

Chemical Analysis Report

NE-DIST-2019-12-05-01

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

Event Description: **LSJR Palatka**
Request ID: **RQ-2019-12-02-27**
Customer: **NE-DIST**
Project ID: **SMP**

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8800 Baymeadows Way West
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-DEC-2019 17:46

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: Moccassin Branch at Winford Masters Rd

Collection Date/Time: 12/04/2019 14:10

Field ID: 20030557

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140950	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P375570	
	EPA 300.0 Rev. 2.1	Chloride	380		mg Cl/L	P375655	
		Sulfate	460		mg SO4/L	P375658	
		Color (true)	40		PCU	P375369	
	SM 2320 B-97	Total Alkalinity	104		mg CaCO3/L	P375484	
	SM 2540 C-97	TDS	1.27E+03		mg/L	P375803	
	SM 2540 D-97	TSS	2	U	mg/L	P375902	
	SM 4500 F-C-97	Fluoride	0.42		mg F/L	P375487	
2140952	EPA 350.1 Rev. 2.0	Ammonia-N	0.022		mg N/L	P375779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P375498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P375460	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P375546	
	SM 5310 B-00	Organic Carbon	8.7		mg C/L	P375516	
2140954	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.086		mg P/L	P375285	
2140996	EPA 200.7 Rev. 4.4	Barium	29.3		ug/L	P375281	
		Calcium	167		mg/L	P375281	
		Iron	320		ug/L	P375281	
		Magnesium	69.8		mg/L	P375281	
		Potassium	6.9		mg/L	P375281	
		Sodium	181		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	42		ug/L	P375281	
		Antimony	0.050	U	ug/L	P375281	
		Arsenic	0.57		ug/L	P375281	
		Boron**	65.4		ug/L	P375281	
		Cadmium	0.024	I	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.62	I	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:

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

Sample Location: Dunns Creek 0.4 miles upstream of US17

Collection Date/Time: 12/04/2019 11:40

Field ID: G2NE1187

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140951	EPA 180.1 Rev. 2.0	Turbidity	2.8	A	NTU	P375570	
	EPA 300.0 Rev. 2.1	Chloride	180		mg Cl/L	P375655	
		Sulfate	42		mg SO4/L	P375658	
		Color (true)	180		PCU	P375369	
	SM 2320 B-97	Total Alkalinity	70		mg CaCO3/L	P375484	
	SM 2540 C-97	TDS	434		mg/L	P375804	
	SM 2540 D-97	TSS	4	I	mg/L	P375903	
	SM 4500 F-C-97	Fluoride	0.10		mg F/L	P375487	
2140953	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P375779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P375498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.089		mg N/L	P375460	
	EPA 365.1 Rev. 2.0	Total-P	0.075		mg P/L	P375546	
	SM 5310 B-00	Organic Carbon	20		mg C/L	P375516	
2140955	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.038		mg P/L	P375285	
2140997	EPA 200.7 Rev. 4.4	Barium	14.9		ug/L	P375281	
		Calcium	42.5		mg/L	P375281	
		Iron	240		ug/L	P375281	
		Magnesium	14.8		mg/L	P375281	
		Potassium	4.1		mg/L	P375281	
		Sodium	95.6		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	41		ug/L	P375281	
		Antimony	0.060	I	ug/L	P375281	
		Arsenic	0.93		ug/L	P375281	
		Boron**	52.4		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.40	U	ug/L	P375281	
		Copper	0.42	I	ug/L	P375281	
		Lead	0.23	I	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:

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

Sample Location: Bull Creek Canal 0.5M Upstr of Dead Lake

Collection Date/Time: 12/04/2019 10:20

Field ID: G2NE1182

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140956	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P375570	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P375655	
		Sulfate	35		mg SO4/L	P375658	
	SM 2120 B	Color (true)	340		PCU	P375369	
	SM 2320 B-97	Total Alkalinity	67		mg CaCO3/L	P375484	
	SM 2540 C-97	TDS	513		mg/L	P375804	
	SM 2540 D-97	TSS	2	I	mg/L	P375903	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P375487	
2140958	EPA 350.1 Rev. 2.0	Ammonia-N	0.053		mg N/L	P375779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4		mg N/L	P375498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.048		mg N/L	P375460	
	EPA 365.1 Rev. 2.0	Total-P	0.30		mg P/L	P375546	
	SM 5310 B-00	Organic Carbon	36		mg C/L	P375516	
2140960	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.27		mg P/L	P375285	
2140993	EPA 8321B	2,4-D	0.0032	I	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	1.4		ug/L	P375385	
		Sucralose**	0.072		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**	1.4		ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	0.94		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**	0.048		ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0064	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**	0.0077	I	ug/L	P375248	

Field ID: G2NE1182

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140993	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140998	EPA 200.7 Rev. 4.4	Barium	20.2		ug/L	P375281	
		Calcium	54.4		mg/L	P375281	
		Iron	410		ug/L	P375281	
		Magnesium	18.3		mg/L	P375281	
		Potassium	5.0		mg/L	P375281	
		Sodium	84.9		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	114		ug/L	P375281	
		Antimony	0.058	I	ug/L	P375281	
		Arsenic	1.07		ug/L	P375281	
		Boron**	41.7		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.57	I	ug/L	P375281	
		Copper	0.57	I	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:

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: Bull Creek Canal 0.5M Upstr of Dead Lake

Collection Date/Time: 12/04/2019 10:30

Field ID: FB 12042019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140962	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P375571	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P375655	
		Sulfate	0.20	U	mg SO4/L	P375658	
	SM 2120 B	Color (true)	2.5	U	PCU	P375369	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P375484	
	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	P375487	
2140963	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P375779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P375498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P375460	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P375546	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P375516	
2140964	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P375285	
2140995	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	
		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: FB 12042019

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140995	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2141000	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:

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: Bull Creek Canal 0.5M Upstr of Dead Lake

Collection Date/Time: 12/04/2019 10:25

Field ID: G2NE1182 DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140957	EPA 180.1 Rev. 2.0	Turbidity	1.1		NTU	P375570	
	EPA 300.0 Rev. 2.1	Chloride	200		mg Cl/L	P375655	
		Sulfate	35		mg SO4/L	P375658	
	SM 2120 B	Color (true)	330		PCU	P375369	
	SM 2320 B-97	Total Alkalinity	67		mg CaCO3/L	P375484	
	SM 2540 C-97	TDS	528		mg/L	P375804	
	SM 2540 D-97	TSS	2	I	mg/L	P375903	
	SM 4500 F-C-97	Fluoride	0.17		mg F/L	P375487	
2140959	EPA 350.1 Rev. 2.0	Ammonia-N	0.054		mg N/L	P375779	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P375498	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.047		mg N/L	P375460	
	EPA 365.1 Rev. 2.0	Total-P	0.31		mg P/L	P375546	
	SM 5310 B-00	Organic Carbon	37		mg C/L	P375516	
2140961	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.27		mg P/L	P375285	
2140994	EPA 8321B	2,4-D	0.0027	I	ug/L	P375248	
		Acesulfame K**	0.10	U	ug/L	P375385	
		AMPA**	1.5		ug/L	P375385	
		Sucralose**	0.082		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**	1.6		ug/L	P375385	
		Afidopyropen**	0.0020	UJ	ug/L	P375248	
		Bentazon	1.1		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**	0.044		ug/L	P375248	
		Hydrocodone**	0.0020	U	ug/L	P375248	
		Ibuprofen**	0.020	U	ug/L	P375248	
		Imidacloprid	0.0063	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**	0.0073	I	ug/L	P375248	

Field ID: G2NE1182 DUP

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2140994	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P375248	
		Triclopyr**	0.0040	U	ug/L	P375248	
2140999	EPA 200.7 Rev. 4.4	Barium	20.0		ug/L	P375281	
		Calcium	54.6		mg/L	P375281	
		Iron	410		ug/L	P375281	
		Magnesium	18.8		mg/L	P375281	
		Potassium	5.0		mg/L	P375281	
		Sodium	86.2		mg/L	P375281	
		Zinc	5.0	U	ug/L	P375281	
	EPA 200.8 Rev. 5.4	Aluminum	117		ug/L	P375281	
		Antimony	0.072	I	ug/L	P375281	
		Arsenic	1.07		ug/L	P375281	
		Boron**	42.5		ug/L	P375281	
		Cadmium	0.020	U	ug/L	P375281	
		Chromium	0.54	I	ug/L	P375281	
		Copper	0.56	I	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:

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: P375570

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375571

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: P375655

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375658

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P375779

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P375498

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P375460

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P375546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P375285

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

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
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P375248

Component	Result	Code	Units
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: P375369

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P375484

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

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

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P375803

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P375804

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
Batch ID: P375902

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P375903

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P375487

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P375516

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: P375655

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375658

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375779

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375498

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	108		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375460

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375546

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375285

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	104		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
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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P375385

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Glyphosate	96.2		P	40 - 140
Sucralose	100		P	40 - 150

Reference Method: SM 2120 B
Batch ID: P375369

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

Reference Method: SM 2320 B-97
Batch ID: P375484

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

Reference Method: SM 4500 F-C-97
Batch ID: P375487

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	94.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P375516

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		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: P375655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140445	Chloride	103		P	90 - 110
2140904	Chloride	103		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375658

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140445	Sulfate	100		P	90 - 110
2140904	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375779

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140970	Ammonia-N	97.6	98.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375498

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140952	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140952	NO2NO3-N	97.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140952	Total-P	99.3	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375285

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140911	O-Phosphate-P	98.5	98.0	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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P375248

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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: P375487

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140867	Fluoride	94.9	93.5	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P375516

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2140952	Organic Carbon	99.9	98.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140951	Turbidity	6.00	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P375571

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2141045	Turbidity	10.5	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: P375655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Chloride	0.0658	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P375658

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140445	Sulfate	0.127	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P375779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140970	Ammonia-N	0.764	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P375498

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140952	Kjeldahl Nitrogen	1.81	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P375460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140952	NO2NO3-N	0.432	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P375546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140952	Total-P	0.653	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P375285

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140911	O-Phosphate-P	0.351	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

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P375248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
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

Reference Method: SM 2120 B
Batch ID: P375369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140981	Color (true)	1.05	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P375484

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140867	Total Alkalinity	0.356	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

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P375803

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140870	TDS	0.631	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P375804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140984	TDS	8.22	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P375487

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140867	Fluoride	0.946	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
Batch ID: P375516

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2140952	Organic Carbon	0.875	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2140993
Field Sample ID: G2NE1182

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	105	P	30 - 160
EPA 8321B	Acetaminophen-d4	56.7	P	30 - 160
EPA 8321B	Carbamazepine-d10	66.4	P	30 - 160
EPA 8321B	Diuron-d6	53.9	P	30 - 160
EPA 8321B	Endothall-d6	83.2	P	30 - 160
EPA 8321B	Endothall-d6	83.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	80.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	87.6	P	30 - 160
EPA 8321B	Primidone-d5	61.0	P	30 - 160
EPA 8321B	Sucralose-d6	99.9	P	30 - 160
EPA 8321B	Sucralose-d6	99.9	P	30 - 160

Lab Sample ID: 2140994
Field Sample ID: G2NE1182 DUP

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	104	P	30 - 160
EPA 8321B	Acetaminophen-d4	60.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	67.3	P	30 - 160
EPA 8321B	Diuron-d6	50.8	P	30 - 160
EPA 8321B	Endothall-d6	72.2	P	30 - 160
EPA 8321B	Endothall-d6	72.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	87.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.0	P	30 - 160
EPA 8321B	Primidone-d5	61.4	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	98.0	P	30 - 160

Lab Sample ID: 2140995
Field Sample ID: FB 12042019

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	121	P	30 - 160
EPA 8321B	Acetaminophen-d4	65.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	94.7	P	30 - 160
EPA 8321B	Diuron-d6	75.1	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Endothall-d6	116	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	94.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.6	P	30 - 160
EPA 8321B	Primidone-d5	81.7	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160
EPA 8321B	Sucralose-d6	111	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96132

Included Lab Sample IDs: 2140954, 2140955, 2140960, 2140961, 2140964

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.9	P/P	90 - 110
O-Phosphate-P	98.6	98.8	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A96169

Included Lab Sample IDs: 2140950, 2140951, 2140956, 2140957, 2140962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	101	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96180

Included Lab Sample IDs: 2140996, 2140997, 2140998, 2140999, 2141000

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96201

Included Lab Sample IDs: 2140952, 2140953, 2140958, 2140959, 2140963

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A96205

Included Lab Sample IDs: 2140950, 2140951, 2140956, 2140957, 2140962

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

Reference Method: SM 2320 B-97

Run ID: A96207

Included Lab Sample IDs: 2140950, 2140951, 2140956, 2140957, 2140962

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	104	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-97

Run ID: A96207

Included Lab Sample IDs: 2140950, 2140951, 2140956, 2140957, 2140962

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

Reference Method: EPA 8321B

Run ID: A96214

Included Lab Sample IDs: 2140993, 2140994, 2140995

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

Reference Method: SM 5310 B-00

Run ID: A96224

Included Lab Sample IDs: 2140952, 2140953, 2140958, 2140959, 2140963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	99.0	P/P	90 - 110
Organic Carbon	99.6	98.0	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96245

Included Lab Sample IDs: 2140950, 2140951, 2140956, 2140957, 2140962

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A96265

Included Lab Sample IDs: 2140952, 2140953, 2140958, 2140959, 2140963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	106	P/P	90 - 110
Kjeldahl Nitrogen	106	103	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96272

Included Lab Sample IDs: 2140993, 2140994, 2140995

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96287

Included Lab Sample IDs: 2140952, 2140953, 2140958, 2140959

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A96306

Included Lab Sample IDs: 2140963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.0	99.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96313

Included Lab Sample IDs: 2140952, 2140953, 2140958, 2140959, 2140963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.4	99.2	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96343

Included Lab Sample IDs: 2140993, 2140994, 2140995

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	98.0	111	P/P	50 - 150
Acetaminophen	105	103	P/P	60 - 160
Acetamiprid	98.4	87.0	P/P	50 - 150
Afidopyropen	106	102	P/P	50 - 150
Bentazon	78.6	77.5	P/P	50 - 160
Bentazon	81.1	97.3	P/P	50 - 160
Benzovindiflupyr	101	94.7	P/P	50 - 150
Carbamazepine	95.5	99.1	P/P	60 - 150
Clothianidin	115	99.3	P/P	60 - 150
Dinotefuran	101	79.3	P/P	50 - 150
Diuron	85.2	86.9	P/P	60 - 150
Fenuron	100	86.3	P/P	60 - 150
Fluridone	91.2	84.9	P/P	60 - 160
Hydrocodone	91.9	83.8	P/P	60 - 150
Ibuprofen	102	91.9	P/P	50 - 160
Imazapyr	97.6	98.8	P/P	50 - 150
Imidacloprid	94.4	93.1	P/P	60 - 150
Linuron	91.5	87.2	P/P	60 - 150
Mandestrobin	98.6	95.7	P/P	50 - 150
MCPP	95.5	103	P/P	50 - 150
Naproxen	101	94.1	P/P	50 - 160
Primidone	92.4	78.6	P/P	60 - 150
Pyraclostrobin	91.1	89.6	P/P	60 - 150
Thiamethoxam	121	111	P/P	50 - 150
Tolfenpyrad	104	93.7	P/P	60 - 150
Triclopyr	104	96.1	P/P	50 - 150

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96407

Included Lab Sample IDs: 2140996, 2140997, 2140998, 2140999, 2141000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.8	96.1	P/P	90 - 110
Aluminum	95.9	97.7	P/P	90 - 110
Antimony	97.4	98.8	P/P	90 - 110
Antimony	99.1	103	P/P	90 - 110
Arsenic	98.2	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: 2140996, 2140997, 2140998, 2140999, 2141000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.8	99.9	P/P	90 - 110
Boron	100	105	P/P	90 - 110
Boron	101	101	P/P	90 - 110
Cadmium	98.6	99.3	P/P	90 - 110
Cadmium	99.9	104	P/P	90 - 110
Chromium	101	103	P/P	90 - 110
Chromium	103	108	P/P	90 - 110
Copper	94.2	95.6	P/P	90 - 110
Copper	98.7	98.4	P/P	90 - 110
Lead	100	99.7	P/P	90 - 110
Lead	103	104	P/P	90 - 110
Nickel	93.9	94.8	P/P	90 - 110
Nickel	98.4	97.7	P/P	90 - 110
Silver	107	108	P/P	90 - 110
Silver	107	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A96420

Included Lab Sample IDs: 2140993, 2140994, 2140995

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A96522

Included Lab Sample IDs: 2140996, 2140997, 2140998, 2140999, 2141000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Selenium	92.7	94.7	P/P	90 - 110
Selenium	95.1	93.9	P/P	90 - 110
Thallium	91.0	91.9	P/P	90 - 110
Thallium	92.2	90.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A96617

Included Lab Sample IDs: 2140996, 2140997, 2140998, 2140999, 2141000

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Magnesium	102	102	P/P	90 - 110
Magnesium	103	103	P/P	95 - 105
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						6.00	
	Turbidity						10.5	
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	101	103	103			0.0658	
	Sulfate	98.9	100	99.8			0.127	
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.6	98.4				0.764
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	107	104				1.81
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	97.0					0.432
EPA 365.1 Rev. 2.0	Total-P	100	99.3	100				0.653
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	98.5	98.0				0.351
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
	Mandestrobin	90.2	85.9	84.4				1.73
	MCP	139	130	142				8.61
	Naproxen	81.3	64.5	72.3				11.4
	Primidone	83.9	82.1	83.0				1.04

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	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			1.05	
SM 2320 B-97	Total Alkalinity	103			0.356	
SM 2540 C-97	TDS				4.33	
	TDS				0.631	
	TDS				8.22	
SM 4500 F-C-97	Fluoride	94.2	94.9	93.5		0.946
SM 5310 B-00	Organic Carbon	99.4	99.9	98.6		0.875

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2140950, 2140951, 2140956, 2140957, 2140962
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2140996, 2140997, 2140998, 2140999, 2141000
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2140996, 2140997, 2140998, 2140999, 2141000
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2140950, 2140951, 2140956, 2140957, 2140962
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2140950, 2140951, 2140956, 2140957, 2140962
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2140952, 2140953, 2140958, 2140959, 2140963
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2140952, 2140953, 2140958, 2140959, 2140963
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2140952, 2140953, 2140958, 2140959, 2140963
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2140952, 2140953, 2140958, 2140959, 2140963
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2140954, 2140955, 2140960, 2140961, 2140964
EPA 8321B / E31780	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2140993, 2140994, 2140995
EPA 8321B / E31780	Water soluble organic compounds by HPLC/MS/MS	2140993, 2140994, 2140995
SM 2120 B / E31780	True Color measured at 450 nm	2140950, 2140951, 2140956, 2140957, 2140962
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2140950, 2140951, 2140956, 2140957, 2140962
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2140950, 2140951, 2140956, 2140957, 2140962
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2140950, 2140951, 2140956, 2140957, 2140962
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2140950, 2140951, 2140956, 2140957, 2140962
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2140952, 2140953, 2140958, 2140959, 2140963

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	12/05/2019			12/05/2019 16:38	Yen Ta	2140950, 2140951, 2140956, 2140957, 2140962
EPA 200.7 Rev. 4.4	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 12:20	Vijayalakshmi Reddy	2141000
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 14:43	Vijayalakshmi Reddy	2140996
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 14:55	Vijayalakshmi Reddy	2140997
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 15:01	Vijayalakshmi Reddy	2140998
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/06/2019 15:07	Vijayalakshmi Reddy	2140999
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 10:53	Vijayalakshmi Reddy	2141000
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 12:54	Vijayalakshmi Reddy	2140996
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 13:00	Vijayalakshmi Reddy	2140997
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 13:06	Vijayalakshmi Reddy	2140998
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/27/2019 13:11	Vijayalakshmi Reddy	2140999
EPA 200.8 Rev. 5.4	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 14:51	Justin Cutchin	2141000
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 18:01	Justin Cutchin	2140996
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 18:11	Justin Cutchin	2140997
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 18:20	Justin Cutchin	2140998
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/17/2019 18:30	Justin Cutchin	2140999
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 18:52	Alexander Thompson	2141000
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 22:07	Alexander Thompson	2140996
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 22:17	Alexander Thompson	2140997
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 22:27	Alexander Thompson	2140998
	12/05/2019	12/05/2019 15:40	Elliott D. Healy	12/20/2019 22:37	Alexander Thompson	2140999
EPA 300.0 Rev. 2.1	12/05/2019			12/11/2019 18:32	Lipi Saha	2140950
	12/05/2019			12/11/2019 18:45	Lipi Saha	2140951
	12/05/2019			12/11/2019 19:21	Lipi Saha	2140956
	12/05/2019			12/11/2019 19:33	Lipi Saha	2140957
	12/05/2019			12/11/2019 19:45	Lipi Saha	2140962
EPA 350.1 Rev. 2.0	12/05/2019			12/12/2019 12:22	Ping Hua	2140952
	12/05/2019			12/12/2019 12:24	Ping Hua	2140953
	12/05/2019			12/12/2019 12:25	Ping Hua	2140958
	12/05/2019			12/12/2019 12:27	Ping Hua	2140959
	12/05/2019			12/12/2019 12:33	Ping Hua	2140963
EPA 351.2 Rev. 2.0	12/05/2019	12/10/2019 12:53	Sima Feizi	12/11/2019 16:20	Jhamieka S. Greenwood	2140952
	12/05/2019	12/10/2019 12:53	Sima Feizi	12/11/2019 16:30	Jhamieka S. Greenwood	2140953
	12/05/2019	12/10/2019 12:53	Sima Feizi	12/11/2019 16:31	Jhamieka S. Greenwood	2140958
	12/05/2019	12/10/2019 12:53	Sima Feizi	12/11/2019 16:33	Jhamieka S. Greenwood	2140959
	12/05/2019	12/10/2019 12:53	Sima Feizi	12/11/2019 16:34	Jhamieka S. Greenwood	2140963
EPA 353.2 Rev. 2.0	12/05/2019			12/09/2019 09:43	Beverly Y. Sanders	2140952
	12/05/2019			12/09/2019 09:49	Beverly Y. Sanders	2140953
	12/05/2019			12/09/2019 09:50	Beverly Y. Sanders	2140958

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	12/05/2019			12/09/2019 09:52	Beverly Y. Sanders	2140959
	12/05/2019			12/09/2019 09:53	Beverly Y. Sanders	2140963
EPA 365.1 Rev. 2.0	12/05/2019	12/10/2019 14:00	Yen Ta	12/12/2019 12:10	Benjamin T. Nordmann	2140952
	12/05/2019	12/10/2019 14:00	Yen Ta	12/12/2019 12:20	Benjamin T. Nordmann	2140953
	12/05/2019	12/10/2019 14:00	Yen Ta	12/12/2019 12:21	Benjamin T. Nordmann	2140958
	12/05/2019	12/10/2019 14:00	Yen Ta	12/12/2019 12:22	Benjamin T. Nordmann	2140959
	12/05/2019	12/10/2019 14:00	Yen Ta	12/12/2019 17:33	Benjamin T. Nordmann	2140963
EPA 365.1 Rev. 2.0 dissolved	12/05/2019			12/05/2019 14:35	Samantha Davila	2140964
	12/05/2019			12/05/2019 14:39	Samantha Davila	2140955
	12/05/2019			12/05/2019 15:11	Samantha Davila	2140960
	12/05/2019			12/05/2019 15:12	Samantha Davila	2140961
	12/05/2019			12/05/2019 15:13	Samantha Davila	2140954
EPA 8321B	12/05/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 05:47	Juyoung Kim	2140993
	12/05/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 06:21	Juyoung Kim	2140994
	12/05/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 06:56	Juyoung Kim	2140995
	12/05/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 18:30	Juyoung Kim	2140993
	12/05/2019	12/06/2019 14:00	Hoor Shaik	12/12/2019 19:05	Juyoung Kim	2140994
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 14:26	Rebecca Ware	2140993
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 14:40	Rebecca Ware	2140994
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/09/2019 14:54	Rebecca Ware	2140995
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 14:36	Rebecca Ware	2140993
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 14:47	Rebecca Ware	2140994
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/10/2019 14:58	Rebecca Ware	2140995
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 17:27	Mohammad Ghaffari	2140993
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 17:41	Mohammad Ghaffari	2140994
	12/05/2019	12/09/2019 11:00	Rebecca Ware	12/17/2019 17:55	Mohammad Ghaffari	2140995
SM 2120 B	12/05/2019			12/05/2019 17:27	Madeline Funaro	2140950
	12/05/2019			12/05/2019 17:30	Madeline Funaro	2140962
	12/05/2019			12/05/2019 18:10	Madeline Funaro	2140951
	12/05/2019			12/05/2019 18:11	Madeline Funaro	2140956, 2140957
SM 2320 B-97	12/05/2019			12/07/2019 06:59	Dale L. Simmons	2140951
	12/05/2019			12/07/2019 07:11	Dale L. Simmons	2140956
	12/05/2019			12/07/2019 07:24	Dale L. Simmons	2140957
	12/05/2019			12/07/2019 07:37	Dale L. Simmons	2140962
	12/05/2019			12/07/2019 09:34	Dale L. Simmons	2140950
SM 2540 C-97	12/05/2019			12/09/2019 15:22	Yijie Li	2140950, 2140951, 2140956, 2140957, 2140962
SM 2540 D-97	12/05/2019			12/09/2019 15:22	Yijie Li	2140950, 2140951, 2140956, 2140957, 2140962
SM 4500 F-C-97	12/05/2019			12/07/2019 06:59	Dale L. Simmons	2140951

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-97	12/05/2019			12/07/2019 07:11	Dale L. Simmons	2140956
	12/05/2019			12/07/2019 07:24	Dale L. Simmons	2140957
	12/05/2019			12/07/2019 07:37	Dale L. Simmons	2140962
	12/05/2019			12/07/2019 09:34	Dale L. Simmons	2140950
SM 5310 B-00	12/05/2019			12/09/2019 18:51	Madeline Funaro	2140952
	12/05/2019			12/09/2019 20:26	Madeline Funaro	2140953
	12/05/2019			12/09/2019 21:05	Madeline Funaro	2140958
	12/05/2019			12/09/2019 21:19	Madeline Funaro	2140959
	12/05/2019			12/09/2019 21:33	Madeline Funaro	2140963