

Chemical Analysis Report

CEN-DIST-2022-11-30-01

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Jim and Second Cricks**
Request ID: **RQ-2022-10-03-24**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 19-DEC-2022 08:54

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Jim Creek 95m US of 520

Collection Date/Time: 11/29/2022 11:28

Field ID: G3CE0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371653	DEP SOP: NU-094-1	Color (true)	280		PCU	P422938	
	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P422941	
	EPA 300.0 Rev. 2.1	Chloride	25		mg Cl/L	P423296	
		Sulfate	0.33	I	mg SO4/L	P423300	
	SM 2320 B-2011	Total Alkalinity	24		mg CaCO3/L	P423069	
	SM 2540 C-2015	TDS	121		mg/L	P423366	
	SM 2540 D-2015	TSS	2	U	mg/L	P423165	
2371656	SM 4500-F- C-2011	Fluoride	0.033	I	mg F/L	P423072	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P423315	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P423016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P422975	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P423027	
2371664	SM 5310 B-2011	Organic Carbon	30		mg C/L	P423078	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P422936	
		Acesulfame K	0.10	U	ug/L	P422875	
		2,4,5-T	0.0040	U	ug/L	P422936	
		AMPA	0.10	U	ug/L	P422875	
		Acetaminophen	0.0080	U	ug/L	P422936	
		Acetamiprid	0.0020	U	ug/L	P422936	
		Endothall	0.25	U	ug/L	P422875	
		Glufosinate	0.10	U	ug/L	P422875	
		Glyphosate	0.10	U	ug/L	P422875	
		Afidopyropen	0.0020	U	ug/L	P422936	
		Bentazon	8.0E-04	U	ug/L	P422936	
		Sucralose	0.010	U	ug/L	P422875	
		Benzovindiflupyr	0.0020	U	ug/L	P422936	
		Carbamazepine	8.0E-04	U	ug/L	P422936	
		Clothianidin	0.0020	U	ug/L	P422936	
		Dinotefuran	0.0020	U	ug/L	P422936	
		Diuron	0.0020	U	ug/L	P422936	
		Fenuron	0.032	U	ug/L	P422936	
		Fluridone	8.0E-04	U	ug/L	P422936	
		Imazapyr	0.0076	I	ug/L	P422936	
		Hydrocodone	0.0020	U	ug/L	P422936	
		Ibuprofen	0.20	U	ug/L	P422936	
		Imidacloprid	0.0020	U	ug/L	P422936	
		Linuron	0.0040	U	ug/L	P422936	
		Mandestrobin	0.0020	U	ug/L	P422936	
		MCPP	0.0040	U	ug/L	P422936	
		Naproxen	0.0080	U	ug/L	P422936	
		Primidone	0.0040	U	ug/L	P422936	
		Pyraclostrobin	0.0020	U	ug/L	P422936	
		Silvex	0.0040	U	ug/L	P422936	
		Thiamethoxam	0.0020	U	ug/L	P422936	

Field ID: G3CE0047

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371664	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P422936	
		Triclopyr	0.0040	U	ug/L	P422936	
2371670	EPA 200.7 Rev. 4.4	Calcium	15.2		mg/L	P422959	
		Iron	570		ug/L	P422959	
		Magnesium	2.41		mg/L	P422959	
		Potassium	2.8		mg/L	P422959	
		Sodium	11.5		mg/L	P422959	
		Strontium	82.8		ug/L	P422959	
		Tin	3.0	U	ug/L	P422959	
		Titanium	1.1	I	ug/L	P422959	
		Vanadium	2.0	U	ug/L	P422959	
		Zinc	5.0	U	ug/L	P422959	
	EPA 200.8 Rev. 5.4	Aluminum	215		ug/L	P422959	
		Antimony	0.050	U	ug/L	P422959	
		Arsenic	0.44		ug/L	P422959	
		Barium	10.7		ug/L	P422959	
		Beryllium	0.023	I	ug/L	P422959	
		Boron	17.8		ug/L	P422959	
		Cadmium	0.020	U	ug/L	P422959	
		Chromium	0.55	I	ug/L	P422959	
		Cobalt	0.125		ug/L	P422959	
		Copper	0.40	U	ug/L	P422959	
		Lead	0.21	I	ug/L	P422959	
		Manganese	13.5		ug/L	P422959	
		Molybdenum	0.15	U	ug/L	P422959	
		Nickel	0.50	U	ug/L	P422959	
		Selenium	0.20	U	ug/L	P422959	
		Silver	0.010	U	ug/L	P422959	
		Thallium	0.10	U	ug/L	P422959	
	SM 2340 B-2011	Hardness	47.9		mg/L	P422959	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Second Creek at S.R. 520

Collection Date/Time: 11/29/2022 11:13

Field ID: G3CE0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371654	DEP SOP: NU-094-1	Color (true)	260		PCU	P422938	
	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P422941	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P423296	
		Sulfate	7.8	A	mg SO4/L	P423300	
	SM 2320 B-2011	Total Alkalinity	52		mg CaCO3/L	P423069	
	SM 2540 C-2015	TDS	156		mg/L	P423366	
	SM 2540 D-2015	TSS	3	I	mg/L	P423165	
2371657	SM 4500-F- C-2011	Fluoride	0.041	I	mg F/L	P423072	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P423315	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P423016	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P422975	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P423028	
2371665	SM 5310 B-2011	Organic Carbon	30		mg C/L	P423078	
	EPA 8321B	2,4-D	0.0020	U	ug/L	P422936	
		Acesulfame K	0.10	U	ug/L	P422875	
		2,4,5-T	0.0040	U	ug/L	P422936	
		AMPA	0.10	U	ug/L	P422875	
		Acetaminophen	0.0080	U	ug/L	P422936	
		Acetamiprid	0.0020	U	ug/L	P422936	
		Endothall	0.25	U	ug/L	P422875	
		Glufosinate	0.10	U	ug/L	P422875	
		Glyphosate	0.10	U	ug/L	P422875	
		Afidopyropen	0.0020	U	ug/L	P422936	
		Bentazon	8.0E-04	U	ug/L	P422936	
		Sucralose	0.010	U	ug/L	P422875	
		Benzovindiflupyr	0.0020	U	ug/L	P422936	
		Carbamazepine	8.0E-04	U	ug/L	P422936	
		Clothianidin	0.0020	U	ug/L	P422936	
		Dinotefuran	0.0020	U	ug/L	P422936	
		Diuron	0.0020	U	ug/L	P422936	
		Fenuron	0.032	U	ug/L	P422936	
		Fluridone	8.0E-04	U	ug/L	P422936	
		Imazapyr	0.0040	U	ug/L	P422936	
		Hydrocodone	0.0020	U	ug/L	P422936	
		Ibuprofen	0.20	U	ug/L	P422936	
		Imidacloprid	0.0020	U	ug/L	P422936	
		Linuron	0.0040	U	ug/L	P422936	
		Mandestrobin	0.0020	U	ug/L	P422936	
		MCP	0.0040	U	ug/L	P422936	
		Naproxen	0.0080	U	ug/L	P422936	
		Primidone	0.0040	U	ug/L	P422936	
		Pyraclostrobin	0.0020	U	ug/L	P422936	
		Silvex	0.0040	U	ug/L	P422936	
		Thiamethoxam	0.0020	U	ug/L	P422936	

Field ID: G3CE0066

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371665	EPA 8321B	Tolfenpyrad	0.0020	U	ug/L	P422936	
		Triclopyr	0.0040	U	ug/L	P422936	
2371671	EPA 200.7 Rev. 4.4	Calcium	28.5		mg/L	P423137	
		Iron	570		ug/L	P423137	
		Magnesium	2.30		mg/L	P423137	
		Potassium	1.9		mg/L	P423137	
		Sodium	10.1		mg/L	P423137	
		Strontium	141		ug/L	P423137	
		Tin	3.0	U	ug/L	P423137	
		Titanium	1.6	I	ug/L	P423137	
		Vanadium	2.0	U	ug/L	P423137	
		Zinc	5.0	U	ug/L	P423137	
	EPA 200.8 Rev. 5.4	Aluminum	187		ug/L	P422959	
		Antimony	0.050	U	ug/L	P422959	
		Arsenic	0.49		ug/L	P422959	
		Barium	16.6		ug/L	P422959	
		Beryllium	0.020	I	ug/L	P422959	
		Boron	16.9		ug/L	P422959	
		Cadmium	0.020	U	ug/L	P422959	
		Chromium	0.44	I	ug/L	P422959	
		Cobalt	0.126		ug/L	P422959	
		Copper	0.40	U	ug/L	P422959	
		Lead	0.21	I	ug/L	P422959	
		Manganese	20.2		ug/L	P422959	
		Molybdenum	0.17	I	ug/L	P422959	
		Nickel	0.67	I	ug/L	P422959	
		Selenium	0.20	U	ug/L	P422959	
		Silver	0.010	U	ug/L	P422959	
		Thallium	0.10	U	ug/L	P422959	
	SM 2340 B-2011	Hardness	80.8		mg/L	P423137	

Ref. Method and Comment:

SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: FB

Collection Date/Time: 11/29/2022 11:20

Field ID: FB_11292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371892	EPA 8321B	2,4-D	0.0020	U	ug/L	P422936	
		Acesulfame K	0.10	U	ug/L	P422875	
		2,4,5-T	0.0040	U	ug/L	P422936	
		AMPA	0.10	U	ug/L	P422875	
		Acetaminophen	0.0080	U	ug/L	P422936	
		Acetamiprid	0.0020	U	ug/L	P422936	
		Endothall	0.25	U	ug/L	P422875	
		Glufosinate	0.10	U	ug/L	P422875	
		Glyphosate	0.10	U	ug/L	P422875	
		Afidopyropen	0.0020	U	ug/L	P422936	
		Bentazon	8.0E-04	U	ug/L	P422936	
		Sucralose	0.010	U	ug/L	P422875	
		Benzovindiflupyr	0.0020	U	ug/L	P422936	
		Carbamazepine	8.0E-04	U	ug/L	P422936	
		Clothianidin	0.0020	U	ug/L	P422936	
		Dinotefuran	0.0020	U	ug/L	P422936	
		Diuron	0.0020	U	ug/L	P422936	
		Fenuron	0.032	U	ug/L	P422936	
		Fluridone	8.0E-04	U	ug/L	P422936	
		Imazapyr	0.0040	U	ug/L	P422936	
		Hydrocodone	0.0020	U	ug/L	P422936	
		Ibuprofen	0.20	U	ug/L	P422936	
		Imidacloprid	0.0020	U	ug/L	P422936	
		Linuron	0.0040	U	ug/L	P422936	
		Mandestrobin	0.0020	U	ug/L	P422936	
		MCPP	0.0040	U	ug/L	P422936	
		Naproxen	0.0080	U	ug/L	P422936	
		Primidone	0.0040	U	ug/L	P422936	
		Pyraclostrobin	0.0020	U	ug/L	P422936	
		Silvex	0.0040	U	ug/L	P422936	
		Thiamethoxam	0.0020	U	ug/L	P422936	
		Tolfenpyrad	0.0020	U	ug/L	P422936	
		Triclopyr	0.0040	U	ug/L	P422936	
2371893	EPA 200.7 Rev. 4.4	Calcium	0.075	U	mg/L	P422962	
		Iron	30	U	ug/L	P422962	
		Magnesium	0.040	U	mg/L	P422962	
		Potassium	0.30	U	mg/L	P422962	
		Sodium	0.50	U	mg/L	P422962	
		Strontium	2.0	U	ug/L	P422962	
		Tin	3.0	U	ug/L	P422962	
		Titanium	0.75	U	ug/L	P422962	
		Vanadium	2.0	U	ug/L	P422962	
		Zinc	5.0	U	ug/L	P422962	
	EPA 200.8 Rev. 5.4	Aluminum	5.0	U	ug/L	P422962	

Field ID: FB_11292022

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2371893	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P422962	
		Arsenic	0.050	U	ug/L	P422962	
		Barium	0.20	U	ug/L	P422962	
		Beryllium	0.010	U	ug/L	P422962	
		Boron	2.0	U	ug/L	P422962	
		Cadmium	0.020	U	ug/L	P422962	
		Chromium	0.40	U	ug/L	P422962	
		Cobalt	0.020	U	ug/L	P422962	
		Copper	0.40	U	ug/L	P422962	
		Lead	0.20	U	ug/L	P422962	
		Manganese	0.10	U	ug/L	P422962	
		Molybdenum	0.15	U	ug/L	P422962	
		Nickel	0.50	U	ug/L	P422962	
		Selenium	0.20	U	ug/L	P422962	
		Silver	0.010	U	ug/L	P422962	
		Thallium	0.10	U	ug/L	P422962	
	SM 2340 B-2011	Hardness	0.35	U	mg/L	P422962	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: Batch matrix spike recoveries for copper are unavailable for one of two spiked samples because of high analyte concentration in the QC sample.

Quality Assurance Report Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P422938

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422941

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422959

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422962

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423137

Component	Result	Code	Units
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
Strontium	2.0	U	ug/L
Tin	3.0	U	ug/L
Titanium	0.75	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	5.0	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422959

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	U	ug/L
Nickel	0.50	U	ug/L
Selenium	0.20	U	ug/L
Silver	0.010	U	ug/L
Thallium	0.10	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422962

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Barium	0.20	U	ug/L
Beryllium	0.010	U	ug/L
Boron	2.0	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Cobalt	0.020	U	ug/L
Copper	0.40	U	ug/L
Lead	0.20	U	ug/L
Manganese	0.10	U	ug/L
Molybdenum	0.15	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: P423296

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423300

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: P423315

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422975

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423027

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423028

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

Reference Method: EPA 8321B
Batch ID: P422875

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: EPA 8321B
Batch ID: P422936

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
2,4,5-T	0.0040	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B

Batch ID: P422936

Component	Result	Code	Units
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.20	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	0.0040	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Silvex	0.0040	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P423069

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

Reference Method: SM 2540 C-2015

Batch ID: P423366

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015

Batch ID: P423165

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011

Batch ID: P423072

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011

Batch ID: P423078

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P422938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.9		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422941

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	106		P	85 - 115
Iron	104		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	105		P	85 - 115
Sodium	109		P	85 - 115
Strontium	106		P	85 - 115
Tin	103		P	85 - 115
Titanium	106		P	85 - 115
Vanadium	104		P	85 - 115
Zinc	103		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	109		P	85 - 115
Iron	112		P	85 - 115
Magnesium	110		P	85 - 115
Potassium	108		P	85 - 115
Sodium	111		P	85 - 115
Strontium	107		P	85 - 115
Tin	107		P	85 - 115
Titanium	107		P	85 - 115
Vanadium	105		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423137

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	103		P	85 - 115
Iron	104		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	96.1		P	85 - 115
Sodium	98.1		P	85 - 115
Strontium	99.9		P	85 - 115
Tin	101		P	85 - 115
Titanium	103		P	85 - 115
Vanadium	101		P	85 - 115
Zinc	101		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	85 - 115
Antimony	101		P	85 - 115
Arsenic	105		P	85 - 115
Barium	101		P	85 - 115
Beryllium	100		P	85 - 115
Boron	103		P	85 - 115
Cadmium	102		P	85 - 115
Chromium	99.2		P	85 - 115
Cobalt	97.0		P	85 - 115
Copper	98.0		P	85 - 115
Lead	92.8		P	85 - 115
Manganese	98.2		P	85 - 115
Molybdenum	98.3		P	85 - 115
Nickel	98.3		P	85 - 115
Selenium	105		P	85 - 115
Silver	99.7		P	85 - 115
Thallium	97.5		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422962

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.3		P	85 - 115
Antimony	102		P	85 - 115
Arsenic	96.6		P	85 - 115
Barium	99.0		P	85 - 115
Beryllium	95.8		P	85 - 115
Boron	100		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	95.9		P	85 - 115
Cobalt	94.3		P	85 - 115
Copper	97.3		P	85 - 115
Lead	91.8		P	85 - 115
Manganese	95.6		P	85 - 115
Molybdenum	95.6		P	85 - 115
Nickel	97.1		P	85 - 115
Selenium	96.4		P	85 - 115
Silver	98.1		P	85 - 115
Thallium	94.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423296

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423300

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423315

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423016

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422975

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423027

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423028

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

Reference Method: EPA 8321B
Batch ID: P422875

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	108		P	40 - 150
AMPA	90.0		P	40 - 150
Endothall	85.5		P	40 - 150
Glufosinate	80.1		P	40 - 150
Glyphosate	100		P	40 - 150
Sucralose	97.3		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	89.2		P	40 - 150
2,4,5-T	84.0		P	40 - 150
Acetaminophen	81.3		P	30 - 150
Acetamiprid	83.5		P	40 - 150
Afidopyropen	67.9		P	30 - 150
Bentazon	91.8		P	30 - 150
Benzovindiflupyr	81.1		P	40 - 150
Carbamazepine	92.4		P	40 - 150
Clothianidin	97.5		P	40 - 150
Dinotefuran	84.4		P	40 - 150
Diuron	81.0		P	40 - 150

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P422936

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fenuron	106		P	40 - 150
Fluridone	99.3		P	40 - 150
Hydrocodone	98.2		P	40 - 150
Ibuprofen	95.6		P	40 - 150
Imazapyr	83.1		P	40 - 150
Imidacloprid	101		P	40 - 150
Linuron	78.0		P	40 - 150
Mandestrobin	90.7		P	40 - 150
MCPP	90.4		P	40 - 150
Naproxen	92.0		P	40 - 150
Primidone	90.8		P	40 - 150
Pyraclostrobin	85.0		P	40 - 150
Silvex	84.4		P	40 - 150
Thiamethoxam	92.3		P	40 - 150
Tolfenpyrad	45.7		P	30 - 150
Triclopyr	88.0		P	40 - 150

Reference Method: SM 2320 B-2011

Batch ID: P423069

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.0		P	94 - 106

Reference Method: SM 2540 C-2015

Batch ID: P423366

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	95.4		P	90 - 110

Reference Method: SM 2540 D-2015

Batch ID: P423165

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	88.1		P	85 - 106

Reference Method: SM 4500-F- C-2011

Batch ID: P423072

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	96 - 104

Reference Method: SM 5310 B-2011

Batch ID: P423078

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.1		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P422959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371552	Calcium	96.5		P	80 - 120
2371552	Iron	106	104	P/P	80 - 120
2371552	Magnesium	96.8		P	80 - 120
2371552	Potassium	105	102	P/P	80 - 120
2371552	Sodium	105	103	P/P	80 - 120
2371552	Strontium	104	103	P/P	80 - 120
2371552	Tin	105	102	P/P	80 - 120
2371552	Titanium	107	105	P/P	80 - 120
2371552	Vanadium	108	105	P/P	80 - 120
2371552	Zinc	103	101	P/P	80 - 120
2371553	Calcium	103		P	80 - 120
2371553	Iron	108		P	80 - 120
2371553	Magnesium	107		P	80 - 120
2371553	Potassium	105		P	80 - 120
2371553	Sodium	109		P	80 - 120
2371553	Strontium	105		P	80 - 120
2371553	Tin	104		P	80 - 120
2371553	Titanium	105		P	80 - 120
2371553	Vanadium	106		P	80 - 120
2371553	Zinc	103		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P422962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371117	Calcium	103		P	80 - 120
2371117	Iron	109	105	P/P	80 - 120
2371117	Magnesium	104		P	80 - 120
2371117	Potassium	106	100	P/P	80 - 120
2371117	Sodium	109	101	P/P	80 - 120
2371117	Strontium	104	99.9	P/P	80 - 120
2371117	Tin	107	103	P/P	80 - 120
2371117	Titanium	103	101	P/P	80 - 120
2371117	Vanadium	103	101	P/P	80 - 120
2371117	Zinc	97.3	95.5	P/P	80 - 120
2371789	Iron	108		P	80 - 120
2371789	Magnesium	110		P	80 - 120
2371789	Potassium	103		P	80 - 120
2371789	Sodium	111		P	80 - 120
2371789	Strontium	103		P	80 - 120
2371789	Tin	106		P	80 - 120
2371789	Titanium	106		P	80 - 120
2371789	Vanadium	103		P	80 - 120
2371789	Zinc	100		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372408	Calcium	103		P	80 - 120
2372408	Iron	102	101	P/P	80 - 120
2372408	Magnesium	102		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2372408	Potassium	98.3	97.5	P/P	80 - 120
2372408	Sodium	97.0	95.3	P/P	80 - 120
2372408	Strontium	101	100	P/P	80 - 120
2372408	Tin	101	99.3	P/P	80 - 120
2372408	Titanium	105	104	P/P	80 - 120
2372408	Vanadium	101	101	P/P	80 - 120
2372408	Zinc	95.0	95.2	P/P	80 - 120
2372684	Calcium	97.3		P	80 - 120
2372684	Iron	102		P	80 - 120
2372684	Magnesium	98.8		P	80 - 120
2372684	Potassium	98.6		P	80 - 120
2372684	Sodium	96.9		P	80 - 120
2372684	Strontium	101		P	80 - 120
2372684	Tin	102		P	80 - 120
2372684	Titanium	106		P	80 - 120
2372684	Vanadium	102		P	80 - 120
2372684	Zinc	97.7		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371552	Aluminum	98.4	100	P/P	80 - 120
2371552	Antimony	102	104	P/P	80 - 120
2371552	Arsenic	103	101	P/P	80 - 120
2371552	Barium	99.0	99.6	P/P	80 - 120
2371552	Beryllium	100	101	P/P	80 - 120
2371552	Boron	103	104	P/P	80 - 120
2371552	Cadmium	107	104	P/P	80 - 120
2371552	Chromium	100	103	P/P	80 - 120
2371552	Cobalt	96.4	96.6	P/P	80 - 120
2371552	Copper	94.1	94.7	P/P	80 - 120
2371552	Lead	92.8	93.4	P/P	80 - 120
2371552	Manganese	99.7	101	P/P	80 - 120
2371552	Molybdenum	101	103	P/P	80 - 120
2371552	Nickel	96.5	97.3	P/P	80 - 120
2371552	Selenium	103	98.8	P/P	80 - 120
2371552	Silver	99.4	100	P/P	80 - 120
2371552	Thallium	99.1	100	P/P	80 - 120
2371553	Aluminum	98.3		P	80 - 120
2371553	Antimony	104		P	80 - 120
2371553	Arsenic	101		P	80 - 120
2371553	Barium	99.6		P	80 - 120
2371553	Beryllium	97.3		P	80 - 120
2371553	Boron	101		P	80 - 120
2371553	Cadmium	104		P	80 - 120
2371553	Chromium	101		P	80 - 120
2371553	Cobalt	93.8		P	80 - 120
2371553	Copper	91.7		P	80 - 120
2371553	Lead	92.4		P	80 - 120
2371553	Manganese	102		P	80 - 120
2371553	Molybdenum	99.6		P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371553	Nickel	94.0		P	80 - 120
2371553	Selenium	101		P	80 - 120
2371553	Silver	100		P	80 - 120
2371553	Thallium	98.3		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422962

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371117	Aluminum	95.7	92.4	P/P	80 - 120
2371117	Antimony	106	103	P/P	80 - 120
2371117	Arsenic	100	96.7	P/P	80 - 120
2371117	Barium	101	99.1	P/P	80 - 120
2371117	Beryllium	92.6	94.4	P/P	80 - 120
2371117	Boron	100	98.1	P/P	80 - 120
2371117	Cadmium	106	103	P/P	80 - 120
2371117	Chromium	101	99.9	P/P	80 - 120
2371117	Cobalt	94.7	92.7	P/P	80 - 120
2371117	Lead	91.6	91.1	P/P	80 - 120
2371117	Manganese	98.1	98.2	P/P	80 - 120
2371117	Molybdenum	101	97.8	P/P	80 - 120
2371117	Nickel	97.8	96.1	P/P	80 - 120
2371117	Selenium	99.1	96.5	P/P	80 - 120
2371117	Silver	98.4	96.4	P/P	80 - 120
2371117	Thallium	100	98.4	P/P	80 - 120
2371789	Aluminum	93.6		P	80 - 120
2371789	Antimony	103		P	80 - 120
2371789	Arsenic	100		P	80 - 120
2371789	Barium	98.2		P	80 - 120
2371789	Beryllium	93.7		P	80 - 120
2371789	Boron	102		P	80 - 120
2371789	Cadmium	103		P	80 - 120
2371789	Chromium	98.3		P	80 - 120
2371789	Cobalt	100		P	80 - 120
2371789	Copper	89.6		P	80 - 120
2371789	Lead	97.1		P	80 - 120
2371789	Manganese	96.4		P	80 - 120
2371789	Molybdenum	100		P	80 - 120
2371789	Nickel	90.7		P	80 - 120
2371789	Selenium	98.3		P	80 - 120
2371789	Silver	95.7		P	80 - 120
2371789	Thallium	99.2		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P423296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371654	Chloride	98.9		P	90 - 110
2371729	Chloride	99.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371654	Sulfate	98.3		P	90 - 110
2371729	Sulfate	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423315

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371539	Ammonia-N	98.0	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371709	Kjeldahl Nitrogen	101	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422975

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371568	NO2NO3-N	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371646	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P422875

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371390	Acesulfame K	59.4	56.4	P/P	40 - 150
2371390	AMPA	81.4	76.5	P/P	40 - 150
2371390	Endothall	62.1	67.7	P/P	40 - 150
2371390	Glufosinate	76.2	77.2	P/P	40 - 150
2371390	Glyphosate	95.7	98.0	P/P	40 - 150
2371390	Sucralose	88.7	89.9	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P422936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371586	2,4-D	83.6	82.0	P/P	40 - 150
2371586	2,4,5-T	81.4	83.8	P/P	40 - 150
2371586	Acetaminophen	83.4	92.0	P/P	30 - 150
2371586	Acetamiprid	77.0	76.7	P/P	40 - 150
2371586	Afidopyropen	59.8	60.9	P/P	30 - 150
2371586	Bentazon	97.0	103	P/P	30 - 150
2371586	Benzovindiflupyr	79.9	92.6	P/P	40 - 150
2371586	Carbamazepine	91.5	103	P/P	40 - 150
2371586	Clothianidin	99.9	105	P/P	40 - 150
2371586	Dinotefuran	90.9	97.6	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P422936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371586	Diuron	78.3	83.0	P/P	40 - 150
2371586	Fenuron	100	110	P/P	40 - 150
2371586	Fluridone	88.1	98.8	P/P	40 - 150
2371586	Hydrocodone	93.3	96.1	P/P	40 - 150
2371586	Ibuprofen	84.1	71.9	P/P	40 - 150
2371586	Imazapyr	81.2	88.9	P/P	40 - 150
2371586	Imidacloprid	122	130	P/P	40 - 150
2371586	Linuron	71.9	75.2	P/P	40 - 150
2371586	Mandestrobin	88.2	88.4	P/P	40 - 150
2371586	MCP	94.1	94.3	P/P	40 - 150
2371586	Naproxen	82.6	78.0	P/P	40 - 150
2371586	Primidone	85.2	93.9	P/P	40 - 150
2371586	Pyraclostrobin	86.3	92.2	P/P	40 - 150
2371586	Silvex	86.7	92.6	P/P	40 - 150
2371586	Thiamethoxam	103	109	P/P	40 - 150
2371586	Tolfenpyrad	52.8	57.7	P/P	30 - 150
2371586	Triclopyr	83.2	84.1	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P423072

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371532	Fluoride	101	101	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P423078

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2371535	Organic Carbon	98.4	99.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P422938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371564	Color (true)	0.214	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P422941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371625	Turbidity	0.832	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371552	Calcium	1.59	Spike	P	0 - 20
2371552	Iron	1.95	Spike	P	0 - 20
2371552	Magnesium	2.29	Spike	P	0 - 20
2371552	Potassium	2.60	Spike	P	0 - 20
2371552	Sodium	1.19	Spike	P	0 - 20
2371552	Strontium	0.709	Spike	P	0 - 20
2371552	Tin	2.13	Spike	P	0 - 20
2371552	Titanium	1.72	Spike	P	0 - 20
2371552	Vanadium	2.33	Spike	P	0 - 20
2371552	Zinc	2.14	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P422962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371117	Calcium	5.48	Spike	P	0 - 20
2371117	Iron	3.22	Spike	P	0 - 20
2371117	Magnesium	3.75	Spike	P	0 - 20
2371117	Potassium	4.13	Spike	P	0 - 20
2371117	Sodium	4.14	Spike	P	0 - 20
2371117	Strontium	4.14	Spike	P	0 - 20
2371117	Tin	4.23	Spike	P	0 - 20
2371117	Titanium	1.38	Spike	P	0 - 20
2371117	Vanadium	1.41	Spike	P	0 - 20
2371117	Zinc	1.39	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P423137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372408	Calcium	1.62	Spike	P	0 - 20
2372408	Iron	0.718	Spike	P	0 - 20
2372408	Magnesium	1.17	Spike	P	0 - 20
2372408	Potassium	0.725	Spike	P	0 - 20
2372408	Sodium	1.05	Spike	P	0 - 20

Quality Assurance Report

Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P423137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2372408	Strontium	1.10	Spike	P	0 - 20
2372408	Tin	1.41	Spike	P	0 - 20
2372408	Titanium	0.618	Spike	P	0 - 20
2372408	Vanadium	0.483	Spike	P	0 - 20
2372408	Zinc	0.240	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371552	Aluminum	2.12	Spike	P	0 - 20
2371552	Antimony	1.78	Spike	P	0 - 20
2371552	Arsenic	1.88	Spike	P	0 - 20
2371552	Barium	0.634	Spike	P	0 - 20
2371552	Beryllium	0.253	Spike	P	0 - 20
2371552	Boron	0.405	Spike	P	0 - 20
2371552	Cadmium	2.22	Spike	P	0 - 20
2371552	Chromium	2.00	Spike	P	0 - 20
2371552	Cobalt	0.164	Spike	P	0 - 20
2371552	Copper	0.591	Spike	P	0 - 20
2371552	Lead	0.551	Spike	P	0 - 20
2371552	Manganese	0.828	Spike	P	0 - 20
2371552	Molybdenum	2.17	Spike	P	0 - 20
2371552	Nickel	0.865	Spike	P	0 - 20
2371552	Selenium	3.68	Spike	P	0 - 20
2371552	Silver	0.910	Spike	P	0 - 20
2371552	Thallium	1.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P422962

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371117	Aluminum	3.46	Spike	P	0 - 20
2371117	Antimony	2.14	Spike	P	0 - 20
2371117	Arsenic	3.77	Spike	P	0 - 20
2371117	Barium	1.42	Spike	P	0 - 20
2371117	Beryllium	1.91	Spike	P	0 - 20
2371117	Boron	1.83	Spike	P	0 - 20
2371117	Cadmium	2.43	Spike	P	0 - 20
2371117	Chromium	1.15	Spike	P	0 - 20
2371117	Cobalt	2.17	Spike	P	0 - 20
2371117	Copper	0.947	Spike	P	0 - 20
2371117	Lead	0.496	Spike	P	0 - 20
2371117	Manganese	0.0534	Spike	P	0 - 20
2371117	Molybdenum	2.52	Spike	P	0 - 20
2371117	Nickel	1.80	Spike	P	0 - 20
2371117	Selenium	2.60	Spike	P	0 - 20
2371117	Silver	2.05	Spike	P	0 - 20
2371117	Thallium	2.04	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371654	Chloride	0.955	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371654	Sulfate	0.918	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P423315

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371539	Ammonia-N	1.03	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371709	Kjeldahl Nitrogen	5.35	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P422975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371568	NO2NO3-N	0.510	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371646	Total-P	1.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371680	Total-P	1.68	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P422875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371390	Acesulfame K	5.22	Spike	P	0 - 30
2371390	AMPA	4.31	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B

Batch ID: P422875

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371390	Endothall	8.58	Spike	P	0 - 30
2371390	Glufosinate	1.20	Spike	P	0 - 30
2371390	Glyphosate	1.99	Spike	P	0 - 30
2371390	Sucralose	1.19	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P422936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371586	2,4-D	1.95	Spike	P	0 - 30
2371586	2,4,5-T	2.81	Spike	P	0 - 30
2371586	Acetaminophen	9.79	Spike	P	0 - 30
2371586	Acetamiprid	0.400	Spike	P	0 - 30
2371586	Afidopyropen	1.82	Spike	P	0 - 30
2371586	Bentazon	6.41	Spike	P	0 - 30
2371586	Benzovindiflupyr	14.7	Spike	P	0 - 30
2371586	Carbamazepine	12.3	Spike	P	0 - 30
2371586	Clothianidin	5.16	Spike	P	0 - 30
2371586	Dinotefuran	7.02	Spike	P	0 - 30
2371586	Diuron	5.76	Spike	P	0 - 30
2371586	Fenuron	9.40	Spike	P	0 - 30
2371586	Fluridone	11.4	Spike	P	0 - 30
2371586	Hydrocodone	2.97	Spike	P	0 - 30
2371586	Ibuprofen	15.6	Spike	P	0 - 30
2371586	Imazapyr	9.05	Spike	P	0 - 30
2371586	Imidacloprid	6.47	Spike	P	0 - 30
2371586	Linuron	4.53	Spike	P	0 - 30
2371586	Mandestrobin	0.190	Spike	P	0 - 30
2371586	MCPP	0.176	Spike	P	0 - 30
2371586	Naproxen	5.66	Spike	P	0 - 30
2371586	Primidone	9.76	Spike	P	0 - 30
2371586	Pyraclostrobin	6.59	Spike	P	0 - 30
2371586	Silvex	6.61	Spike	P	0 - 30
2371586	Thiamethoxam	5.56	Spike	P	0 - 30
2371586	Tolfenpyrad	8.85	Spike	P	0 - 30
2371586	Triclopyr	1.11	Spike	P	0 - 30

Reference Method: SM 2320 B-2011

Batch ID: P423069

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371532	Total Alkalinity	0.00946	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015

Batch ID: P423366

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371534	TDS	5.56	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500-F- C-2011
Batch ID: P423072

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371532	Fluoride	0.514	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423078

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2371535	Organic Carbon	0.861	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2371664

Field Sample ID: G3CE0047

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	122	P	30 - 160
EPA 8321B	Acetaminophen-d4	106	P	30 - 160
EPA 8321B	Carbamazepine-d10	69.8	P	30 - 160
EPA 8321B	Diuron-d6	51.5	P	30 - 160
EPA 8321B	Endothall-d6	62.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.2	P	30 - 160
EPA 8321B	Primidone-d5	96.3	P	30 - 160
EPA 8321B	Sucralose-d6	126	P	30 - 160

Lab Sample ID: 2371665

Field Sample ID: G3CE0066

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	129	P	30 - 160
EPA 8321B	Acetaminophen-d4	118	P	30 - 160
EPA 8321B	Carbamazepine-d10	73.9	P	30 - 160
EPA 8321B	Diuron-d6	56.7	P	30 - 160
EPA 8321B	Endothall-d6	67.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	90.7	P	30 - 160
EPA 8321B	Ibuprofen-d3	89.5	P	30 - 160
EPA 8321B	Primidone-d5	102	P	30 - 160
EPA 8321B	Sucralose-d6	131	P	30 - 160

Lab Sample ID: 2371892

Field Sample ID: FB_11292022

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	87.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	84.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	91.5	P	30 - 160
EPA 8321B	Diuron-d6	80.9	P	30 - 160
EPA 8321B	Endothall-d6	57.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	97.2	P	30 - 160
EPA 8321B	Ibuprofen-d3	84.8	P	30 - 160
EPA 8321B	Primidone-d5	98.6	P	30 - 160
EPA 8321B	Sucralose-d6	141	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: DEP SOP: NU-094-1

Run ID: A116195

Included Lab Sample IDs: 2371653, 2371654

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	99.6	P/P	90 - 110
Color (true)	99.7	98.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A116196

Included Lab Sample IDs: 2371653, 2371654

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	98.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A116205

Included Lab Sample IDs: 2371656, 2371657

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116217

Included Lab Sample IDs: 2371670

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	105	105	P/P	90 - 110
Iron	104	104	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110
Potassium	102	102	P/P	90 - 110
Sodium	105	105	P/P	90 - 110
Strontium	98.1	107	P/P	90 - 110
Tin	97.1	103	P/P	90 - 110
Titanium	97.5	103	P/P	90 - 110
Vanadium	97.0	102	P/P	90 - 110
Zinc	98.1	105	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A116218

Included Lab Sample IDs: 2371664, 2371665, 2371892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	116	121	P/P	60 - 160
Acesulfame K	122	116	P/P	60 - 160
Sucralose	91.6	86.4	P/P	60 - 160
Sucralose	94.9	91.6	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A116223

Included Lab Sample IDs: 2371664, 2371665, 2371892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.6	98.1	P/P	60 - 160
AMPA	98.1	89.3	P/P	60 - 160
Endothall	62.6	64.9	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116223

Included Lab Sample IDs: 2371664, 2371665, 2371892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Endothall	64.9	67.7	P/P	60 - 160
Glufosinate	73.0	75.8	P/P	60 - 160
Glufosinate	75.8	78.3	P/P	60 - 160
Glyphosate	103	111	P/P	60 - 160
Glyphosate	111	107	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116245

Included Lab Sample IDs: 2371893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.8	99.8	P/P	90 - 110
Iron	100	100	P/P	90 - 110
Magnesium	100	100	P/P	90 - 110
Potassium	98.5	97.8	P/P	90 - 110
Sodium	98.8	98.4	P/P	90 - 110
Strontium	104	101	P/P	90 - 110
Tin	102	101	P/P	90 - 110
Titanium	101	99.4	P/P	90 - 110
Vanadium	99.4	97.6	P/P	90 - 110
Zinc	99.8	99.5	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116247

Included Lab Sample IDs: 2371670, 2371671

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	103	103	P/P	90 - 110
Barium	98.7	100	P/P	90 - 110
Beryllium	101	103	P/P	90 - 110
Cadmium	105	104	P/P	90 - 110
Chromium	101	101	P/P	90 - 110
Cobalt	93.3	93.7	P/P	90 - 110
Copper	94.7	93.8	P/P	90 - 110
Lead	93.4	93.5	P/P	90 - 110
Manganese	100	100	P/P	90 - 110
Molybdenum	99.4	100	P/P	90 - 110
Nickel	93.7	94.4	P/P	90 - 110
Silver	98.6	98.4	P/P	90 - 110
Thallium	99.6	98.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116248

Included Lab Sample IDs: 2371670, 2371671

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	95.2	95.8	P/P	90 - 110
Arsenic	99.2	98.3	P/P	90 - 110
Boron	94.3	96.9	P/P	90 - 110
Selenium	104	104	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A116251

Included Lab Sample IDs: 2371653, 2371654

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.8	95.7	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A116251

Included Lab Sample IDs: 2371653, 2371654

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

Reference Method: EPA 8321B

Run ID: A116252

Included Lab Sample IDs: 2371664, 2371665, 2371892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	97.2	98.8	P/P	50 - 150
2,4-D	98.8	101	P/P	50 - 150
2,4,5-T	106	113	P/P	50 - 150
2,4,5-T	99.0	106	P/P	50 - 150
Acetaminophen	87.0	93.8	P/P	60 - 160
Acetaminophen	93.8	99.0	P/P	60 - 160
Acetamiprid	104	104	P/P	50 - 150
Acetamiprid	104	104	P/P	50 - 150
Afidopyropen	102	104	P/P	50 - 150
Afidopyropen	104	106	P/P	50 - 150
Bentazon	105	96.2	P/P	50 - 160
Bentazon	111	105	P/P	50 - 160
Benzovindiflupyr	102	106	P/P	50 - 150
Benzovindiflupyr	104	102	P/P	50 - 150
Carbamazepine	105	112	P/P	60 - 150
Carbamazepine	107	105	P/P	60 - 150
Clothianidin	101	112	P/P	60 - 150
Clothianidin	112	100	P/P	60 - 150
Dinotefuran	90.5	104	P/P	50 - 150
Dinotefuran	93.0	90.5	P/P	50 - 150
Diuron	106	109	P/P	60 - 160
Diuron	109	106	P/P	60 - 160
Fenuron	105	104	P/P	60 - 150
Fenuron	100	105	P/P	60 - 150
Fluridone	105	108	P/P	60 - 160
Fluridone	108	109	P/P	60 - 160
Hydrocodone	89.3	98.7	P/P	60 - 150
Hydrocodone	93.2	89.3	P/P	60 - 150
Ibuprofen	123	56.7	P/P	50 - 160
Ibuprofen	56.7	129	P/P	50 - 160
Imazapyr	83.7	97.0	P/P	50 - 150
Imazapyr	91.0	83.7	P/P	50 - 150
Imidacloprid	102	98.3	P/P	60 - 150
Imidacloprid	98.3	104	P/P	60 - 150
Linuron	106	103	P/P	60 - 150
Linuron	98.0	106	P/P	60 - 150
Mandestrobin	104	108	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A116252

Included Lab Sample IDs: 2371664, 2371665, 2371892

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Mandestrobin	108	106	P/P	50 - 150
MCPD	89.6	99.0	P/P	50 - 150
MCPD	99.0	91.6	P/P	50 - 150
Naproxen	100	70.9	P/P	50 - 160
Naproxen	139	100	P/P	50 - 160
Primidone	92.8	99.7	P/P	60 - 150
Primidone	99.7	101	P/P	60 - 150
Pyraclostrobin	107	108	P/P	60 - 150
Pyraclostrobin	108	107	P/P	60 - 150
Silvex	92.7	93.4	P/P	50 - 150
Silvex	98.7	92.7	P/P	50 - 150
Thiamethoxam	104	105	P/P	50 - 150
Thiamethoxam	105	104	P/P	50 - 150
Tolfenpyrad	101	99.0	P/P	60 - 150
Tolfenpyrad	99.2	101	P/P	60 - 150
Triclopyr	100	116	P/P	50 - 150
Triclopyr	108	100	P/P	50 - 150

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116255

Included Lab Sample IDs: 2371657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A116256

Included Lab Sample IDs: 2371656, 2371657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.0	98.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A116260

Included Lab Sample IDs: 2371656

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.2	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A116263

Included Lab Sample IDs: 2371656, 2371657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.5	95.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116269

Included Lab Sample IDs: 2371893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116269

Included Lab Sample IDs: 2371893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	96.7	95.5	P/P	90 - 110
Antimony	102	100	P/P	90 - 110
Arsenic	98.6	96.7	P/P	90 - 110
Barium	96.4	96.4	P/P	90 - 110
Beryllium	98.4	97.0	P/P	90 - 110
Boron	94.7	95.1	P/P	90 - 110
Cadmium	102	101	P/P	90 - 110
Chromium	94.7	95.2	P/P	90 - 110
Manganese	96.8	95.8	P/P	90 - 110
Molybdenum	95.9	94.6	P/P	90 - 110
Selenium	103	102	P/P	90 - 110
Silver	94.4	94.2	P/P	90 - 110
Thallium	96.8	97.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A116272

Included Lab Sample IDs: 2371653, 2371654

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A116317

Included Lab Sample IDs: 2371893

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Cobalt	97.1	90.5	P/P	90 - 110
Copper	101	94.5	P/P	90 - 110
Lead	94.8	90.2	P/P	90 - 110
Nickel	100	92.9	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A116336

Included Lab Sample IDs: 2371656, 2371657

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.9	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116483

Included Lab Sample IDs: 2371671

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	103	102	P/P	95 - 105
Iron	104	105	P/P	95 - 105
Magnesium	103	104	P/P	95 - 105
Potassium	99.5	102	P/P	95 - 105
Sodium	101	99.6	P/P	95 - 105

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A116483

Included Lab Sample IDs: 2371671

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	96.9	102	P/P	95 - 105
Tin	100	104	P/P	95 - 105
Titanium	99.7	104	P/P	95 - 105
Vanadium	99.4	101	P/P	95 - 105
Zinc	101	95.0	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
DEP SOP: NU-094-1	Color (true)	97.9					0.214	
EPA 180.1 Rev. 2.0	Turbidity	99.3					0.832	
EPA 200.7 Rev. 4.4	Calcium	106	96.5	103				1.59
	Calcium	109	103					5.48
	Calcium	103	103	97.3				1.62
	Iron	104	106	104	108			1.95
	Iron	112	109	105	108			3.22
	Iron	104	102	101	102			0.718
	Magnesium	103	96.8	107				2.29
	Magnesium	110	104	110				3.75
	Magnesium	101	102	98.8				1.17
	Potassium	105	105	102	105			2.60
	Potassium	108	106	100	103			4.13
	Potassium	96.1	98.3	97.5	98.6			0.725
	Sodium	109	105	103	109			1.19
	Sodium	111	109	101	111			4.14
	Sodium	98.1	97.0	95.3	96.9			1.05
	Strontium	106	104	103	105			0.709
	Strontium	107	104	99.9	103			4.14
	Strontium	99.9	101	100	101			1.10
	Tin	103	105	102	104			2.13
	Tin	107	107	103	106			4.23
	Tin	101	101	99.3	102			1.41
	Titanium	106	107	105	105			1.72
	Titanium	107	103	101	106			1.38
	Titanium	103	105	104	106			0.618
	Vanadium	104	108	105	106			2.33
	Vanadium	105	103	101	103			1.41
	Vanadium	101	101	101	102			0.483
	Zinc	103	103	101	103			2.14
	Zinc	104	97.3	95.5	100			1.39
	Zinc	101	95.0	95.2	97.7			0.240
EPA 200.8 Rev. 5.4	Aluminum	102	98.4	100	98.3			2.12
	Aluminum	96.3	95.7	92.4	93.6			3.46
	Antimony	101	102	104	104			1.78
	Antimony	102	106	103	103			2.14
	Arsenic	105	103	101	101			1.88
	Arsenic	96.6	100	96.7	100			3.77
	Barium	101	99.6	99.0	99.6			0.634
	Barium	99.0	101	99.1	98.2			1.42
	Beryllium	100	100	101	97.3			0.253
	Beryllium	95.8	92.6	94.4	93.7			1.91
	Boron	103	103	104	101			0.405
	Boron	100	100	98.1	102			1.83
	Cadmium	102	107	104	104			2.22
	Cadmium	103	106	103	103			2.43
	Chromium	99.2	100	103	101			2.00
	Chromium	95.9	101	99.9	98.3			1.15
	Cobalt	97.0	96.4	96.6	93.8			0.164
	Cobalt	94.3	100	94.7	92.7			2.17
	Copper	98.0	94.1	94.7	91.7			0.591
	Copper	97.3	89.6					0.947
	Lead	92.8	92.8	93.4	92.4			0.551
	Lead	91.8	97.1	91.6	91.1			0.496

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 200.8 Rev. 5.4	Manganese	98.2	99.7	101	102		0.828
	Manganese	95.6	96.4	98.1	98.2		0.0534
	Molybdenum	98.3	101	103	99.6		2.17
	Molybdenum	95.6	101	97.8	100		2.52
	Nickel	98.3	96.5	97.3	94.0		0.865
	Nickel	97.1	97.8	96.1	90.7		1.80
	Selenium	105	101	103	98.8		3.68
	Selenium	96.4	99.1	96.5	98.3		2.60
	Silver	99.7	99.4	100	100		0.910
	Silver	98.1	98.4	96.4	95.7		2.05
	Thallium	97.5	99.1	100	98.3		1.15
	Thallium	94.4	100	98.4	99.2		2.04
	Chloride	101	98.9	99.4		0.955	
	Sulfate	101	98.3	99.8		0.918	
EPA 350.1 Rev. 2.0	Ammonia-N	95.8	98.0	97.0			1.03
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	101	109			5.35
EPA 353.2 Rev. 2.0	NO2NO3-N	104	104	102			0.510
EPA 365.1 Rev. 2.0	Total-P	105	104	102			1.76
	Total-P	106					1.68
EPA 8321B	2,4-D	89.2	83.6	82.0			1.95
	2,4,5-T	84.0	83.8	81.4			2.81
	Acesulfame K	108	59.4	56.4			5.22
	Acetaminophen	81.3	83.4	92.0			9.79
	Acetamiprid	83.5	77.0	76.7			0.400
	Afidopyropen	67.9	59.8	60.9			1.82
	AMPA	90.0	81.4	76.5			4.31
	Bentazon	91.8	97.0	103			6.41
	Benzovindiflupyr	81.1	79.9	92.6			14.7
	Carbamazepine	92.4	91.5	103			12.3
	Clothianidin	97.5	99.9	105			5.16
	Dinotefuran	84.4	90.9	97.6			7.02
	Diuron	81.0	78.3	83.0			5.76
	Endothall	85.5	62.1	67.7			8.58
	Fenuron	106	100	110			9.40
	Fluridone	99.3	88.1	98.8			11.4
	Glufosinate	80.1	76.2	77.2			1.20
	Glyphosate	100	95.7	98.0			1.99
	Hydrocodone	98.2	93.3	96.1			2.97
	Ibuprofen	95.6	71.9	84.1			15.6
	Imazapyr	83.1	81.2	88.9			9.05
	Imidacloprid	101	122	130			6.47
	Linuron	78.0	71.9	75.2			4.53
	Mandestrobin	90.7	88.2	88.4			0.190
	MCPP	90.4	94.1	94.3			0.176
	Naproxen	92.0	78.0	82.6			5.66
	Primidone	90.8	85.2	93.9			9.76
	Pyraclostrobin	85.0	86.3	92.2			6.59
	Silvex	84.4	92.6	86.7			6.61
	Sucralose	97.3	88.7	89.9			1.19
	Thiamethoxam	92.3	103	109			5.56
	Tolfenpyrad	45.7	52.8	57.7			8.85
	Triclopyr	88.0	83.2	84.1			1.11
SM 2320 B-2011	Total Alkalinity	98.0				0.0094	
SM 2540 C-2015	TDS	95.4				5.56	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 2540 D-2015	TSS	88.1				
SM 4500-F- C-2011	Fluoride	101	101	101		0.514
SM 5310 B-2011	Organic Carbon	95.1	98.4	99.2		0.861

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2371653, 2371654
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2371653, 2371654
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2371670, 2371671, 2371893
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2371670, 2371671, 2371893
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2371653, 2371654
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2371653, 2371654
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2371656, 2371657
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2371656, 2371657
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2371656, 2371657
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2371656, 2371657
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2371664, 2371665, 2371892
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2371653, 2371654
SM 2340 B-2011	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2371670, 2371671, 2371893
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2371653, 2371654
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2371653, 2371654
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2371653, 2371654
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2371656, 2371657

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	11/30/2022			11/30/2022 14:35	Chandler E Cox	2371653
	11/30/2022			11/30/2022 14:53	Chandler E Cox	2371654
EPA 180.1 Rev. 2.0	11/30/2022			11/30/2022 13:55	Anna M. Plaviak	2371653
	11/30/2022			11/30/2022 13:57	Anna M. Plaviak	2371654
EPA 200.7 Rev. 4.4	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/01/2022 23:09	McKinley C Carter	2371670
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/02/2022 18:17	McKinley C Carter	2371893
EPA 200.8 Rev. 5.4	11/30/2022	12/06/2022 11:30	Vijayalakshmi Reddy	12/15/2022 16:46	McKinley C Carter	2371671
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/03/2022 08:50	Emily M Philpot	2371670
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/03/2022 09:00	Emily M Philpot	2371671
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/04/2022 21:51	Emily M Philpot	2371670
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/04/2022 22:01	Emily M Philpot	2371671
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/05/2022 21:54	Emily M Philpot	2371893
	11/30/2022	12/01/2022 11:10	Megan Whitefoot	12/07/2022 17:01	Megan Whitefoot	2371893
EPA 300.0 Rev. 2.1	11/30/2022			12/07/2022 18:32	Anna M. Plaviak	2371654
	11/30/2022			12/07/2022 23:18	Anna M. Plaviak	2371653
EPA 350.1 Rev. 2.0	11/30/2022			12/08/2022 13:49	Ping Hua	2371656
	11/30/2022			12/08/2022 13:51	Ping Hua	2371657
EPA 351.2 Rev. 2.0	11/30/2022	12/02/2022 13:20	Simonne.V. Calhoun	12/05/2022 12:35	Judith K. Clark	2371656
	11/30/2022	12/02/2022 13:20	Simonne.V. Calhoun	12/05/2022 12:37	Judith K. Clark	2371657
EPA 353.2 Rev. 2.0	11/30/2022			12/01/2022 09:51	Beverly Y. Sanders	2371656
	11/30/2022			12/01/2022 09:52	Beverly Y. Sanders	2371657
EPA 365.1 Rev. 2.0	11/30/2022	12/02/2022 09:51	Adam P Silver	12/05/2022 10:08	James L Waggeberby	2371657
	11/30/2022	12/02/2022 09:51	Adam P Silver	12/05/2022 12:40	Simonne.V. Calhoun	2371656
EPA 8321B	11/30/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 12:43	Manjita Shrestha	2371664
	11/30/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 12:58	Manjita Shrestha	2371665
	11/30/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 20:44	Manjita Shrestha	2371664
	11/30/2022	12/01/2022 07:00	Manjita Shrestha	12/01/2022 20:57	Manjita Shrestha	2371665
	11/30/2022	12/01/2022 11:00	Manjita Shrestha	12/01/2022 14:43	Manjita Shrestha	2371892
	11/30/2022	12/01/2022 11:00	Manjita Shrestha	12/01/2022 22:28	Manjita Shrestha	2371892
	11/30/2022	12/02/2022 09:30	June Rhew	12/02/2022 20:19	Juyoung Kim	2371664
	11/30/2022	12/02/2022 09:30	June Rhew	12/02/2022 20:40	Juyoung Kim	2371665
	11/30/2022	12/02/2022 09:30	June Rhew	12/02/2022 23:06	Juyoung Kim	2371892
	11/30/2022			12/03/2022 04:47	Dale L. Simmons	2371653
SM 2320 B-2011	11/30/2022			12/03/2022 05:00	Dale L. Simmons	2371654
	11/30/2022			12/01/2022 23:09	McKinley C Carter	2371670
SM 2340 B-2011	11/30/2022			12/02/2022 18:17	McKinley C Carter	2371893
	11/30/2022			12/15/2022 16:46	McKinley C Carter	2371671
	11/30/2022			12/01/2022 15:43	Yijie Li	2371653, 2371654
SM 2540 C-2015	11/30/2022			12/01/2022 15:43	Yijie Li	2371653, 2371654
SM 4500-F- C-2011	11/30/2022			12/03/2022 04:47	Dale L. Simmons	2371653

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500-F- C-2011	11/30/2022			12/03/2022 05:00	Dale L. Simmons	2371654
SM 5310 B-2011	11/30/2022			12/03/2022 02:56	Elise M. Gillis	2371656
	11/30/2022			12/03/2022 03:11	Elise M. Gillis	2371657