06/2021 18:28	Betina Topolski	2235468
EPA 200.8 Rev. 5.4	04/01/2021	04/01/2021 15:00	Elliott D. Healy	04/02/2021 17:13	Alexander Thompson	2235468
	04/01/2021	04/04/2021 09:05	Alexander Thompson	04/04/2021 16:36	Alexander Thompson	2235468
EPA 350.1 Rev. 2.0	04/01/2021			04/14/2021 18:01	Ping Hua	2235461
	04/01/2021			04/15/2021 20:05	Ping Hua	2235458
EPA 351.2 Rev. 2.0	04/01/2021	04/07/2021 12:41	Yen Ta	04/08/2021 17:00	Virginia P. Brown	2235461
	04/01/2021	04/14/2021 16:53	Benjamin T. Nordmann	04/15/2021 10:30	Virginia P. Brown	2235458
EPA 353.2 Rev. 2.0	04/01/2021			04/05/2021 08:33	Beverly Y. Sanders	2235458
	04/01/2021			04/05/2021 11:17	Beverly Y. Sanders	2235461
EPA 365.1 Rev. 2.0	04/01/2021	04/05/2021 12:50	Yen Ta	04/06/2021 12:42	Shengyu Ding	2235461
	04/01/2021	04/06/2021 20:10	Madeline Gruver	04/07/2021 13:07	Shengyu Ding	2235458
EPA 365.1 Rev. 2.0 dissolved	04/01/2021			04/01/2021 13:46	Lipi Saha	2235462
	04/01/2021			04/01/2021 13:49	Lipi Saha	2235459
EPA 8321B	04/01/2021	04/02/2021 11:45	Rebecca Ware	04/02/2021 14:04	Rebecca Ware	2235465
	04/01/2021	04/02/2021 11:45	Rebecca Ware	04/02/2021 14:33	Rebecca Ware	2235466
	04/01/2021	04/02/2021 11:45	Rebecca Ware	04/06/2021 18:48	Rebecca Ware	2235465
	04/01/2021	04/02/2021 11:45	Rebecca Ware	04/07/2021 11:29	Rebecca Ware	2235466
	04/01/2021	04/05/2021 09:00	Hoor Shaik	04/08/2021 02:44	Juyoung Kim	2235465
	04/01/2021	04/05/2021 09:00	Hoor Shaik	04/08/2021 03:53	Juyoung Kim	2235466
SM 2320 B-2011	04/01/2021			04/06/2021 06:26	Dale L. Simmons	2235460
	04/01/2021			04/06/2021 23:11	Dale L. Simmons	2235457
SM 2540 D-2011	04/01/2021			04/06/2021 15:05	Yijie Li	2235457, 2235460
SM 4500 F-C-2011	04/01/2021			04/06/2021 06:26	Dale L. Simmons	2235460
	04/01/2021			04/06/2021 19:46	Dale L. Simmons	2235457
SM 5310 B-2011	04/01/2021			04/06/2021 01:53	Madeline Gruver	2235461
	04/01/2021			04/08/2021 06:36	Touraj Touran	2235458