

Chemical Analysis Report

WAS-SECT-2019-12-04-01

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

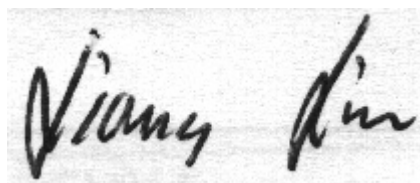
Event Description: **Talquin Tribs**
Request ID: **RQ-2019-12-02-28**
Customer: **WAS-SECT**
Project ID: **SMP**

Send Reports to:
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2600 Blair Stone Rd
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-DEC-2019 17:32

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Double Branch at CR159

Collection Date/Time: 12/04/2019 08:24

Field ID: G1WA0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140582	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P375264	
	EPA 300.0 Rev. 2.1	Chloride	6.3		mg Cl/L	P375474	
		Sulfate	0.44	I	mg SO4/L	P375476	
		Color (true)	50		PCU	P375295	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	37		mg/L	P375801	
	SM 2540 D-97	TSS	2	I	mg/L	P375900	
	SM 4500 F-C-97	Fluoride	0.059	I	mg F/L	P375486	
2140586	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P375669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.21		mg N/L	P375442	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.057		mg N/L	P375468	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P375455	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P375413	
2140590	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.031		mg P/L	P375234	
2140614	EPA 8321B	2,4-D	0.0020	U	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	0.10	U	ug/L	P375385	
		Sucralose**	0.068		ug/L	P375385	
		Acetaminophen**	0.0080	U	ug/L	P375248	
		Acetamiprid**	0.0020	U	ug/L	P375248	
		Endothall**	0.25	U	ug/L	P375385	
		Glufosinate**	0.10	U	ug/L	P375385	
		Glyphosate**	0.10	U	ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	8.0E-04	U	ug/L	P375248	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375248	
		Carbamazepine**	8.0E-04	U	ug/L	P375248	
		Clothianidin**	0.0020	U	ug/L	P375248	
		Dinotefuran**	0.0020	U	ug/L	P375248	
		Diuron	0.0020	U	ug/L	P375248	
		Fenuron	0.016	U	ug/L	P375248	
		Fluridone**	8.0E-04	U	ug/L	P375248	
		Imazapyr**	0.0040	U	ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0020	U	ug/L	P375248	
		Linuron	0.0040	U	ug/L	P375248	
		Mandestrobin**	0.0020	UJ	ug/L	P375248	
		MCPP	0.0020	U	ug/L	P375248	
		Naproxen**	0.0080	U	ug/L	P375248	
		Primidone**	0.0040	U	ug/L	P375248	
		Pyraclostrobin**	0.0020	U	ug/L	P375248	
		Thiamethoxam**	0.0020	U	ug/L	P375248	

Field ID: G1WA0091

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140614	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140626	EPA 200.7 Rev. 4.4	Barium	9.9		ug/L	P375281	
		Calcium	4.33		mg/L	P375281	
		Iron	680		ug/L	P375281	
		Magnesium	1.43		mg/L	P375281	
		Potassium	0.44	I	mg/L	P375281	
		Sodium	3.5		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	133		ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.35		ug/L	P375281	
		Boron**	10.9		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.44	I	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

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

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Richlander Creek at CR 65B

Collection Date/Time: 12/04/2019 09:39

Field ID: FB_12042019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140594	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P375265	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P375475	
		Sulfate	0.20	U	mg SO4/L	P375477	
	SM 2120 B	Color (true)	2.5	U	PCU	P375296	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P375875	
	SM 2540 C-97	TDS	15	U	mg/L	P375801	
	SM 2540 D-97	TSS	2	U	mg/L	P375900	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P375486	
2140595	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P375669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P375442	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375468	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P375612	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P375413	
2140596	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P375234	
2140618	EPA 8321B	2,4-D	0.0020	U	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	0.10	U	ug/L	P375385	
		Sucralose**	0.010	U	ug/L	P375385	
		Acetaminophen**	0.0080	U	ug/L	P375248	
		Acetamiprid**	0.0020	U	ug/L	P375248	
		Endothall**	0.25	U	ug/L	P375385	
		Glufosinate**	0.10	U	ug/L	P375385	
		Glyphosate**	0.10	U	ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	8.0E-04	U	ug/L	P375248	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375248	
		Carbamazepine**	8.0E-04	U	ug/L	P375248	
		Clothianidin**	0.0020	U	ug/L	P375248	
		Dinotefuran**	0.0020	U	ug/L	P375248	
		Diuron	0.0020	U	ug/L	P375248	
		Fenuron	0.016	U	ug/L	P375248	
		Fluridone**	8.0E-04	U	ug/L	P375248	
		Imazapyr**	0.0040	U	ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0020	U	ug/L	P375248	
		Linuron	0.0040	U	ug/L	P375248	
		Mandestrobin**	0.0020	UJ	ug/L	P375248	
		MCPP	0.0020	U	ug/L	P375248	
		Naproxen**	0.0080	U	ug/L	P375248	
		Primidone**	0.0040	U	ug/L	P375248	
		Pyraclostrobin**	0.0020	U	ug/L	P375248	
		Thiamethoxam**	0.0020	U	ug/L	P375248	

Field ID: FB_12042019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140618	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140630	EPA 200.7 Rev. 4.4	Barium	1.0	U	ug/L	P375281	
		Calcium	0.075	U	mg/L	P375281	
		Iron	30	U	ug/L	P375281	
		Magnesium	0.040	U	mg/L	P375281	
		Potassium	0.30	U	mg/L	P375281	
		Sodium	0.50	U	mg/L	P375281	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P375281	
		Aluminum	5.0	U	ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.050	U	ug/L	P375281	
		Boron**	2.0	U	ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

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

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Richlander Creek at CR 65B

Collection Date/Time: 12/04/2019 09:51

Field ID: G1WA0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140583	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P375264	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P375474	
		Sulfate	0.51	I	mg SO4/L	P375476	
	SM 2120 B	Color (true)	43		PCU	P375295	
	SM 2320 B-97	Total Alkalinity	14		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	33		mg/L	P375801	
	SM 2540 D-97	TSS	2	I	mg/L	P375900	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P375486	
2140587	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P375669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.24		mg N/L	P375442	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P375466	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P375455	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P375413	
2140591	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.023		mg P/L	P375234	
2140615	EPA 8321B	2,4-D	0.0020	U	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	0.10	U	ug/L	P375385	
		Sucralose**	0.097		ug/L	P375385	
		Acetaminophen**	0.0080	U	ug/L	P375248	
		Acetamiprid**	0.0020	U	ug/L	P375248	
		Endothall**	0.25	U	ug/L	P375385	
		Glufosinate**	0.10	U	ug/L	P375385	
		Glyphosate**	0.10	U	ug/L	P375385	
		Afidopyrophen**	0.0020	UJ	ug/L	P375248	
		Bentazon	8.0E-04	U	ug/L	P375248	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375248	
		Carbamazepine**	8.0E-04	U	ug/L	P375248	
		Clothianidin**	0.0020	U	ug/L	P375248	
		Dinotefuran**	0.0020	U	ug/L	P375248	
		Diuron	0.0020	U	ug/L	P375248	
		Fenuron	0.016	U	ug/L	P375248	
		Fluridone**	8.0E-04	U	ug/L	P375248	
		Imazapyr**	0.0040	U	ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0031	I	ug/L	P375248	
		Linuron	0.0040	U	ug/L	P375248	
		Mandestrobin**	0.0020	UJ	ug/L	P375248	
		MCP	0.0020	U	ug/L	P375248	
		Naproxen**	0.0080	U	ug/L	P375248	
		Primidone**	0.0040	U	ug/L	P375248	
		Pyraclostrobin**	0.0020	U	ug/L	P375248	
		Thiamethoxam**	0.0020	U	ug/L	P375248	

Field ID: G1WA0093

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140615	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140627	EPA 200.7 Rev. 4.4	Barium	10.6		ug/L	P375281	
		Calcium	4.79		mg/L	P375281	
		Iron	1.07E+03		ug/L	P375281	
		Magnesium	1.84		mg/L	P375281	
		Potassium	0.85	I	mg/L	P375281	
		Sodium	4.7		mg/L	P375281	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P375281	
		Aluminum	110		ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.40		ug/L	P375281	
		Boron**	10.4		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

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

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Richlander Creek at CR 65B

Collection Date/Time: 12/04/2019 10:07

Field ID: G1WA0093_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140584	EPA 180.1 Rev. 2.0	Turbidity	5.2		NTU	P375264	
	EPA 300.0 Rev. 2.1	Chloride	8.2		mg Cl/L	P375474	
		Sulfate	0.50	I	mg SO4/L	P375476	
	SM 2120 B	Color (true)	42		PCU	P375295	
	SM 2320 B-97	Total Alkalinity	13		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	31		mg/L	P375801	
	SM 2540 D-97	TSS	2	I	mg/L	P375900	
	SM 4500 F-C-97	Fluoride	0.064	I	mg F/L	P375486	
2140588	EPA 350.1 Rev. 2.0	Ammonia-N	0.01		mg N/L	P375669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P375442	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.40		mg N/L	P375466	
	EPA 365.1 Rev. 2.0	Total-P	0.050		mg P/L	P375455	
	SM 5310 B-00	Organic Carbon	2.9		mg C/L	P375413	
2140592	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.024		mg P/L	P375234	
2140616	EPA 8321B	2,4-D	0.0020	U	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	0.10	U	ug/L	P375385	
		Sucralose**	0.090		ug/L	P375385	
		Acetaminophen**	0.0080	U	ug/L	P375248	
		Acetamiprid**	0.0020	U	ug/L	P375248	
		Endothall**	0.25	U	ug/L	P375385	
		Glufosinate**	0.10	U	ug/L	P375385	
		Glyphosate**	0.10	U	ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	8.0E-04	U	ug/L	P375248	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375248	
		Carbamazepine**	8.0E-04	U	ug/L	P375248	
		Clothianidin**	0.0020	U	ug/L	P375248	
		Dinotefuran**	0.0020	U	ug/L	P375248	
		Diuron	0.0020	U	ug/L	P375248	
		Fenuron	0.016	U	ug/L	P375248	
		Fluridone**	8.0E-04	U	ug/L	P375248	
		Imazapyr**	0.0040	U	ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0027	I	ug/L	P375248	
		Linuron	0.0040	U	ug/L	P375248	
		Mandestrobin**	0.0020	UJ	ug/L	P375248	
		MCP	0.0020	U	ug/L	P375248	
		Naproxen**	0.0080	U	ug/L	P375248	
		Primidone**	0.0040	U	ug/L	P375248	
		Pyraclostrobin**	0.0020	U	ug/L	P375248	
		Thiamethoxam**	0.0020	U	ug/L	P375248	

Field ID: G1WA0093_DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140616	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140628	EPA 200.7 Rev. 4.4	Barium	11.2		ug/L	P375281	
		Calcium	4.80		mg/L	P375281	
		Iron	1.11E+03		ug/L	P375281	
		Magnesium	1.86		mg/L	P375281	
		Potassium	0.81	I	mg/L	P375281	
		Sodium	4.7		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	131		ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.38		ug/L	P375281	
		Boron**	10.4		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

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

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: Lewis Creek Upstream of 157

Collection Date/Time: 12/04/2019 12:23

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140585	EPA 180.1 Rev. 2.0	Turbidity	2.2		NTU	P375265	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P375475	
		Sulfate	0.45	I	mg SO4/L	P375477	
		Color (true)	48		PCU	P375295	
	SM 2120 B	Total Alkalinity	16		mg CaCO3/L	P375483	
	SM 2540 C-97	TDS	48		mg/L	P375801	
	SM 2540 D-97	TSS	2	I	mg/L	P375900	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P375486	
2140589	EPA 350.1 Rev. 2.0	Ammonia-N	0.052		mg N/L	P375669	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.50		mg N/L	P375442	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.022		mg N/L	P375468	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P375455	
	SM 5310 B-00	Organic Carbon	6.9		mg C/L	P375413	
2140593	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P375234	
2140617	EPA 8321B	2,4-D	0.0020	U	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	0.10	U	ug/L	P375385	
		Sucralose**	0.12		ug/L	P375385	
		Acetaminophen**	0.0080	U	ug/L	P375248	
		Acetamiprid**	0.0020	U	ug/L	P375248	
		Endothall**	0.25	U	ug/L	P375385	
		Glufosinate**	0.10	U	ug/L	P375385	
		Glyphosate**	0.10	U	ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	8.0E-04	U	ug/L	P375248	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P375248	
		Carbamazepine**	8.0E-04	U	ug/L	P375248	
		Clothianidin**	0.0020	U	ug/L	P375248	
		Dinotefuran**	0.0020	U	ug/L	P375248	
		Diuron	0.0020	U	ug/L	P375248	
		Fenuron	0.016	U	ug/L	P375248	
		Fluridone**	8.0E-04	U	ug/L	P375248	
		Imazapyr**	0.0091	I	ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0020	U	ug/L	P375248	
		Linuron	0.0040	U	ug/L	P375248	
		Mandestrobin**	0.0020	UJ	ug/L	P375248	
		MCP	0.0020	U	ug/L	P375248	
		Naproxen**	0.0080	U	ug/L	P375248	
		Primidone**	0.0040	U	ug/L	P375248	
		Pyraclostrobin**	0.0020	U	ug/L	P375248	
		Thiamethoxam**	0.0020	U	ug/L	P375248	

Field ID: G1WA0075

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140617	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140629	EPA 200.7 Rev. 4.4	Barium	14.9		ug/L	P375281	
		Calcium	5.42		mg/L	P375281	
		Iron	1.03E+03		ug/L	P375281	
		Magnesium	2.21		mg/L	P375281	
		Potassium	0.78	I	mg/L	P375281	
		Sodium	5.1		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	35		ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.60		ug/L	P375281	
		Boron**	16.3		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.40	U	ug/L	P375281	
		Lead	0.20	U	ug/L	P375281	
		Nickel	0.50	U	ug/L	P375281	
		Selenium	0.20	U	ug/L	P375281	
		Silver	0.010	U	ug/L	P375281	
		Thallium	0.10	U	ug/L	P375281	

Ref. Method and Comment:

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

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P375264

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P375265

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P375281

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P375281

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375474

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375475

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375477

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375669

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375442

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375466

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375468

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375455

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375612

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B**Batch ID: P375248**

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
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: EPA 8321B**Batch ID: P375385**

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 2120 B**Batch ID: P375295**

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B**Batch ID: P375296**

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report

Method Blank Results

Reference Method: SM 2320 B-97
Batch ID: P375483

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

Reference Method: SM 2320 B-97
Batch ID: P375875

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

Reference Method: SM 2540 C-97
Batch ID: P375801

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375900

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375413

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: P375281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	105		P	85 - 115
Calcium	104		P	85 - 115
Iron	110		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	110		P	85 - 115
Sodium	103		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P375281

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	104		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	105		P	85 - 115
Boron	110		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	106		P	85 - 115
Copper	102		P	85 - 115
Lead	111		P	85 - 115
Nickel	102		P	85 - 115
Selenium	93.2		P	85 - 115
Silver	111		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375474

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375475

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375476

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375477

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375669

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375442

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375466

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375468

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375455

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375612

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375234

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

Reference Method: EPA 8321B
Batch ID: P375248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	134		P	40 - 160
Acetaminophen	86.8		P	30 - 160
Acetamiprid	99.0		P	40 - 160
Afidopyropen	89.2		P	40 - 160
Bentazon	91.3		P	30 - 160
Benzovindiflupyr	82.1		P	40 - 160
Carbamazepine	95.2		P	40 - 160
Clothianidin	99.6		P	40 - 160
Dinotefuran	84.8		P	40 - 160
Diuron	78.7		P	40 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P375248

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	99.8		P	40 - 160
Fluridone	97.2		P	40 - 160
Hydrocodone	87.3		P	40 - 160
Ibuprofen	80.7		P	30 - 160
Imazapyr	104		P	40 - 160
Imidacloprid	105		P	40 - 160
Linuron	69.1		P	40 - 160
Mandestrobin	90.2		P	40 - 160
MCPP	139		P	40 - 160
Naproxen	81.3		P	40 - 160
Primidone	83.9		P	40 - 160
Pyraclostrobin	81.1		P	30 - 160
Thiamethoxam	107		P	40 - 160
Tolfenpyrad	56.8		P	40 - 160
Triclopyr	88.6		P	30 - 160

Reference Method: EPA 8321B

Batch ID: P375385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	146		P	40 - 150
AMPA	124		P	40 - 150
Endothall	76.2		P	40 - 150
Glufosinate	88.9		P	40 - 150
Glyphosate	96.2		P	40 - 140
Sucralose	100		P	40 - 150

Reference Method: SM 2120 B

Batch ID: P375295

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2120 B

Batch ID: P375296

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	105		P	85 - 115

Reference Method: SM 2320 B-97

Batch ID: P375483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 2320 B-97

Batch ID: P375875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P375486

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.6		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P375413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.8		P	85 - 115

Quality Assurance Report

Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P375281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139769	Barium	102		P	80 - 120
2139769	Calcium	104		P	80 - 120
2139769	Iron	108		P	80 - 120
2139769	Magnesium	99.6		P	80 - 120
2139769	Potassium	106		P	80 - 120
2139769	Sodium	103		P	80 - 120
2139769	Zinc	99.2		P	80 - 120
2140626	Barium	102	102	P/P	80 - 120
2140626	Calcium	104		P	80 - 120
2140626	Iron	110	110	P/P	80 - 120
2140626	Magnesium	113	111	P/P	80 - 120
2140626	Potassium	110	108	P/P	80 - 120
2140626	Sodium	108	109	P/P	80 - 120
2140626	Zinc	99.1	99.9	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P375281

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2139769	Aluminum	98.1		P	80 - 120
2139769	Antimony	105		P	80 - 120
2139769	Arsenic	102		P	80 - 120
2139769	Boron	107		P	80 - 120
2139769	Cadmium	103		P	80 - 120
2139769	Chromium	101		P	80 - 120
2139769	Copper	95.1		P	80 - 120
2139769	Lead	104		P	80 - 120
2139769	Nickel	94.6		P	80 - 120
2139769	Selenium	87.1		P	80 - 120
2139769	Silver	106		P	80 - 120
2139769	Thallium	98.7		P	80 - 120
2140626	Aluminum	103	103	P/P	80 - 120
2140626	Antimony	107	107	P/P	80 - 120
2140626	Arsenic	103	102	P/P	80 - 120
2140626	Boron	110	110	P/P	80 - 120
2140626	Cadmium	105	104	P/P	80 - 120
2140626	Chromium	106	105	P/P	80 - 120
2140626	Copper	99.8	99.1	P/P	80 - 120
2140626	Lead	109	109	P/P	80 - 120
2140626	Nickel	99.3	98.4	P/P	80 - 120
2140626	Selenium	87.8	91.5	P/P	80 - 120
2140626	Silver	111	111	P/P	80 - 120
2140626	Thallium	100	100	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P375474

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140401	Chloride	102		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375475

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140585	Chloride	103		P	90 - 110
2140820	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140283	Sulfate	98.4		P	90 - 110
2140401	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140585	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375669

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140511	Ammonia-N	99.1	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375442

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140600	Kjeldahl Nitrogen	92.6	99.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375466

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140511	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140586	NO2NO3-N	99.8	98.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375455

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140510	Total-P	103	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375612

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140600	Total-P	102	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P375234

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140590	O-Phosphate-P	97.8	97.8	P/P	90 - 110

Reference Method: EPA 8321B

Batch ID: P375248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140614	2,4-D	121	131	P/P	40 - 160
2140614	Acetaminophen	98.5	92.4	P/P	30 - 160
2140614	Acetamiprid	78.2	96.0	P/P	40 - 160
2140614	Afidopyropen	76.9	93.7	P/P	40 - 160
2140614	Bentazon	68.7	70.1	P/P	30 - 160
2140614	Benzovindiflupyr	85.3	79.4	P/P	40 - 160
2140614	Carbamazepine	92.4	95.4	P/P	40 - 160
2140614	Clothianidin	71.6	88.7	P/P	40 - 160
2140614	Dinotefuran	88.3	94.3	P/P	40 - 160
2140614	Diuron	67.8	71.8	P/P	40 - 160
2140614	Fenuron	87.4	91.3	P/P	40 - 160
2140614	Fluridone	90.3	93.9	P/P	40 - 160
2140614	Hydrocodone	92.9	95.3	P/P	40 - 160
2140614	Ibuprofen	75.4	80.8	P/P	30 - 160
2140614	Imazapyr	110	126	P/P	40 - 160
2140614	Imidacloprid	141	134	P/P	40 - 160
2140614	Linuron	63.6	62.2	P/P	40 - 160
2140614	Mandestrobin	85.9	84.4	P/P	40 - 160
2140614	MCP	130	142	P/P	40 - 160
2140614	Naproxen	64.5	72.3	P/P	40 - 160
2140614	Primidone	82.1	83.0	P/P	40 - 160
2140614	Pyraclostrobin	89.4	86.7	P/P	30 - 160
2140614	Thiamethoxam	128	139	P/P	40 - 160
2140614	Tolfenpyrad	55.5	55.5	P/P	40 - 160
2140614	Triclopyr	99.8	107	P/P	30 - 160

Reference Method: EPA 8321B

Batch ID: P375385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140614	Acesulfame K	146	135	P/P	40 - 150
2140614	AMPA	121	117	P/P	40 - 150
2140614	Endothall	83.0	81.3	P/P	40 - 150
2140614	Glufosinate	75.5	77.4	P/P	40 - 150
2140614	Glyphosate	72.6	71.0	P/P	40 - 140
2140614	Sucralose	95.7	95.5	P/P	40 - 150

Reference Method: SM 4500 F-C-97

Batch ID: P375486

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2141040	Fluoride	95.3	96.7	P/P	89 - 106

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P375413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140433	Organic Carbon	95.2	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Turbidity	7.42	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140597	Turbidity	1.38	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P375281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140626	Barium	0.245	Spike	P	0 - 20
2140626	Calcium	0.828	Spike	P	0 - 20
2140626	Iron	0.0227	Spike	P	0 - 20
2140626	Magnesium	1.02	Spike	P	0 - 20
2140626	Potassium	1.70	Spike	P	0 - 20
2140626	Sodium	0.574	Spike	P	0 - 20
2140626	Zinc	0.864	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P375281

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140626	Aluminum	0.406	Spike	P	0 - 20
2140626	Antimony	0.123	Spike	P	0 - 20
2140626	Arsenic	0.534	Spike	P	0 - 20
2140626	Boron	0.561	Spike	P	0 - 20
2140626	Cadmium	0.550	Spike	P	0 - 20
2140626	Chromium	1.19	Spike	P	0 - 20
2140626	Copper	0.750	Spike	P	0 - 20
2140626	Lead	0.0615	Spike	P	0 - 20
2140626	Nickel	0.900	Spike	P	0 - 20
2140626	Selenium	4.10	Spike	P	0 - 20
2140626	Silver	0.336	Spike	P	0 - 20
2140626	Thallium	0.255	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140283	Chloride	0.173	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375475

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140820	Chloride	0.337	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375476

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140283	Sulfate	0.00508	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140820	Sulfate	0.481	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375669

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140511	Ammonia-N	0.392	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375442

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140600	Kjeldahl Nitrogen	5.15	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375466

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140511	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140586	NO2NO3-N	0.781	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375455

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140510	Total-P	0.649	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P375612

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140600	Total-P	1.55	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P375234

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140590	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P375248

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140614	2,4-D	7.95	Spike	P	0 - 30
2140614	Acetaminophen	6.47	Spike	P	0 - 30
2140614	Acetamiprid	20.4	Spike	P	0 - 30
2140614	Afidopyropen	19.7	Spike	P	0 - 30
2140614	Bentazon	1.98	Spike	P	0 - 30
2140614	Benzovindiflupyr	7.20	Spike	P	0 - 30
2140614	Carbamazepine	3.21	Spike	P	0 - 30
2140614	Clothianidin	21.3	Spike	P	0 - 30
2140614	Dinotefuran	6.54	Spike	P	0 - 30
2140614	Diuron	5.69	Spike	P	0 - 30
2140614	Fenuron	4.41	Spike	P	0 - 30
2140614	Fluridone	3.91	Spike	P	0 - 30
2140614	Hydrocodone	2.51	Spike	P	0 - 30
2140614	Ibuprofen	6.97	Spike	P	0 - 30
2140614	Imazapyr	13.2	Spike	P	0 - 30
2140614	Imidacloprid	4.93	Spike	P	0 - 30
2140614	Linuron	2.26	Spike	P	0 - 30
2140614	Mandestrobin	1.73	Spike	P	0 - 30
2140614	MCP	8.61	Spike	P	0 - 30
2140614	Naproxen	11.4	Spike	P	0 - 30
2140614	Primidone	1.04	Spike	P	0 - 30
2140614	Pyraclostrobin	3.01	Spike	P	0 - 30
2140614	Thiamethoxam	7.83	Spike	P	0 - 30
2140614	Tolfenpyrad	0.0339	Spike	P	0 - 30
2140614	Triclopyr	6.73	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P375385

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140614	Acesulfame K	7.31	Spike	P	0 - 30
2140614	AMPA	3.37	Spike	P	0 - 30
2140614	Endothall	2.16	Spike	P	0 - 30
2140614	Glufosinate	2.46	Spike	P	0 - 30
2140614	Glyphosate	2.30	Spike	P	0 - 30
2140614	Sucralose	0.196	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B
 Batch ID: P375295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Color (true)	0.0206	Sample	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P375296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140597	Color (true)	2.92	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P375483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141040	Total Alkalinity	0.536	Sample	P	0 - 2.8

Reference Method: SM 2320 B-97
 Batch ID: P375875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2142641	Total Alkalinity	0.640	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P375801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140816	TDS	4.33	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P375486

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141040	Fluoride	0.986	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P375413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140433	Organic Carbon	1.12	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2140614

Field Sample ID: G1WA0091

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	149	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	78.6	P	30 - 160
EPA 8321B	Endothall-d6	100	P	30 - 160
EPA 8321B	Endothall-d6	100	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	101	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160
EPA 8321B	Sucralose-d6	117	P	30 - 160

Lab Sample ID: 2140615

Field Sample ID: G1WA0093

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	151	P	30 - 160
EPA 8321B	Acetaminophen-d4	75.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	101	P	30 - 160
EPA 8321B	Diuron-d6	83.8	P	30 - 160
EPA 8321B	Endothall-d6	88.0	P	30 - 160
EPA 8321B	Endothall-d6	88.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	74.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	112	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	30 - 160
EPA 8321B	Sucralose-d6	116	P	30 - 160

Lab Sample ID: 2140616

Field Sample ID: G1WA0093_DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	159	P	30 - 160
EPA 8321B	Acetaminophen-d4	68.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	103	P	30 - 160
EPA 8321B	Diuron-d6	88.2	P	30 - 160
EPA 8321B	Endothall-d6	99.4	P	30 - 160
EPA 8321B	Endothall-d6	99.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	73.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.6	P	30 - 160
EPA 8321B	Primidone-d5	94.7	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160
EPA 8321B	Sucralose-d6	110	P	30 - 160

Lab Sample ID: 2140617

Field Sample ID: G1WA0075

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	154	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2140617

Field Sample ID: G1WA0075

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	78.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	84.6	P	30 - 160
EPA 8321B	Diuron-d6	73.2	P	30 - 160
EPA 8321B	Endothall-d6	87.7	P	30 - 160
EPA 8321B	Endothall-d6	87.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.7	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	120	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160
EPA 8321B	Sucralose-d6	115	P	30 - 160

Lab Sample ID: 2140618

Field Sample ID: FB_12042019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	151	P	30 - 160
EPA 8321B	Acetaminophen-d4	70.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	97.8	P	30 - 160
EPA 8321B	Diuron-d6	75.2	P	30 - 160
EPA 8321B	Endothall-d6	92.3	P	30 - 160
EPA 8321B	Endothall-d6	92.3	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	110	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	110	P	30 - 160
EPA 8321B	Ibuprofen-d3	93.8	P	30 - 160
EPA 8321B	Primidone-d5	89.4	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160
EPA 8321B	Sucralose-d6	113	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96116

Included Lab Sample IDs: 2140590, 2140591, 2140592, 2140593, 2140596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	95.5	94.6	P/P	90 - 110
O-Phosphate-P	96.7	96.3	P/P	90 - 110
O-Phosphate-P	98.0	97.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96120

Included Lab Sample IDs: 2140582, 2140583, 2140584, 2140585, 2140594

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

Reference Method: SM 2120 B

Run ID: A96139

Included Lab Sample IDs: 2140582, 2140583, 2140584, 2140585, 2140594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96157

Included Lab Sample IDs: 2140586, 2140587, 2140588, 2140589, 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110
NO2NO3-N	103	103	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96180

Included Lab Sample IDs: 2140626, 2140627, 2140628, 2140629, 2140630

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

Reference Method: SM 5310 B-00

Run ID: A96190

Included Lab Sample IDs: 2140586, 2140587, 2140588, 2140589, 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	97.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00

Run ID: A96190

Included Lab Sample IDs: 2140586, 2140587, 2140588, 2140589, 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	95.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96205

Included Lab Sample IDs: 2140582, 2140583, 2140584, 2140585, 2140594

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

Reference Method: SM 2320 B-97

Run ID: A96207

Included Lab Sample IDs: 2140582, 2140583, 2140584, 2140585

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A96207

Included Lab Sample IDs: 2140582, 2140583, 2140584, 2140585, 2140594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	97.6	98.6	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96214

Included Lab Sample IDs: 2140614, 2140615, 2140616, 2140617, 2140618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	134	106	P/P	60 - 160
Acesulfame K	158	134	P/P	60 - 160
Endothall	70.9	103	P/P	60 - 160
Endothall	92.0	70.9	P/P	60 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96228

Included Lab Sample IDs: 2140586, 2140587, 2140588, 2140589, 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.3	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96229

Included Lab Sample IDs: 2140586

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96233

Included Lab Sample IDs: 2140587, 2140588, 2140589

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

Reference Method: EPA 8321B

Run ID: A96272

Included Lab Sample IDs: 2140614, 2140615, 2140616, 2140617, 2140618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	118	122	P/P	60 - 160
AMPA	122	92.9	P/P	60 - 160
Glufosinate	81.3	83.7	P/P	60 - 160
Glufosinate	84.6	81.3	P/P	60 - 160
Glyphosate	92.5	92.9	P/P	60 - 160
Glyphosate	92.9	86.6	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96275

Included Lab Sample IDs: 2140586, 2140587, 2140588, 2140589, 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	101	P/P	90 - 110
Ammonia-N	99.7	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96342

Included Lab Sample IDs: 2140595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	98.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96343

Included Lab Sample IDs: 2140614, 2140615, 2140616, 2140617, 2140618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	148	98.0	P/P	50 - 150
2,4-D	98.0	111	P/P	50 - 150
Acetaminophen	105	103	P/P	60 - 160
Acetaminophen	129	105	P/P	60 - 160
Acetamiprid	108	98.4	P/P	50 - 150
Acetamiprid	98.4	87.0	P/P	50 - 150
Afidopyropen	106	102	P/P	50 - 150
Afidopyropen	115	106	P/P	50 - 150
Bentazon	74.9	78.6	P/P	50 - 160
Bentazon	78.6	77.5	P/P	50 - 160
Benzovindiflupyr	101	94.7	P/P	50 - 150
Benzovindiflupyr	106	101	P/P	50 - 150
Carbamazepine	102	95.5	P/P	60 - 150
Carbamazepine	95.5	99.1	P/P	60 - 150
Clothianidin	115	99.3	P/P	60 - 150
Clothianidin	118	115	P/P	60 - 150
Dinotefuran	101	79.3	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A96343

Included Lab Sample IDs: 2140614, 2140615, 2140616, 2140617, 2140618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	102	101	P/P	50 - 150
Diuron	102	85.2	P/P	60 - 150
Diuron	85.2	86.9	P/P	60 - 150
Fenuron	100	86.3	P/P	60 - 150
Fenuron	107	100	P/P	60 - 150
Fluridone	91.2	84.9	P/P	60 - 160
Fluridone	95.3	91.2	P/P	60 - 160
Hydrocodone	103	91.9	P/P	60 - 150
Hydrocodone	91.9	83.8	P/P	60 - 150
Ibuprofen	102	91.9	P/P	50 - 160
Ibuprofen	103	102	P/P	50 - 160
Imazapyr	107	97.6	P/P	50 - 150
Imazapyr	97.6	98.8	P/P	50 - 150
Imidacloprid	111	94.4	P/P	60 - 150
Imidacloprid	94.4	93.1	P/P	60 - 150
Linuron	91.5	87.2	P/P	60 - 150
Linuron	97.9	91.5	P/P	60 - 150
Mandestrobin	103	98.6	P/P	50 - 150
Mandestrobin	98.6	95.7	P/P	50 - 150
MCPP	104	95.5	P/P	50 - 150
MCPP	95.5	103	P/P	50 - 150
Naproxen	101	94.1	P/P	50 - 160
Naproxen	80.0	101	P/P	50 - 160
Primidone	92.4	78.6	P/P	60 - 150
Primidone	98.8	92.4	P/P	60 - 150
Pyraclostrobin	110	91.1	P/P	60 - 150
Pyraclostrobin	91.1	89.6	P/P	60 - 150
Thiamethoxam	119	121	P/P	50 - 150
Thiamethoxam	121	111	P/P	50 - 150
Tolfenpyrad	104	93.7	P/P	60 - 150
Tolfenpyrad	109	104	P/P	60 - 150
Triclopyr	104	96.1	P/P	50 - 150
Triclopyr	107	104	P/P	50 - 150

Reference Method: SM 2320 B-97

Run ID: A96352

Included Lab Sample IDs: 2140594

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96407

Included Lab Sample IDs: 2140626, 2140627, 2140628, 2140629, 2140630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.9	97.7	P/P	90 - 110
Aluminum	97.7	94.8	P/P	90 - 110
Antimony	97.4	98.8	P/P	90 - 110
Antimony	98.8	99.1	P/P	90 - 110
Arsenic	99.8	99.9	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96407

Included Lab Sample IDs: 2140626, 2140627, 2140628, 2140629, 2140630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.9	98.2	P/P	90 - 110
Boron	101	101	P/P	90 - 110
Boron	101	100	P/P	90 - 110
Cadmium	98.6	99.3	P/P	90 - 110
Cadmium	99.3	99.9	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Copper	98.4	94.2	P/P	90 - 110
Copper	98.7	98.4	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Lead	104	100	P/P	90 - 110
Nickel	97.7	93.9	P/P	90 - 110
Nickel	98.4	97.7	P/P	90 - 110
Silver	106	107	P/P	90 - 110
Silver	107	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96420

Included Lab Sample IDs: 2140614, 2140615, 2140616, 2140617, 2140618

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	93.2	94.2	P/P	60 - 160
Sucralose	94.2	91.6	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96522

Included Lab Sample IDs: 2140626, 2140627, 2140628, 2140629, 2140630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	92.7	94.7	P/P	90 - 110
Selenium	94.7	95.1	P/P	90 - 110
Thallium	91.0	91.9	P/P	90 - 110
Thallium	91.9	92.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96617

Included Lab Sample IDs: 2140626, 2140627, 2140628, 2140629, 2140630

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	102	102	P/P	90 - 110
Magnesium	103	102	P/P	90 - 110
Magnesium	103	103	P/P	95 - 105
Sodium	103	103	P/P	90 - 110
Sodium	103	103	P/P	90 - 110
Sodium	104	103	P/P	95 - 105

* 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						7.42	
	Turbidity						1.38	
EPA 200.7 Rev. 4.4	Barium	105	102	102	102			0.245
	Calcium	104	104	104				0.828
	Iron	110	108	110	110			0.0227
	Magnesium	103	99.6	113	111			1.02
	Potassium	110	106	110	108			1.70
	Sodium	103	103	108	109			0.574
	Zinc	103	99.2	99.1	99.9			0.864
EPA 200.8 Rev. 5.4	Aluminum	104	98.1	103	103			0.406
	Antimony	107	105	107	107			0.123
	Arsenic	105	102	103	102			0.534
	Boron	110	107	110	110			0.561
	Cadmium	104	103	105	104			0.550
	Chromium	106	101	106	105			1.19
	Copper	102	95.1	99.8	99.1			0.750
	Lead	111	104	109	109			0.0615
	Nickel	102	94.6	99.3	98.4			0.900
	Selenium	93.2	87.8	91.5	87.1			4.10
	Silver	111	106	111	111			0.336
	Thallium	101	100	100	98.7			0.255
EPA 300.0 Rev. 2.1	Chloride	102	102				0.173	
	Chloride	102	103	103			0.337	
	Sulfate	102	98.4	102			0.0050	
	Sulfate	102	102				0.481	
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	99.1	98.6				0.392
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	92.6	99.1				5.15
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	100	100				0.0
	NO ₂ NO ₃ -N	101	99.8	98.8				0.781
EPA 365.1 Rev. 2.0	Total-P	103	103	102				0.649
	Total-P	105	102	104				1.55
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	97.8	97.8				0.0
EPA 8321B	2,4-D	134	121	131				7.95
	Acesulfame K	146	146	135				7.31
	Acetaminophen	86.8	98.5	92.4				6.47
	Acetamiprid	99.0	78.2	96.0				20.4
	Afidopyropen	89.2	76.9	93.7				19.7
	AMPA	124	121	117				3.37
	Bentazon	91.3	68.7	70.1				1.98
	Benzovindiflupyr	82.1	85.3	79.4				7.20
	Carbamazepine	95.2	92.4	95.4				3.21
	Clothianidin	99.6	71.6	88.7				21.3
	Dinotefuran	84.8	88.3	94.3				6.54
	Diuron	78.7	67.8	71.8				5.69
	Endothall	76.2	83.0	81.3				2.16
	Fenuron	99.8	87.4	91.3				4.41
	Fluridone	97.2	90.3	93.9				3.91
	Glufosinate	88.9	75.5	77.4				2.46
	Glyphosate	96.2	72.6	71.0				2.30
	Hydrocodone	87.3	92.9	95.3				2.51
	Ibuprofen	80.7	75.4	80.8				6.97
	Imazapyr	104	110	126				13.2
	Imidacloprid	105	141	134				4.93
	Linuron	69.1	63.6	62.2				2.26

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	90.2	85.9	84.4		1.73
	MCCP	139	130	142		8.61
	Naproxen	81.3	64.5	72.3		11.4
	Primidone	83.9	82.1	83.0		1.04
	Pyraclostrobin	81.1	89.4	86.7		3.01
	Sucralose	100	95.7	95.5		0.196
	Thiamethoxam	107	128	139		7.83
	Tolfenpyrad	56.8	55.5	55.5		0.0339
	Triclopyr	88.6	99.8	107		6.73
SM 2120 B	Color (true)	101			0.0206	
	Color (true)	105			2.92	
SM 2320 B-97	Total Alkalinity	103			0.536	
	Total Alkalinity	103			0.640	
SM 2540 C-97	TDS				4.33	
SM 4500 F-C-97	Fluoride	95.6	95.3	96.7		0.986
SM 5310 B-00	Organic Carbon	95.8	95.2	97.0		1.12

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2140582, 2140583, 2140584, 2140585, 2140594
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2140626, 2140627, 2140628, 2140629, 2140630
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2140626, 2140627, 2140628, 2140629, 2140630
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2140582, 2140583, 2140584, 2140585, 2140594
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2140582, 2140583, 2140584, 2140585, 2140594
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2140586, 2140587, 2140588, 2140589, 2140595
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2140586, 2140587, 2140588, 2140589, 2140595
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2140586, 2140587, 2140588, 2140589, 2140595
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2140586, 2140587, 2140588, 2140589, 2140595
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2140590, 2140591, 2140592, 2140593, 2140596
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2140614, 2140615, 2140616, 2140617, 2140618
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2140614, 2140615, 2140616, 2140617, 2140618
SM 2120 B / E31780	True Color measured at 450 nm	2140582, 2140583, 2140584, 2140585, 2140594
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2140582, 2140583, 2140584, 2140585, 2140594
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2140582, 2140583, 2140584, 2140585, 2140594
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2140582, 2140583, 2140584, 2140585, 2140594
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2140582, 2140583, 2140584, 2140585, 2140594
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2140586, 2140587, 2140588, 2140589, 2140595

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	12/04/2019			12/04/2019 16:05	Yen Ta	2140582, 2140583, 2140584, 2140585, 2140594
EPA 200.7 Rev. 4.4	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 11:46	Vijayalakshmi Reddy	2140630
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 13:28	Vijayalakshmi Reddy	2140626
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 13:48	Vijayalakshmi Reddy	2140627
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 13:54	Vijayalakshmi Reddy	2140628
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 14:00	Vijayalakshmi Reddy	2140629
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 10:46	Vijayalakshmi Reddy	2140630
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 11:49	Vijayalakshmi Reddy	2140626
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 12:08	Vijayalakshmi Reddy	2140627
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 12:26	Vijayalakshmi Reddy	2140628
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 12:31	Vijayalakshmi Reddy	2140629
EPA 200.8 Rev. 5.4	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 14:31	Justin Cutchin	2140630
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 16:16	Justin Cutchin	2140626
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 16:45	Justin Cutchin	2140627
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 16:54	Justin Cutchin	2140628
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 17:04	Justin Cutchin	2140629
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 18:32	Alexander Thompson	2140630
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 20:10	Alexander Thompson	2140627
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 20:20	Alexander Thompson	2140628
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 20:29	Alexander Thompson	2140629
	12/04/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 20:59	Alexander Thompson	2140626
EPA 300.0 Rev. 2.1	12/04/2019			12/09/2019 22:58	Lipi Saha	2140582
	12/04/2019			12/09/2019 23:10	Lipi Saha	2140583
	12/04/2019			12/09/2019 23:22	Lipi Saha	2140584
	12/04/2019			12/10/2019 01:11	Lipi Saha	2140585
	12/04/2019			12/10/2019 01:35	Lipi Saha	2140594
EPA 350.1 Rev. 2.0	12/04/2019			12/11/2019 11:37	Ping Hua	2140586
	12/04/2019			12/11/2019 11:44	Ping Hua	2140587
	12/04/2019			12/11/2019 11:46	Ping Hua	2140588
	12/04/2019			12/11/2019 11:47	Ping Hua	2140589
	12/04/2019			12/11/2019 11:49	Ping Hua	2140595
EPA 351.2 Rev. 2.0	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:49	Jhamieka S. Greenwood	2140586
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:51	Jhamieka S. Greenwood	2140587
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:52	Jhamieka S. Greenwood	2140588
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:54	Jhamieka S. Greenwood	2140589
	12/04/2019	12/09/2019 12:48	Sima Feizi	12/10/2019 13:55	Jhamieka S. Greenwood	2140595
EPA 353.2 Rev. 2.0	12/04/2019			12/06/2019 10:27	Beverly Y. Sanders	2140588
	12/04/2019			12/06/2019 10:34	Beverly Y. Sanders	2140586
	12/04/2019			12/06/2019 10:40	Beverly Y. Sanders	2140589

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 353.2 Rev. 2.0	12/04/2019			12/06/2019 10:41	Beverly Y. Sanders	2140595
	12/04/2019			12/06/2019 12:08	Beverly Y. Sanders	2140587
EPA 365.1 Rev. 2.0	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 13:40	Benjamin T. Nordmann	2140586
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 16:10	Benjamin T. Nordmann	2140587
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 16:11	Benjamin T. Nordmann	2140588
	12/04/2019	12/09/2019 15:16	Yen Ta	12/10/2019 16:12	Benjamin T. Nordmann	2140589
	12/04/2019	12/11/2019 10:23	Yen Ta	12/13/2019 15:56	Benjamin T. Nordmann	2140595
EPA 365.1 Rev. 2.0 dissolved	12/04/2019			12/04/2019 16:15	Samantha Davila	2140590
	12/04/2019			12/04/2019 16:47	Samantha Davila	2140596
	12/04/2019			12/04/2019 16:48	Samantha Davila	2140591
	12/04/2019			12/04/2019 16:49	Samantha Davila	2140592
	12/04/2019			12/04/2019 18:04	Samantha Davila	2140593
EPA 8321B	12/04/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 00:35	Juyoung Kim	2140614
	12/04/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 02:19	Juyoung Kim	2140615
	12/04/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 02:53	Juyoung Kim	2140616
	12/04/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 04:03	Juyoung Kim	2140617
	12/04/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 04:37	Juyoung Kim	2140618
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 12:39	Rebecca Ware	2140614
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 12:53	Rebecca Ware	2140615
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 13:07	Rebecca Ware	2140616
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 13:21	Rebecca Ware	2140617
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 13:58	Rebecca Ware	2140618
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 13:05	Rebecca Ware	2140614
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 13:16	Rebecca Ware	2140615
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 13:27	Rebecca Ware	2140616
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 13:38	Rebecca Ware	2140617
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 14:15	Rebecca Ware	2140618
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 15:50	Mohammad Ghaffari	2140614
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 16:04	Mohammad Ghaffari	2140615
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 16:18	Mohammad Ghaffari	2140616
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 16:32	Mohammad Ghaffari	2140617
	12/04/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 16:59	Mohammad Ghaffari	2140618
SM 2120 B	12/04/2019			12/04/2019 18:49	Madeline Funaro	2140582
	12/04/2019			12/04/2019 18:50	Madeline Funaro	2140583, 2140584
	12/04/2019			12/04/2019 18:51	Madeline Funaro	2140585
	12/04/2019			12/04/2019 18:55	Madeline Funaro	2140594
SM 2320 B-97	12/04/2019			12/07/2019 01:23	Dale L. Simmons	2140582
	12/04/2019			12/07/2019 01:34	Dale L. Simmons	2140583
	12/04/2019			12/07/2019 01:45	Dale L. Simmons	2140584
	12/04/2019			12/07/2019 01:56	Dale L. Simmons	2140585

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-97	12/04/2019			12/14/2019 13:43	Dale L. Simmons	2140594
SM 2540 C-97	12/04/2019			12/09/2019 15:22	Yijie Li	2140582, 2140583, 2140584, 2140585, 2140594
SM 2540 D-97	12/04/2019			12/09/2019 15:22	Yijie Li	2140582, 2140583, 2140584, 2140585, 2140594
SM 4500 F-C-97	12/04/2019			12/07/2019 01:23	Dale L. Simmons	2140582
	12/04/2019			12/07/2019 01:34	Dale L. Simmons	2140583
	12/04/2019			12/07/2019 01:45	Dale L. Simmons	2140584
	12/04/2019			12/07/2019 01:56	Dale L. Simmons	2140585
	12/04/2019			12/07/2019 02:11	Dale L. Simmons	2140594
SM 5310 B-00	12/04/2019			12/07/2019 02:56	Madeline Funaro	2140586
	12/04/2019			12/07/2019 03:09	Madeline Funaro	2140587
	12/04/2019			12/07/2019 03:21	Madeline Funaro	2140588
	12/04/2019			12/07/2019 03:59	Madeline Funaro	2140589
	12/04/2019			12/07/2019 04:12	Madeline Funaro	2140595