

Chemical Analysis Report

SO-DIST-2020-09-01-01

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

Event Description: **Charlotte Cricks**
Request ID: **RQ-2020-08-24-36**
Customer: **SO-DIST**
Project ID: **SMP**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 22-SEP-2020 10:06



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Metals, Nutrients and Pesticides.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Big Slough @ Butler Park

Collection Date/Time: 08/31/2020 09:20

Field ID: G3SD0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193337	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P386821	
	EPA 300.0 Rev. 2.1	Bromide	0.19		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	80		mg CaCO3/L	P386894	
	SM 2540 D-2011	TSS	4	I	mg/L	P387185	
	SM 4500 F-C-2011	Fluoride	0.33		mg F/L	P386898	
2193338	EPA 350.1 Rev. 2.0	Ammonia-N	0.046		mg N/L	P387026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P386876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.10		mg N/L	P386842	
	EPA 365.1 Rev. 2.0	Total-P	0.38		mg P/L	P386855	
	SM 5310 B-2011	Organic Carbon	27		mg C/L	P387199	
2193339	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.29		mg P/L	P386825	
2193355	EPA 200.7 Rev. 4.4	Iron	1.24E+03		ug/L	P386852	
		Magnesium	16.1		mg/L	P386852	
		Zinc	5.0	U	ug/L	P386852	
	EPA 200.8 Rev. 5.4	Aluminum	84		ug/L	P386852	
		Antimony	0.080	I	ug/L	P386852	
		Arsenic	1.98		ug/L	P386852	
		Cadmium	0.020	U	ug/L	P386852	
		Chromium	0.80	I	ug/L	P386852	
		Copper	0.93		ug/L	P387326	
		Lead	0.20	U	ug/L	P386852	
		Nickel	0.74	I	ug/L	P386852	
		Selenium	0.23	I	ug/L	P386852	
		Silver	0.010	U	ug/L	P386852	
		Thallium	0.10	U	ug/L	P386852	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Big Slough Canal

Collection Date/Time: 08/31/2020 09:50

Field ID: G3SD0161

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193340	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P386821	
	EPA 300.0 Rev. 2.1	Bromide	0.26		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	123		mg CaCO3/L	P386894	
	SM 2540 D-2011	TSS	12		mg/L	P387185	
	SM 4500 F-C-2011	Fluoride	0.35		mg F/L	P386898	
2193341	EPA 350.1 Rev. 2.0	Ammonia-N	0.10		mg N/L	P387026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P386876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.093		mg N/L	P386842	
	EPA 365.1 Rev. 2.0	Total-P	0.39		mg P/L	P386855	
	SM 5310 B-2011	Organic Carbon	23		mg C/L	P387199	
2193342	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.22		mg P/L	P386825	
2193356	EPA 200.7 Rev. 4.4	Iron	1.51E+03		ug/L	P386852	
		Magnesium	15.7		mg/L	P386852	
		Zinc	5.0	U	ug/L	P386852	
	EPA 200.8 Rev. 5.4	Aluminum	124		ug/L	P386852	
		Antimony	0.13	I	ug/L	P386852	
		Arsenic	2.47		ug/L	P386852	
		Cadmium	0.020	U	ug/L	P386852	
		Chromium	0.90	I	ug/L	P386852	
		Copper	0.93		ug/L	P387326	
		Lead	0.20	U	ug/L	P386852	
		Nickel	0.79	I	ug/L	P386852	
		Selenium	0.28	I	ug/L	P386852	
		Silver	0.010	U	ug/L	P386852	
		Thallium	0.10	U	ug/L	P386852	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Cleveland Cemetary Ditch @ Riverside Rd

Collection Date/Time: 08/31/2020 08:40

Field ID: G3SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193331	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P386821	
	EPA 300.0 Rev. 2.1	Bromide	1.1		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	176		mg CaCO3/L	P386894	
	SM 2540 D-2011	TSS	2	U	mg/L	P387185	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P386898	
2193333	EPA 350.1 Rev. 2.0	Ammonia-N	0.074		mg N/L	P387026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P386954	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.029		mg N/L	P386841	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P386855	
	SM 5310 B-2011	Organic Carbon	28		mg C/L	P387199	
2193335	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P386824	
2193353	EPA 8321B	2,4-D	0.010		ug/L	P386810	
		Acesulfame K**	1.0	UJ	ug/L	P386879	MS
		AMPA**	1.5	I	ug/L	P386879	
		Sucralose**	0.36	J	ug/L	P386879	MS
		Acetaminophen**	0.0080	U	ug/L	P386810	
		Endothall**	2.5	U	ug/L	P386879	
		Acetamiprid**	0.0020	U	ug/L	P386810	
		Glufosinate**	1.0	UJ	ug/L	P386879	MS
		Glyphosate**	1.4	IJ	ug/L	P386879	MS
		Afidopyropen**	0.0020	U	ug/L	P386810	
		Bentazon	0.0043		ug/L	P386810	
		Benzovindiflupyr**	0.0020	U	ug/L	P386810	
		Carbamazepine**	0.0047		ug/L	P386810	
		Clothianidin**	0.0020	U	ug/L	P386810	
		Dinotefuran**	0.0035	I	ug/L	P386810	
		Diuron	0.0020	U	ug/L	P386810	
		Fenuron	0.016	U	ug/L	P386810	
		Fluridone**	0.0013	I	ug/L	P386810	
		Imazapyr**	0.96		ug/L	P386810	
		Hydrocodone**	0.0020	U	ug/L	P386810	
		Ibuprofen**	0.020	U	ug/L	P386810	
		Imidacloprid	0.016		ug/L	P386810	
		Linuron	0.0040	U	ug/L	P386810	
		Mandestrobin**	0.0020	U	ug/L	P386810	
		MCP	0.0020	U	ug/L	P386810	
		Naproxen**	0.0080	U	ug/L	P386810	
		Primidone**	0.0040	U	ug/L	P386810	
		Pyraclostrobin**	0.0020	U	ug/L	P386810	
		Thiamethoxam**	0.0020	U	ug/L	P386810	
		Tolfenpyrad**	0.0020	U	ug/L	P386810	
		Triclopyr**	0.0040	U	ug/L	P386810	

Field ID: G3SD0076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
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.
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: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Myakka River (tidal) @ US 41

Collection Date/Time: 08/31/2020 10:15

Field ID: G3SD0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2193332	EPA 180.1 Rev. 2.0	Turbidity	5.6		NTU	P386821	
	EPA 300.0 Rev. 2.1	Bromide	0.22		mg Br/L	P387263	
	SM 2320 B-2011	Total Alkalinity	52	A	mg CaCO3/L	P386894	
	SM 2540 D-2011	TSS	17		mg/L	P387185	
	SM 4500 F-C-2011	Fluoride	0.21		mg F/L	P386898	
2193334	EPA 350.1 Rev. 2.0	Ammonia-N	0.045		mg N/L	P387026	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P386876	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P386841	
	EPA 365.1 Rev. 2.0	Total-P	0.29		mg P/L	P386855	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P387199	
2193336	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.21		mg P/L	P386824	
2193354	EPA 8321B	2,4-D	0.012		ug/L	P386810	
		Acesulfame K**	0.10	U	ug/L	P386879	MS
		AMPA**	0.81		ug/L	P386879	
		Sucralose**	0.066		ug/L	P386879	MS
		Acetaminophen**	0.0080	U	ug/L	P386810	
		Acetamiprid**	0.0020	U	ug/L	P386810	
		Endothall**	0.25	U	ug/L	P386879	
		Glufosinate**	0.10	U	ug/L	P386879	MS
		Glyphosate**	4.2		ug/L	P386879	MS
		Afidopyropen**	0.0020	U	ug/L	P386810	
		Bentazon	0.0078		ug/L	P386810	
		Benzovindiflupyr**	0.0020	U	ug/L	P386810	
		Carbamazepine**	8.0E-04	U	ug/L	P386810	
		Clothianidin**	0.0020	U	ug/L	P386810	
		Dinotefuran**	0.0076	I	ug/L	P386810	
		Diuron	0.0038	I	ug/L	P386810	
		Fenuron	0.016	U	ug/L	P386810	
		Fluridone**	0.0054		ug/L	P386810	
		Imazapyr**	0.41		ug/L	P386810	
		Hydrocodone**	0.0020	U	ug/L	P386810	
		Ibuprofen**	0.020	U	ug/L	P386810	
		Imidacloprid	0.015		ug/L	P386810	
		Linuron	0.0040	U	ug/L	P386810	
		Mandestrobin**	0.0020	U	ug/L	P386810	
		MCP	0.0020	U	ug/L	P386810	
		Naproxen**	0.0080	U	ug/L	P386810	
		Primidone**	0.0040	U	ug/L	P386810	
		Pyraclostrobin**	0.0020	U	ug/L	P386810	
		Thiamethoxam**	0.0041	I	ug/L	P386810	
		Tolfenpyrad**	0.0020	U	ug/L	P386810	
		Triclopyr**	0.0040	U	ug/L	P386810	

Field ID: G3SD0068

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
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Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Bromide: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.
SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 351.2 Rev. 2.0: 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.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386821

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386852

Component	Result	Code	Units
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386852

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	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 200.8 Rev. 5.4
Batch ID: P387326

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387026

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386876

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: P386954

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386842

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386855

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386824

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386825

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

Reference Method: EPA 8321B
Batch ID: P386810

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
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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P386810

Component	Result	Code	Units
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCP	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: P386879

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: P386894

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

Reference Method: SM 2540 D-2011
Batch ID: P387185

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P386898

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387199

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: P386852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	110		P	85 - 115
Magnesium	108		P	85 - 115
Zinc	108		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386852

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	94.0		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	97.9		P	85 - 115
Cadmium	97.9		P	85 - 115
Chromium	102		P	85 - 115
Lead	99.2		P	85 - 115
Nickel	94.8		P	85 - 115
Selenium	96.9		P	85 - 115
Silver	106		P	85 - 115
Thallium	99.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387326

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	94.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387026

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386876

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386954

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.2		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386841

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386842

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386855

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386824

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386825

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

Reference Method: EPA 8321B
Batch ID: P386810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.1		P	30 - 160
Acetaminophen	92.7		P	30 - 160
Acetamiprid	75.6		P	30 - 160
Afidopyropen	56.9		P	30 - 160
Bentazon	75.0		P	30 - 160
Benzovindiflupyr	71.8		P	30 - 160
Carbamazepine	64.1		P	30 - 160
Clothianidin	89.3		P	30 - 160
Dinotefuran	100		P	30 - 160
Diuron	66.9		P	30 - 160
Fenuron	105		P	30 - 160
Fluridone	77.3		P	30 - 160
Hydrocodone	93.4		P	30 - 160
Ibuprofen	77.7		P	30 - 160
Imazapyr	80.5		P	30 - 160
Imidacloprid	105		P	30 - 160
Linuron	75.9		P	30 - 160
Mandestrobin	77.5		P	30 - 160
MCPP	101		P	30 - 160
Naproxen	47.6		P	30 - 160
Primidone	87.0		P	30 - 160
Pyraclostrobin	57.6		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P386810

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Thiamethoxam	90.6		P	30 - 160
Tolfenpyrad	44.7		P	30 - 160
Triclopyr	63.1		P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386879

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	72.7		P	40 - 150
AMPA	84.7		P	40 - 150
Endothall	107		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	108		P	40 - 140
Sucralose	104		P	40 - 150

Reference Method: SM 2320 B-2011
Batch ID: P386894

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

Reference Method: SM 4500 F-C-2011
Batch ID: P386898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387199

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193388	Iron	110	108	P/P	80 - 120
2193388	Magnesium	107		P	80 - 120
2193388	Zinc	112	109	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386852

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193388	Aluminum	83.0	92.7	P/P	80 - 120
2193388	Antimony	100	102	P/P	80 - 120
2193388	Arsenic	99.0	101	P/P	80 - 120
2193388	Cadmium	100	102	P/P	80 - 120
2193388	Chromium	103	105	P/P	80 - 120
2193388	Lead	98.0	101	P/P	80 - 120
2193388	Nickel	92.9	94.6	P/P	80 - 120
2193388	Selenium	97.1	98.2	P/P	80 - 120
2193388	Silver	104	106	P/P	80 - 120
2193388	Thallium	104	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387326

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193356	Copper	102	101	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193332	Bromide	92.0	91.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387026

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193456	Ammonia-N	97.3	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386954

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193720	Kjeldahl Nitrogen	103	95.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386841

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193227	NO2NO3-N	98.0	98.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386842

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193338	NO2NO3-N	97.0	97.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386855

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193268	Total-P	108	110	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386824

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193228	O-Phosphate-P	98.6	98.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P386810

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193354	2,4-D	91.3	88.1	P/P	30 - 160
2193354	Acetaminophen	77.5	81.7	P/P	30 - 160
2193354	Acetamiprid	67.1	68.2	P/P	30 - 160
2193354	Afidopyropen	53.5	53.1	P/P	30 - 160
2193354	Bentazon	39.6	46.3	P/P	30 - 160
2193354	Benzovindiflupyr	64.8	63.2	P/P	30 - 160
2193354	Carbamazepine	53.9	56.6	P/P	30 - 160
2193354	Clothianidin	59.9	61.4	P/P	30 - 160
2193354	Dinotefuran	78.8	83.2	P/P	30 - 160
2193354	Diuron	54.1	52.8	P/P	30 - 160
2193354	Fenuron	68.2	72.4	P/P	30 - 160
2193354	Fluridone	75.4	94.7	P/P	30 - 160
2193354	Hydrocodone	64.7	70.3	P/P	30 - 160
2193354	Ibuprofen	83.5	71.2	P/P	30 - 160
2193354	Imidacloprid	109	118	P/P	30 - 160
2193354	Linuron	67.1	68.9	P/P	30 - 160
2193354	Mandestrobin	70.5	75.6	P/P	30 - 160
2193354	MCP	111	110	P/P	30 - 160
2193354	Naproxen	49.2	63.2	P/P	30 - 160
2193354	Primidone	76.8	79.3	P/P	30 - 160
2193354	Pyraclostrobin	59.1	60.2	P/P	30 - 160
2193354	Thiamethoxam	72.7	71.8	P/P	30 - 160
2193354	Tolfenpyrad	51.7	48.2	P/P	30 - 160
2193354	Triclopyr	87.5	87.4	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P386879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193353	Acesulfame K	29.8	29.0	F/F	40 - 150
2193353	AMPA	48.6	42.7	P/P	40 - 150
2193353	Endothall	90.2	106	P/P	40 - 150
2193353	Glufosinate	182	152	F/F	40 - 150
2193353	Glyphosate	510	446	F/F	40 - 140

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P386879

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193353	Sucralose	22.1	19.2	F/F	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P386898

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193332	Fluoride	100	99.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387199

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2193341	Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386821

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193379	Turbidity	6.30	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P386852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193388	Iron	2.15	Spike	P	0 - 20
2193388	Magnesium	1.93	Spike	P	0 - 20
2193388	Zinc	2.66	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P386852

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193388	Aluminum	5.01	Spike	P	0 - 20
2193388	Antimony	1.70	Spike	P	0 - 20
2193388	Arsenic	1.75	Spike	P	0 - 20
2193388	Cadmium	1.65	Spike	P	0 - 20
2193388	Chromium	1.85	Spike	P	0 - 20
2193388	Lead	2.64	Spike	P	0 - 20
2193388	Nickel	1.70	Spike	P	0 - 20
2193388	Selenium	1.14	Spike	P	0 - 20
2193388	Silver	1.44	Spike	P	0 - 20
2193388	Thallium	3.23	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387326

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193356	Copper	0.768	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P387263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193332	Bromide	0.341	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193456	Ammonia-N	2.39	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386876

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193334	Kjeldahl Nitrogen	0.258	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386954

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193720	Kjeldahl Nitrogen	5.92	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193227	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193338	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386855

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193268	Total-P	1.80	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386824

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193228	O-Phosphate-P	0.206	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193339	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P386810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193354	2,4-D	3.11	Spike	P	0 - 30
2193354	Acetaminophen	5.28	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P386810

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193354	Acetamiprid	1.62	Spike	P	0 - 30
2193354	Afidopyropen	0.775	Spike	P	0 - 30
2193354	Bentazon	4.84	Spike	P	0 - 30
2193354	Benzovindiflupyr	2.40	Spike	P	0 - 30
2193354	Carbamazepine	4.85	Spike	P	0 - 30
2193354	Clothianidin	2.53	Spike	P	0 - 30
2193354	Dinotefuran	4.79	Spike	P	0 - 30
2193354	Diuron	2.22	Spike	P	0 - 30
2193354	Fenuron	5.91	Spike	P	0 - 30
2193354	Fluridone	17.2	Spike	P	0 - 30
2193354	Hydrocodone	8.37	Spike	P	0 - 30
2193354	Ibuprofen	15.8	Spike	P	0 - 30
2193354	Imazapyr	7.74	Spike	P	0 - 30
2193354	Imidacloprid	6.78	Spike	P	0 - 30
2193354	Linuron	2.58	Spike	P	0 - 30
2193354	Mandestrobin	7.03	Spike	P	0 - 30
2193354	MCPP	0.860	Spike	P	0 - 30
2193354	Naproxen	24.9	Spike	P	0 - 30
2193354	Primidone	3.13	Spike	P	0 - 30
2193354	Pyraclostrobin	1.77	Spike	P	0 - 30
2193354	Thiamethoxam	1.14	Spike	P	0 - 30
2193354	Tolfenpyrad	6.96	Spike	P	0 - 30
2193354	Triclopyr	0.124	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P386879

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193353	Acesulfame K	2.76	Spike	P	0 - 30
2193353	AMPA	5.28	Spike	P	0 - 30
2193353	Endothall	16.4	Spike	P	0 - 30
2193353	Glufosinate	17.7	Spike	P	0 - 30
2193353	Glyphosate	6.17	Spike	P	0 - 30
2193353	Sucralose	8.16	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P386894

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193332	Total Alkalinity	0.147	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P386898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193332	Fluoride	0.461	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P387199

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2193341	Organic Carbon	0.353	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2193353
Field Sample ID: G3SD0076

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.4	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.6	P	30 - 160
EPA 8321B	Diuron-d6	51.8	P	30 - 160
EPA 8321B	Endothall-d6	127	P	30 - 160
EPA 8321B	Endothall-d6	127	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	100	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.6	P	30 - 160
EPA 8321B	Primidone-d5	69.0	P	30 - 160
EPA 8321B	Sucralose-d6	42.7	P	30 - 160
EPA 8321B	Sucralose-d6	42.7	P	30 - 160

Lab Sample ID: 2193354
Field Sample ID: G3SD0068

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	80.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	74.5	P	30 - 160
EPA 8321B	Carbamazepine-d10	52.6	P	30 - 160
EPA 8321B	Diuron-d6	52.8	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Endothall-d6	112	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	107	P	30 - 160
EPA 8321B	Ibuprofen-d3	85.4	P	30 - 160
EPA 8321B	Primidone-d5	72.6	P	30 - 160
EPA 8321B	Sucralose-d6	48.7	P	30 - 160
EPA 8321B	Sucralose-d6	48.7	P	30 - 160

Quality Assurance Report

Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100755

Included Lab Sample IDs: 2193331, 2193332, 2193337, 2193340

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100756

Included Lab Sample IDs: 2193335, 2193336, 2193339, 2193342

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.1	97.1	P/P	90 - 110
O-Phosphate-P	97.6	97.6	P/P	90 - 110
O-Phosphate-P	97.6	98.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100774

Included Lab Sample IDs: 2193333, 2193334, 2193338, 2193341

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

Reference Method: EPA 8321B

Run ID: A100781

Included Lab Sample IDs: 2193353, 2193354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	109	104	P/P	50 - 150
2,4-D	140	109	P/P	50 - 150
Acetaminophen	136	142	P/P	60 - 160
Acetaminophen	142	128	P/P	60 - 160
Acetamiprid	141	142	P/P	50 - 150
Acetamiprid	142	138	P/P	50 - 150
Afidopyropen	101	123	P/P	50 - 150
Afidopyropen	123	109	P/P	50 - 150
Bentazon	113	125	P/P	50 - 160
Bentazon	125	151	P/P	50 - 160
Benzovindiflupyr	116	133	P/P	50 - 150
Benzovindiflupyr	133	116	P/P	50 - 150
Carbamazepine	132	135	P/P	60 - 150
Carbamazepine	135	131	P/P	60 - 150
Clothianidin	131	134	P/P	60 - 150
Clothianidin	134	114	P/P	60 - 150
Dinotefuran	118	124	P/P	50 - 150
Dinotefuran	124	112	P/P	50 - 150
Diuron	134	137	P/P	60 - 160
Diuron	137	142	P/P	60 - 160
Fenuron	127	128	P/P	60 - 150
Fenuron	129	127	P/P	60 - 150
Fluridone	102	110	P/P	60 - 160
Fluridone	110	118	P/P	60 - 160
Hydrocodone	129	132	P/P	60 - 150
Hydrocodone	132	121	P/P	60 - 150
Ibuprofen	103	63.9	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100781

Included Lab Sample IDs: 2193353, 2193354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	123	103	P/P	50 - 160
Imazapyr	106	102	P/P	50 - 160
Imidacloprid	132	138	P/P	60 - 150
Imidacloprid	138	106	P/P	60 - 150
Linuron	131	138	P/P	60 - 150
Linuron	135	131	P/P	60 - 150
Mandestrobin	128	137	P/P	50 - 150
Mandestrobin	136	128	P/P	50 - 150
MCPD	122	123	P/P	50 - 150
MCPD	123	112	P/P	50 - 150
Naproxen	103	80.8	P/P	50 - 160
Naproxen	80.8	112	P/P	50 - 160
Primidone	133	135	P/P	60 - 150
Primidone	135	117	P/P	60 - 150
Pyraclostrobin	117	117	P/P	60 - 150
Pyraclostrobin	117	106	P/P	60 - 150
Thiamethoxam	137	123	P/P	50 - 150
Thiamethoxam	140	137	P/P	50 - 150
Tolfenpyrad	117	105	P/P	60 - 150
Tolfenpyrad	121	117	P/P	60 - 150
Triclopyr	111	111	P/P	50 - 150
Triclopyr	118	111	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A100801

Included Lab Sample IDs: 2193331, 2193332, 2193337, 2193340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	100	P/P	90 - 110
Total Alkalinity	100	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100801

Included Lab Sample IDs: 2193331, 2193332, 2193337, 2193340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	102	P/P	90 - 110
Fluoride	102	99.5	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100818

Included Lab Sample IDs: 2193353, 2193354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	81.3	91.0	P/P	60 - 160
AMPA	84.3	81.3	P/P	60 - 160
Glufosinate	88.2	97.2	P/P	60 - 160
Glufosinate	97.2	96.6	P/P	60 - 160
Glyphosate	101	110	P/P	60 - 160
Glyphosate	110	112	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100820

Included Lab Sample IDs: 2193334, 2193338, 2193341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.6	P/P	90 - 110
Kjeldahl Nitrogen	96.6	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100834

Included Lab Sample IDs: 2193333, 2193334, 2193338, 2193341

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A100837

Included Lab Sample IDs: 2193355, 2193356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	104	105	P/P	90 - 110
Magnesium	103	104	P/P	90 - 110
Zinc	106	107	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100850

Included Lab Sample IDs: 2193333

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.1	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100901

Included Lab Sample IDs: 2193353, 2193354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	65.6	62.4	P/P	60 - 160
Acesulfame K	82.1	65.6	P/P	60 - 160
Endothall	106	118	P/P	60 - 160
Endothall	118	122	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A100906

Included Lab Sample IDs: 2193333, 2193334, 2193338, 2193341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.1	94.9	P/P	90 - 110
Organic Carbon	98.0	94.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100913

Included Lab Sample IDs: 2193355, 2193356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.2	95.7	P/P	90 - 110
Antimony	103	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100913

Included Lab Sample IDs: 2193355, 2193356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	96.8	97.8	P/P	90 - 110
Cadmium	95.6	95.7	P/P	90 - 110
Chromium	99.3	97.2	P/P	90 - 110
Lead	96.4	96.8	P/P	90 - 110
Nickel	93.9	95.1	P/P	90 - 110
Selenium	98.4	97.6	P/P	90 - 110
Thallium	95.7	95.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100925

Included Lab Sample IDs: 2193331, 2193332, 2193337, 2193340

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.0	99.6	P/P	90 - 110
Bromide	98.8	99.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100936

Included Lab Sample IDs: 2193353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Imazapyr	119	83.5	P/P	50 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100945

Included Lab Sample IDs: 2193355, 2193356

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

Reference Method: EPA 8321B

Run ID: A100956

Included Lab Sample IDs: 2193353, 2193354

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	105	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100993

Included Lab Sample IDs: 2193355, 2193356

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.8	100	P/P	90 - 110
Copper	97.7	96.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101043

Included Lab Sample IDs: 2193333, 2193334, 2193338, 2193341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	105	P/P	85 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101043

Included Lab Sample IDs: 2193333, 2193334, 2193338, 2193341

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	105	104	P/P	85 - 115

* 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						6.30	
EPA 200.7 Rev. 4.4	Iron	110		110	108			2.15
	Magnesium	108		107				1.93
	Zinc	108		112	109			2.66
EPA 200.8 Rev. 5.4	Aluminum	94.0		83.0	92.7			5.01
	Antimony	101		100	102			1.70
	Arsenic	97.9		99.0	101			1.75
	Cadmium	97.9		100	102			1.65
	Chromium	102		103	105			1.85
	Copper	102		102	101			0.768
	Lead	99.2		98.0	101			2.64
	Nickel	94.8		92.9	94.6			1.70
	Selenium	96.9		97.1	98.2			1.14
	Silver	106		104	106			1.44
	Thallium	99.9		104	107			3.23
EPA 300.0 Rev. 2.1	Bromide	94.0		92.0	91.6			0.341
EPA 350.1 Rev. 2.0	Ammonia-N	101		97.3	100			2.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106						0.258
	Kjeldahl Nitrogen	94.2		103	95.2			5.92
EPA 353.2 Rev. 2.0	NO2NO3-N	101		98.0	98.0			0.0
	NO2NO3-N	102		97.0	97.0			0.0
EPA 365.1 Rev. 2.0	Total-P	106		108	110			1.80
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.2		98.6	98.9			0.206
	O-Phosphate-P	99.5						0.0
EPA 8321B	2,4-D	89.1		88.1	91.3			3.11
	Acesulfame K	72.7		29.8	29.0			2.76
	Acetaminophen	92.7		77.5	81.7			5.28
	Acetamiprid	75.6		67.1	68.2			1.62
	Afidopyropen	56.9		53.5	53.1			0.775
	AMPA	84.7		48.6	42.7			5.28
	Bentazon	75.0		46.3	39.6			4.84
	Benzovindiflupyr	71.8		64.8	63.2			2.40
	Carbamazepine	64.1		53.9	56.6			4.85
	Clothianidin	89.3		59.9	61.4			2.53
	Dinotefuran	100		78.8	83.2			4.79
	Diuron	66.9		54.1	52.8			2.22
	Endothall	107		90.2	106			16.4
	Fenuron	105		68.2	72.4			5.91
	Fluridone	77.3		75.4	94.7			17.2
	Glufosinate	100		182	152			17.7
	Glyphosate	108		510	446			6.17
	Hydrocodone	93.4		64.7	70.3			8.37
	Ibuprofen	77.7		71.2	83.5			15.8
	Imazapyr	80.5						7.74
	Imidacloprid	105		109	118			6.78
	Linuron	75.9		67.1	68.9			2.58
	Mandestrobin	77.5		70.5	75.6			7.03
	MCPP	101		110	111			0.860
	Naproxen	47.6		63.2	49.2			24.9
	Primidone	87.0		76.8	79.3			3.13
	Pyraclostrobin	57.6		60.2	59.1			1.77
	Sucralose	104		22.1	19.2			8.16
	Thiamethoxam	90.6		72.7	71.8			1.14
	Tolfenpyrad	44.7		48.2	51.7			6.96

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision SMP	MS
			LCS			
EPA 8321B	Triclopyr	63.1	87.4	87.5		0.124
SM 2320 B-2011	Total Alkalinity	100			0.147	
SM 4500 F-C-2011	Fluoride	99.2	100	99.8		0.461
SM 5310 B-2011	Organic Carbon	98.6	96.6			0.353

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2193331, 2193332, 2193337, 2193340
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2193355, 2193356
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2193355, 2193356
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2193331, 2193332, 2193337, 2193340
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2193333, 2193334, 2193338, 2193341
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2193333, 2193334, 2193338, 2193341
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2193333, 2193334, 2193338, 2193341
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2193333, 2193334, 2193338, 2193341
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2193335, 2193336, 2193339, 2193342
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2193353, 2193354
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2193353, 2193354
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2193331, 2193332, 2193337, 2193340
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2193331, 2193332, 2193337, 2193340
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2193331, 2193332, 2193337, 2193340
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2193333, 2193334, 2193338, 2193341

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	09/01/2020			09/01/2020 14:24	Yen Ta	2193331, 2193332, 2193337, 2193340
EPA 200.7 Rev. 4.4	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/04/2020 17:09	Betina Topolski	2193355
	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/04/2020 17:17	Betina Topolski	2193356
EPA 200.8 Rev. 5.4	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/11/2020 00:16	Alexander Thompson	2193355
	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/11/2020 00:24	Alexander Thompson	2193356
	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/11/2020 19:08	Alexander Thompson	2193355
	09/01/2020	09/02/2020 13:20	Elliott D. Healy	09/11/2020 19:16	Alexander Thompson	2193356
	09/01/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 17:23	Alexander Thompson	2193356
	09/01/2020	09/14/2020 15:10	Elliott D. Healy	09/15/2020 18:10	Alexander Thompson	2193355
EPA 300.0 Rev. 2.1	09/01/2020			09/10/2020 02:38	Lipi Saha	2193332
	09/01/2020			09/10/2020 05:47	Lipi Saha	2193331
	09/01/2020			09/10/2020 06:04	Lipi Saha	2193337
	09/01/2020			09/10/2020 17:23	Lipi Saha	2193340
EPA 350.1 Rev. 2.0	09/01/2020			09/06/2020 11:27	Ping Hua	2193333
	09/01/2020			09/06/2020 11:29	Ping Hua	2193334
	09/01/2020			09/06/2020 11:30	Ping Hua	2193338
	09/01/2020			09/06/2020 11:32	Ping Hua	2193341
EPA 351.2 Rev. 2.0	09/01/2020	09/03/2020 09:45	Sima Feizi	09/04/2020 09:46	Elliott Rodriguez	2193334
	09/01/2020	09/03/2020 09:45	Sima Feizi	09/04/2020 09:54	Elliott Rodriguez	2193338
	09/01/2020	09/03/2020 09:45	Sima Feizi	09/04/2020 09:55	Elliott Rodriguez	2193341
	09/01/2020	09/04/2020 11:25	David Boose	09/08/2020 11:03	Elliott Rodriguez	2193333
EPA 353.2 Rev. 2.0	09/01/2020			09/02/2020 09:24	Beverly Y. Sanders	2193333
	09/01/2020			09/02/2020 09:25	Beverly Y. Sanders	2193334
	09/01/2020			09/02/2020 09:32	Beverly Y. Sanders	2193338
	09/01/2020			09/02/2020 09:43	Beverly Y. Sanders	2193341
EPA 365.1 Rev. 2.0	09/01/2020	09/02/2020 13:46	Yen Ta	09/17/2020 10:45	Lipi Saha	2193333
	09/01/2020	09/02/2020 13:46	Yen Ta	09/17/2020 10:49	Lipi Saha	2193334, 2193338
	09/01/2020	09/02/2020 13:46	Yen Ta	09/17/2020 10:50	Lipi Saha	2193341
EPA 365.1 Rev. 2.0 dissolved	09/01/2020			09/01/2020 15:38	Samantha Davila	2193339
	09/01/2020			09/01/2020 15:47	Samantha Davila	2193342
	09/01/2020			09/01/2020 16:12	Samantha Davila	2193335, 2193336
EPA 8321B	09/01/2020	09/02/2020 14:30	Hoor Shaik	09/02/2020 21:36	Mohammad Ghaffari	2193354
	09/01/2020	09/02/2020 14:30	Hoor Shaik	09/03/2020 02:48	Mohammad Ghaffari	2193353
	09/01/2020	09/02/2020 14:30	Hoor Shaik	09/09/2020 10:54	Juyoung Kim	2193353
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/03/2020 12:06	Rebecca Ware	2193354
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/03/2020 14:53	Rebecca Ware	2193353
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/04/2020 12:58	Rebecca Ware	2193354
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/04/2020 15:54	Rebecca Ware	2193353
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/10/2020 12:27	Rebecca Ware	2193353
	09/01/2020	09/03/2020 10:00	Rebecca Ware	09/10/2020 13:02	Rebecca Ware	2193354

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	09/01/2020			09/02/2020 15:28	Dale L. Simmons	2193332
	09/01/2020			09/02/2020 17:55	Dale L. Simmons	2193331
	09/01/2020			09/02/2020 18:08	Dale L. Simmons	2193337
	09/01/2020			09/02/2020 18:22	Dale L. Simmons	2193340
SM 2540 D-2011	09/01/2020			09/03/2020 15:01	Yijie Li	2193331, 2193332, 2193337, 2193340
SM 4500 F-C-2011	09/01/2020			09/02/2020 15:18	Dale L. Simmons	2193332
	09/01/2020			09/02/2020 17:55	Dale L. Simmons	2193331
	09/01/2020			09/02/2020 18:08	Dale L. Simmons	2193337
	09/01/2020			09/02/2020 18:22	Dale L. Simmons	2193340
SM 5310 B-2011	09/01/2020			09/09/2020 18:03	David Boose	2193341
	09/01/2020			09/09/2020 21:35	David Boose	2193333
	09/01/2020			09/09/2020 21:47	David Boose	2193334
	09/01/2020			09/09/2020 21:59	David Boose	2193338