

Chemical Analysis Report

CEN-DIST-2022-06-01-01

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

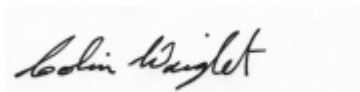
Event Description: **Run 18**
Request ID: **RQ-2022-05-30-15**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Colin Wright, Program Administrator

Date Certified: 23-JUN-2022 08:44

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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: Turnbull Bay 1.2 km of Turnbull Bay Rd

Collection Date/Time: 05/31/2022 11:48

Field ID: G5CE0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330839	EPA 8321B	2,4-D	0.073		ug/L	P414579	
		Acesulfame K	0.16	I	ug/L	P414602	MS
		2,4,5-T	0.0040	U	ug/L	P414579	
		AMPA	10	U	ug/L	P414602	
		Acetaminophen	0.0080	U	ug/L	P414579	
		Acetamiprid	0.0020	U	ug/L	P414579	
		Endothall	0.25	U	ug/L	P414602	
		Glufosinate	10	U	ug/L	P414602	
		Glyphosate	10	U	ug/L	P414602	
		Afidopyropen	0.0020	U	ug/L	P414579	
		Bentazon	0.11		ug/L	P414579	
		Sucralose	0.57		ug/L	P414602	
		Benzovindiflupyr	0.0020	U	ug/L	P414579	
		Carbamazepine	0.0019	I	ug/L	P414579	
		Clothianidin	0.0039	I	ug/L	P414579	
		Dinotefuran	0.0020	U	ug/L	P414579	
		Diuron	0.0050	I	ug/L	P414579	
		Fenuron	0.032	U	ug/L	P414579	
		Fluridone	0.012		ug/L	P414579	
		Imazapyr	0.066		ug/L	P414579	
		Hydrocodone	0.0020	U	ug/L	P414579	
		Ibuprofen	0.020	U	ug/L	P414579	
		Imidacloprid	0.0030	I	ug/L	P414579	MS
		Linuron	0.0040	U	ug/L	P414579	
		Mandestrobin	0.0020	U	ug/L	P414579	
		MCPP	0.0040	U	ug/L	P414579	
		Naproxen	0.0080	U	ug/L	P414579	
		Primidone	0.0056	I	ug/L	P414579	
		Pyraclostrobin	0.0020	U	ug/L	P414579	
		Silvex	0.0040	U	ug/L	P414579	
		Thiamethoxam	0.0020	U	ug/L	P414579	
		Tolfenpyrad	0.0020	U	ug/L	P414579	
		Triclopyr	0.0040	U	ug/L	P414579	
2330848	EPA 200.7 Rev. 4.4	Calcium	328		mg/L	P414615	
		Iron	480		ug/L	P414615	
		Magnesium	897		mg/L	P414615	
		Strontium	5.22E+03		ug/L	P414615	
		Tin	150	U	ug/L	P414615	
		Titanium	8.6	I	ug/L	P414615	
		Vanadium	6.0	U	ug/L	P414615	
		Zinc	15	U	ug/L	P414615	
	EPA 200.8 Rev. 5.4	Aluminum	360		ug/L	P414615	
		Antimony	0.20	U	ug/L	P414615	
		Arsenic	2.41		ug/L	P414615	

Field ID: G5CE0130

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330848	EPA 200.8 Rev. 5.4	Beryllium	0.040	U	ug/L	P414615	
		Cadmium	0.080	U	ug/L	P414615	
		Chromium	1.6	U	ug/L	P414615	
		Cobalt	0.16	I	ug/L	P414615	
		Copper	1.6	U	ug/L	P414615	
		Lead	0.80	U	ug/L	P414615	
		Manganese	29.4		ug/L	P414615	
		Molybdenum	8.2		ug/L	P414615	
		Nickel	2.0	U	ug/L	P414615	
		Selenium	0.80	U	ug/L	P414615	
		Silver	0.040	U	ug/L	P414615	
		Thallium	0.40	U	ug/L	P414615	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Turnbull Bay @ 350M NW of Turnbull Bay Road Collection Date/Time: 05/31/2022 11:56

Field ID: G5CE0157

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330814	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P414605	
	SM 2320 B-2011	Total Alkalinity	135		mg CaCO3/L	P414794	
	SM 2540 D-2011	TSS	17	A	mg/L	P414779	
	SM 4500-F- C-2011	Fluoride	0.99		mg F/L	P414801	
2330815	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P414973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.57		mg N/L	P414690	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P415034	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P414750	
	SM 5310 B-2011	Organic Carbon	7.9		mg C/L	P415265	
2330846	EPA 200.7 Rev. 4.4	Calcium	364		mg/L	P414615	
		Iron	380	I	ug/L	P414615	
		Magnesium	1.04E+03		mg/L	P414615	
		Strontium	5.91E+03		ug/L	P414615	
		Tin	150	U	ug/L	P414615	
		Titanium	9.1	I	ug/L	P414615	
		Vanadium	8.0	U	ug/L	P414615	
	EPA 200.8 Rev. 5.4	Zinc	20	U	ug/L	P414615	
		Aluminum	370		ug/L	P414615	
		Antimony	0.20	U	ug/L	P414615	
		Arsenic	2.44		ug/L	P414615	
		Beryllium	0.040	U	ug/L	P414615	
		Cadmium	0.080	U	ug/L	P414615	
		Chromium	1.6	U	ug/L	P414615	
		Cobalt	0.26	I	ug/L	P414615	
		Copper	1.6	U	ug/L	P414615	
		Lead	2.0	U	ug/L	P414615	
		Manganese	25.8		ug/L	P414615	
		Molybdenum	9.7		ug/L	P414615	
		Nickel	2.0	U	ug/L	P414615	
		Selenium	0.80	U	ug/L	P414615	
		Silver	0.040	U	ug/L	P414615	
		Thallium	1.0	U	ug/L	P414615	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Turnbull Bay @ 640m S of Divito Park

Collection Date/Time: 05/31/2022 12:15

Field ID: G5CE0100

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330816	EPA 180.1 Rev. 2.0	Turbidity	7.3		NTU	P414605	
	SM 2320 B-2011	Total Alkalinity	132		mg CaCO3/L	P414794	
	SM 2540 D-2011	TSS	10		mg/L	P414780	
	SM 4500-F- C-2011	Fluoride	1.0		mg F/L	P414801	
2330817	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P414973	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.42		mg N/L	P414690	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P415034	
	EPA 365.1 Rev. 2.0	Total-P	0.074		mg P/L	P414750	
	SM 5310 B-2011	Organic Carbon	6.5		mg C/L	P415265	
2330847	EPA 200.7 Rev. 4.4	Calcium	361		mg/L	P414615	
		Iron	230	I	ug/L	P414615	
		Magnesium	1.06E+03		mg/L	P414615	
		Strontium	5.82E+03		ug/L	P414615	
		Tin	150	U	ug/L	P414615	
		Titanium	7.1	I	ug/L	P414615	
		Vanadium	8.0	U	ug/L	P414615	
	EPA 200.8 Rev. 5.4	Zinc	20	U	ug/L	P414615	
		Aluminum	260		ug/L	P414615	
		Antimony	0.20	U	ug/L	P414615	
		Arsenic	2.37		ug/L	P414615	
		Beryllium	0.040	U	ug/L	P414615	
		Cadmium	0.080	U	ug/L	P414615	
		Chromium	1.6	U	ug/L	P414615	
		Cobalt	0.29	I	ug/L	P414615	
		Copper	1.6	U	ug/L	P414615	
		Lead	2.0	U	ug/L	P414615	
		Manganese	16.5		ug/L	P414615	
		Molybdenum	10.2		ug/L	P414615	
		Nickel	2.0	U	ug/L	P414615	
		Selenium	0.80	U	ug/L	P414615	
		Silver	0.040	U	ug/L	P414615	
		Thallium	1.0	U	ug/L	P414615	

Ref. Method and Comment:

EPA 200.7 Rev. 4.4: Batch matrix spike recoveries for magnesium are unavailable because of high analyte concentration in the QC sample.

Sample Location: Rose Bay @ 125m NE of Boat Ramp

Collection Date/Time: 05/31/2022 12:53

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330840	EPA 8321B	2,4-D	0.0061	I	ug/L	P414579	
		Acesulfame K	0.10	U	ug/L	P414602	MS
		2,4,5-T	0.0040	U	ug/L	P414579	
		AMPA	10	U	ug/L	P414602	
		Acetaminophen	0.0080	U	ug/L	P414579	
		Acetamiprid	0.0020	U	ug/L	P414579	
		Endothall	0.25	U	ug/L	P414602	
		Glufosinate	10	U	ug/L	P414602	
		Glyphosate	10	U	ug/L	P414602	
		Afidopyropen	0.0020	U	ug/L	P414579	
		Bentazon	0.044		ug/L	P414579	
		Sucralose	0.40		ug/L	P414602	
		Benzovindiflupyr	0.0020	U	ug/L	P414579	
		Carbamazepine	0.0013	I	ug/L	P414579	
		Clothianidin	0.0020	U	ug/L	P414579	
		Dinotefuran	0.0020	U	ug/L	P414579	
		Diuron	0.036		ug/L	P414579	
		Fenuron	0.032	U	ug/L	P414579	
		Fluridone	0.0059		ug/L	P414579	
		Imazapyr	0.015	I	ug/L	P414579	
		Hydrocodone	0.0020	U	ug/L	P414579	
		Ibuprofen	0.020	U	ug/L	P414579	
		Imidacloprid	0.0020	U	ug/L	P414579	MS
		Linuron	0.0040	U	ug/L	P414579	
		Mandestrobin	0.0020	U	ug/L	P414579	
		MCPP	0.0040	U	ug/L	P414579	
		Naproxen	0.0080	U	ug/L	P414579	
		Primidone	0.0040	U	ug/L	P414579	
		Pyraclostrobin	0.0020	U	ug/L	P414579	
		Silvex	0.0040	U	ug/L	P414579	
		Thiamethoxam	0.0020	U	ug/L	P414579	
		Tolfenpyrad	0.0020	U	ug/L	P414579	
		Triclopyr	0.0040	U	ug/L	P414579	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Sample Location: Rose Bay @ 200m E of Boat Ramp

Collection Date/Time: 05/31/2022 13:00

Field ID: G5CE0098

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2330841	EPA 8321B	2,4-D	0.0047	I	ug/L	P414579	
		Acesulfame K	0.10	U	ug/L	P414602	MS
		2,4,5-T	0.0040	U	ug/L	P414579	
		AMPA	10	U	ug/L	P414602	
		Acetaminophen	0.0080	U	ug/L	P414579	
		Acetamiprid	0.0020	U	ug/L	P414579	
		Endothall	0.25	U	ug/L	P414602	
		Glufosinate	10	U	ug/L	P414602	
		Glyphosate	10	U	ug/L	P414602	
		Afidopyropen	0.0020	U	ug/L	P414579	
		Bentazon	0.036		ug/L	P414579	
		Sucralose	0.40		ug/L	P414602	
		Benzovindiflupyr	0.0020	U	ug/L	P414579	
		Carbamazepine	0.0013	I	ug/L	P414579	
		Clothianidin	0.0020	U	ug/L	P414579	
		Dinotefuran	0.0020	U	ug/L	P414579	
		Diuron	0.024		ug/L	P414579	
		Fenuron	0.032	U	ug/L	P414579	
		Fluridone	0.0054		ug/L	P414579	
		Imazapyr	0.012	I	ug/L	P414579	
		Hydrocodone	0.0020	U	ug/L	P414579	
		Ibuprofen	0.020	U	ug/L	P414579	
		Imidacloprid	0.0020	U	ug/L	P414579	MS
		Linuron	0.0040	U	ug/L	P414579	
		Mandestrobin	0.0020	U	ug/L	P414579	
		MCPP	0.0040	U	ug/L	P414579	
		Naproxen	0.0080	U	ug/L	P414579	
		Primidone	0.0040	U	ug/L	P414579	
		Pyraclostrobin	0.0020	U	ug/L	P414579	
		Silvex	0.0040	U	ug/L	P414579	
		Thiamethoxam	0.0020	U	ug/L	P414579	
		Tolfenpyrad	0.0020	U	ug/L	P414579	
		Triclopyr	0.0040	U	ug/L	P414579	

Ref. Method and Comment:

EPA 8321B: MS accuracy and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample. MS accuracy for some analytes could not be assessed due to high concentration of parameter in the spiked sample.

EPA 8321B: Some MDLs are elevated due to required dilution of sample matrix.

Quality Assurance Report

Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P414605

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P414615

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Strontium	3.0	U	ug/L
Tin	25	U	ug/L
Titanium	1.0	U	ug/L
Vanadium	2.0	U	ug/L
Zinc	20	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P414615

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
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 350.1 Rev. 2.0

Batch ID: P414973

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P414690

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

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P415034

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414750

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

Reference Method: EPA 8321B

Batch ID: P414579

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
Fenuron	0.032	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0040	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: EPA 8321B

Batch ID: P414602

Component	Result	Code	Units
Acesulfame K	0.10	U	ug/L
AMPA	0.10	U	ug/L
Endothall	0.25	U	ug/L
Glufosinate	0.10	U	ug/L
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: SM 2320 B-2011

Batch ID: P414794

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P414779

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P414780

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P415265

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P414605

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P414615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	108		P	85 - 115
Iron	105		P	85 - 115
Magnesium	107		P	85 - 115
Strontium	103		P	85 - 115
Tin	104		P	85 - 115
Titanium	101		P	85 - 115
Vanadium	94.5		P	85 - 115
Zinc	104		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P414615

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.9		P	85 - 115
Antimony	98.1		P	85 - 115
Arsenic	97.5		P	85 - 115
Beryllium	90.6		P	85 - 115
Cadmium	96.7		P	85 - 115
Chromium	95.3		P	85 - 115
Cobalt	97.2		P	85 - 115
Copper	94.9		P	85 - 115
Lead	98.9		P	85 - 115
Manganese	96.8		P	85 - 115
Molybdenum	97.7		P	85 - 115
Nickel	96.5		P	85 - 115
Selenium	96.2		P	85 - 115
Silver	97.8		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P414973

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: P414690

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P415034

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P414750

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	109		P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P414579

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	68.6		P	40 - 150
2,4,5-T	48.5		P	40 - 150
Acetaminophen	69.3		P	30 - 150
Acetamiprid	79.5		P	40 - 150
Afidopyropen	56.6		P	30 - 150
Bentazon	93.3		P	30 - 150
Benzovindiflupyr	87.8		P	40 - 150
Carbamazepine	94.8		P	40 - 150
Clothianidin	100		P	40 - 150
Dinotefuran	101		P	40 - 150
Diuron	95.4		P	40 - 150
Fenuron	103		P	40 - 150
Fluridone	95.1		P	40 - 150
Hydrocodone	87.0		P	40 - 150
Ibuprofen	85.3		P	40 - 150
Imazapyr	90.0		P	40 - 150
Imidacloprid	91.1		P	40 - 150
Linuron	84.7		P	40 - 150
Mandestrobin	91.1		P	40 - 150
MCPP	77.7		P	40 - 150
Naproxen	70.8		P	40 - 150
Primidone	98.9		P	40 - 150
Pyraclostrobin	83.9		P	40 - 150
Silvex	48.9		P	40 - 150
Thiamethoxam	93.9		P	40 - 150
Tolfenpyrad	44.7		P	30 - 150
Triclopyr	56.1		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P414602

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	147		P	40 - 150
AMPA	91.4		P	40 - 150
Endothall	70.4		P	40 - 150
Glufosinate	98.8		P	40 - 150
Glyphosate	94.7		P	40 - 150
Sucralose	110		P	40 - 150

Reference Method: SM 2320 B-2011
 Batch ID: P414794

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	94 - 106

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.9		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P415265

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P414615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330285	Calcium	111		P	70 - 130
2330285	Iron	107	106	P/P	70 - 130
2330285	Strontium	93.3	101	P/P	70 - 130
2330285	Tin	76.2	83.1	P/P	70 - 130
2330285	Titanium	96.4	100	P/P	70 - 130
2330285	Vanadium	90.5	93.6	P/P	70 - 130
2330285	Zinc	94.9	98.8	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P414615

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330285	Aluminum	112	114	P/P	70 - 130
2330285	Antimony	97.7	98.6	P/P	70 - 130
2330285	Arsenic	109	111	P/P	70 - 130
2330285	Beryllium	109	101	P/P	70 - 130
2330285	Cadmium	96.0	95.8	P/P	70 - 130
2330285	Chromium	96.1	96.9	P/P	70 - 130
2330285	Cobalt	109	109	P/P	70 - 130
2330285	Copper	105	103	P/P	70 - 130
2330285	Lead	102	104	P/P	70 - 130
2330285	Manganese	94.9	96.5	P/P	70 - 130
2330285	Molybdenum	110	110	P/P	70 - 130
2330285	Nickel	108	109	P/P	70 - 130
2330285	Selenium	102	103	P/P	70 - 130
2330285	Silver	90.3	91.4	P/P	70 - 130
2330285	Thallium	104	106	P/P	70 - 130

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P414973

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330408	Ammonia-N	97.2	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P414690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330516	Kjeldahl Nitrogen	103	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P415034

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330517	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414750

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2331017	Total-P	106	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P414579

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330715	2,4-D	101	81.9	P/P	40 - 150
2330715	2,4,5-T	77.2	65.9	P/P	40 - 150
2330715	Acetaminophen	113	114	P/P	30 - 150
2330715	Acetamiprid	101	85.8	P/P	40 - 150
2330715	Afidopyropen	71.1	60.9	P/P	30 - 150
2330715	Carbamazepine	113	109	P/P	40 - 150
2330715	Clothianidin	127	120	P/P	40 - 150
2330715	Diuron	86.5	76.0	P/P	40 - 150
2330715	Fenuron	93.9	92.5	P/P	40 - 150
2330715	Fluridone	92.7	89.7	P/P	40 - 150
2330715	Hydrocodone	107	101	P/P	40 - 150
2330715	Ibuprofen	85.6	84.4	P/P	40 - 150
2330715	Imazapyr	106	107	P/P	40 - 150
2330715	Imidacloprid	159	157	F/F	40 - 150
2330715	Linuron	85.4	79.3	P/P	40 - 150
2330715	Mandestrobin	90.9	87.2	P/P	40 - 150
2330715	MCCP	111	101	P/P	40 - 150
2330715	Naproxen	76.1	72.8	P/P	40 - 150
2330715	Primidone	112	118	P/P	40 - 150
2330715	Pyraclostrobin	96.0	91.1	P/P	40 - 150
2330715	Silvex	73.5	58.2	P/P	40 - 150
2330715	Thiamethoxam	136	138	P/P	40 - 150
2330715	Tolfenpyrad	53.7	49.9	P/P	30 - 150
2330715	Triclopyr	81.3	69.5	P/P	40 - 150

Reference Method: EPA 8321B

Batch ID: P414602

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330564	Acesulfame K	155	150	F/F	40 - 150
2330564	AMPA	88.2	91.4	P/P	40 - 150
2330564	Endothall	69.3	69.0	P/P	40 - 150
2330564	Glufosinate	95.1	99.5	P/P	40 - 150
2330564	Glyphosate	94.9	83.6	P/P	40 - 150
2330564	Sucralose	114	114	P/P	40 - 150

Reference Method: SM 4500-F- C-2011

Batch ID: P414801

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330519	Fluoride	98.2	98.9	P/P	94 - 104

Reference Method: SM 5310 B-2011

Batch ID: P415265

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2330408	Organic Carbon	89.6	87.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0

Batch ID: P414605

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330699	Turbidity	2.89	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P414615

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330285	Calcium	1.46	Spike	P	0 - 20
2330285	Iron	0.722	Spike	P	0 - 20
2330285	Magnesium	1.33	Spike	P	0 - 20
2330285	Strontium	4.81	Spike	P	0 - 20
2330285	Tin	8.57	Spike	P	0 - 20
2330285	Titanium	3.29	Spike	P	0 - 20
2330285	Vanadium	3.36	Spike	P	0 - 20
2330285	Zinc	4.11	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P414615

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330285	Aluminum	1.83	Spike	P	0 - 20
2330285	Antimony	0.950	Spike	P	0 - 20
2330285	Arsenic	1.80	Spike	P	0 - 20
2330285	Beryllium	6.84	Spike	P	0 - 20
2330285	Cadmium	0.190	Spike	P	0 - 20
2330285	Chromium	0.773	Spike	P	0 - 20
2330285	Cobalt	0.217	Spike	P	0 - 20
2330285	Copper	1.10	Spike	P	0 - 20
2330285	Lead	1.38	Spike	P	0 - 20
2330285	Manganese	0.889	Spike	P	0 - 20
2330285	Molybdenum	0.774	Spike	P	0 - 20
2330285	Nickel	0.186	Spike	P	0 - 20
2330285	Selenium	1.16	Spike	P	0 - 20
2330285	Silver	1.20	Spike	P	0 - 20
2330285	Thallium	1.91	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P414973

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330408	Ammonia-N	0.742	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P414690

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330516	Kjeldahl Nitrogen	2.42	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P415034

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330517	NO2NO3-N	0.421	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P414750

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2331017	Total-P	1.63	Spike	P	0 - 20

Reference Method: EPA 8321B

Batch ID: P414579

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330715	2,4-D	20.2	Spike	P	0 - 30
2330715	2,4,5-T	15.7	Spike	P	0 - 30
2330715	Acetaminophen	1.05	Spike	P	0 - 30
2330715	Acetamiprid	13.0	Spike	P	0 - 30
2330715	Afidopyropen	15.5	Spike	P	0 - 30
2330715	Benzovindiflupyr	0.121	Spike	P	0 - 30
2330715	Carbamazepine	3.54	Spike	P	0 - 30
2330715	Clothianidin	4.69	Spike	P	0 - 30
2330715	Dinotefuran	0.943	Spike	P	0 - 30
2330715	Diuron	12.6	Spike	P	0 - 30
2330715	Fenuron	1.51	Spike	P	0 - 30
2330715	Fluridone	3.33	Spike	P	0 - 30
2330715	Hydrocodone	5.99	Spike	P	0 - 30
2330715	Ibuprofen	1.42	Spike	P	0 - 30
2330715	Imazapyr	0.641	Spike	P	0 - 30
2330715	Imidacloprid	0.881	Spike	P	0 - 30
2330715	Linuron	7.41	Spike	P	0 - 30
2330715	Mandestrobin	4.14	Spike	P	0 - 30
2330715	MCPP	9.52	Spike	P	0 - 30
2330715	Naproxen	4.36	Spike	P	0 - 30
2330715	Primidone	4.51	Spike	P	0 - 30
2330715	Pyraclostrobin	4.39	Spike	P	0 - 30
2330715	Silvex	23.2	Spike	P	0 - 30
2330715	Thiamethoxam	0.714	Spike	P	0 - 30
2330715	Tolfenpyrad	7.25	Spike	P	0 - 30
2330715	Triclopyr	15.6	Spike	P	0 - 30

Reference Method: EPA 8321B

Batch ID: P414602

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330564	Acesulfame K	3.00	Spike	P	0 - 30
2330564	AMPA	3.52	Spike	P	0 - 30
2330564	Endothall	0.443	Spike	P	0 - 30
2330564	Glufosinate	4.50	Spike	P	0 - 30
2330564	Glyphosate	12.6	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P414602

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330564	Sucralose	0.0355	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P414794

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330519	Total Alkalinity	2.60	Sample	P	0 - 3.8

Reference Method: SM 2540 D-2011
Batch ID: P414779

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330814	TSS	2.35	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P414780

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2331351	TSS	0.0	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P414801

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330519	Fluoride	0.520	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P415265

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2330408	Organic Carbon	1.89	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2330839

Field Sample ID: G5CE0130

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	88.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	107	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	91.2	P	30 - 160
EPA 8321B	Endothall-d6	62.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	84.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.4	P	30 - 160
EPA 8321B	Primidone-d5	104	P	30 - 160
EPA 8321B	Sucralose-d6	95.3	P	30 - 160

Lab Sample ID: 2330840

Field Sample ID: G5CE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	92.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	104	P	30 - 160
EPA 8321B	Diuron-d6	85.9	P	30 - 160
EPA 8321B	Endothall-d6	67.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	83.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	79.0	P	30 - 160
EPA 8321B	Primidone-d5	98.0	P	30 - 160
EPA 8321B	Sucralose-d6	92.9	P	30 - 160

Lab Sample ID: 2330841

Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	91.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	105	P	30 - 160
EPA 8321B	Carbamazepine-d10	108	P	30 - 160
EPA 8321B	Diuron-d6	92.9	P	30 - 160
EPA 8321B	Endothall-d6	66.2	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	85.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	77.2	P	30 - 160
EPA 8321B	Primidone-d5	103	P	30 - 160
EPA 8321B	Sucralose-d6	95.7	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A112555

Included Lab Sample IDs: 2330814, 2330816

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

Reference Method: EPA 8321B

Run ID: A112591

Included Lab Sample IDs: 2330839, 2330840, 2330841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	152	152	P/P	60 - 160
Sucralose	118	116	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A112595

Included Lab Sample IDs: 2330839, 2330840, 2330841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.5	102	P/P	60 - 160
Endothall	69.5	71.4	P/P	60 - 160
Glufosinate	99.5	102	P/P	60 - 160
Glyphosate	93.3	95.3	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112611

Included Lab Sample IDs: 2330846, 2330847, 2330848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	97.1	99.1	P/P	90 - 110
Arsenic	101	101	P/P	90 - 110
Beryllium	96.7	98.6	P/P	90 - 110
Cadmium	97.8	98.7	P/P	90 - 110
Chromium	95.4	95.4	P/P	90 - 110
Cobalt	101	101	P/P	90 - 110
Copper	102	102	P/P	90 - 110
Lead	97.6	98.2	P/P	90 - 110
Lead	98.4	97.6	P/P	90 - 110
Manganese	98.0	98.7	P/P	90 - 110
Molybdenum	99.3	98.9	P/P	90 - 110
Nickel	102	103	P/P	90 - 110
Selenium	99.9	100	P/P	90 - 110
Silver	99.9	100	P/P	90 - 110
Thallium	97.1	96.8	P/P	90 - 110
Thallium	98.2	97.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A112618

Included Lab Sample IDs: 2330839, 2330840, 2330841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.6	96.6	P/P	50 - 150
2,4,5-T	95.2	95.0	P/P	50 - 150
Acetaminophen	101	101	P/P	60 - 160
Acetamiprid	102	101	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A112618

Included Lab Sample IDs: 2330839, 2330840, 2330841

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Afidopyropen	94.8	92.9	P/P	50 - 150
Bentazon	101	102	P/P	50 - 160
Bentazon	103	104	P/P	50 - 160
Benzovindiflupyr	107	106	P/P	50 - 150
Carbamazepine	102	101	P/P	60 - 150
Clothianidin	103	103	P/P	60 - 150
Dinotefuran	98.4	105	P/P	50 - 150
Diuron	109	93.9	P/P	60 - 160
Fenuron	102	100	P/P	60 - 150
Fluridone	108	106	P/P	60 - 160
Hydrocodone	98.2	97.9	P/P	60 - 150
Ibuprofen	119	94.0	P/P	50 - 160
Imazapyr	86.7	96.4	P/P	50 - 150
Imidacloprid	97.3	96.4	P/P	60 - 150
Linuron	114	98.5	P/P	60 - 150
Mandestrobin	105	103	P/P	50 - 150
MCPP	93.6	93.6	P/P	50 - 150
Naproxen	97.8	106	P/P	50 - 160
Primidone	103	106	P/P	60 - 150
Pyraclostrobin	105	106	P/P	60 - 150
Silvex	93.9	98.0	P/P	50 - 150
Thiamethoxam	98.5	100	P/P	50 - 150
Tolfenpyrad	96.9	101	P/P	60 - 150
Triclopyr	99.8	89.8	P/P	50 - 150

Reference Method: SM 2320 B-2011

Run ID: A112633

Included Lab Sample IDs: 2330814, 2330816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.7	96.8	P/P	90 - 110

Reference Method: SM 4500-F- C-2011

Run ID: A112633

Included Lab Sample IDs: 2330814, 2330816

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A112634

Included Lab Sample IDs: 2330846, 2330847, 2330848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.4	99.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112647

Included Lab Sample IDs: 2330815

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112647

Included Lab Sample IDs: 2330815

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A112648

Included Lab Sample IDs: 2330817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A112672

Included Lab Sample IDs: 2330815, 2330817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.5	106	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112677

Included Lab Sample IDs: 2330846, 2330847, 2330848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Strontium	95.2	95.3	P/P	95 - 105
Strontium	96.3	95.2	P/P	95 - 105
Tin	101	100	P/P	95 - 105
Tin	99.7	101	P/P	95 - 105
Titanium	95.7	98.5	P/P	95 - 105
Titanium	98.5	96.1	P/P	95 - 105
Vanadium	96.8	97.7	P/P	95 - 105
Vanadium	97.7	97.2	P/P	95 - 105
Zinc	100	98.6	P/P	95 - 105
Zinc	99.2	100	P/P	95 - 105

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112695

Included Lab Sample IDs: 2330846, 2330847, 2330848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	104	104	P/P	90 - 110
Magnesium	103	103	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A112705

Included Lab Sample IDs: 2330815, 2330817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	99.7	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A112726

Included Lab Sample IDs: 2330846, 2330847, 2330848

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	96.4	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A112733

Included Lab Sample IDs: 2330815, 2330817

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

Reference Method: SM 5310 B-2011

Run ID: A112851

Included Lab Sample IDs: 2330815, 2330817

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.2	95.2	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity	97.4				2.89	
EPA 200.7 Rev. 4.4	Calcium	108	111				1.46
	Iron	105	107	106			0.722
	Magnesium	107					1.33
	Strontium	103	93.3	101			4.81
	Tin	104	76.2	83.1			8.57
	Titanium	101	96.4	100			3.29
	Vanadium	94.5	90.5	93.6			3.36
	Zinc	104	94.9	98.8			4.11
EPA 200.8 Rev. 5.4	Aluminum	99.9	112	114			1.83
	Antimony	98.1	97.7	98.6			0.950
	Arsenic	97.5	109	111			1.80
	Beryllium	90.6	109	101			6.84
	Cadmium	96.7	96.0	95.8			0.190
	Chromium	95.3	96.1	96.9			0.773
	Cobalt	97.2	109	109			0.217
	Copper	94.9	105	103			1.10
	Lead	98.9	102	104			1.38
	Manganese	96.8	94.9	96.5			0.889
	Molybdenum	97.7	110	110			0.774
	Nickel	96.5	108	109			0.186
	Selenium	96.2	102	103			1.16
	Silver	97.8	90.3	91.4			1.20
	Thallium	101	104	106			1.91
EPA 350.1 Rev. 2.0	Ammonia-N	96.2	97.2	98.0			0.742
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	103	106			2.42
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	101	100			0.421
EPA 365.1 Rev. 2.0	Total-P	109	106	105			1.63
EPA 8321B	2,4-D	68.6	101	81.9			20.2
	2,4,5-T	48.5	77.2	65.9			15.7
	Acesulfame K	147	155	150			3.00
	Acetaminophen	69.3	113	114			1.05
	Acetamiprid	79.5	101	85.8			13.0
	Afidopyrophen	56.6	71.1	60.9			15.5
	AMPA	91.4	88.2	91.4			3.52
	Bentazon	93.3					
	Benzovindiflupyr	87.8					0.121
	Carbamazepine	94.8	113	109			3.54
	Clothianidin	100	127	120			4.69
	Dinotefuran	101					0.943
	Diuron	95.4	86.5	76.0			12.6
	Endothall	70.4	69.3	69.0			0.443
	Fenuron	103	93.9	92.5			1.51
	Fluridone	95.1	92.7	89.7			3.33
	Glufosinate	98.8	95.1	99.5			4.50
	Glyphosate	94.7	94.9	83.6			12.6
	Hydrocodone	87.0	107	101			5.99
	Ibuprofen	85.3	85.6	84.4			1.42
	Imazapyr	90.0	106	107			0.641
	Imidacloprid	91.1	159	157			0.881
	Linuron	84.7	85.4	79.3			7.41
	Mandestrobin	91.1	90.9	87.2			4.14
	MCP	77.7	111	101			9.52
	Naproxen	70.8	76.1	72.8			4.36

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Primidone	98.9	112	118		4.51
	Pyraclostrobin	83.9	96.0	91.1		4.39
	Silvex	48.9	73.5	58.2		23.2
	Sucralose	110	114	114		0.0355
	Thiamethoxam	93.9	136	138		0.714
	Tolfenpyrad	44.7	53.7	49.9		7.25
	Triclopyr	56.1	81.3	69.5		15.6
SM 2320 B-2011	Total Alkalinity	102			2.60	
SM 2540 D-2011	TSS				2.35	
	TSS				0.0	
SM 4500-F- C-2011	Fluoride	97.9	98.2	98.9		0.520
SM 5310 B-2011	Organic Carbon	94.4	89.6	87.4		1.89

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2330814, 2330816
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2330846, 2330847, 2330848
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2330846, 2330847, 2330848
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2330815, 2330817
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2330815, 2330817
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2330815, 2330817
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2330815, 2330817
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2330839, 2330840, 2330841
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2330814, 2330816
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2330814, 2330816
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2330814, 2330816
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2330815, 2330817

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	06/01/2022			06/01/2022 13:53	Khloe J Berg	2330814
	06/01/2022			06/01/2022 13:54	Khloe J Berg	2330816
EPA 200.7 Rev. 4.4	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 08:28	McKinley C Carter	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 08:36	McKinley C Carter	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 08:44	McKinley C Carter	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 08:52	McKinley C Carter	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 09:28	McKinley C Carter	2330848
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 09:36	McKinley C Carter	2330848
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 20:07	McKinley C Carter	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 20:15	McKinley C Carter	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/08/2022 20:23	McKinley C Carter	2330848
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/10/2022 00:35	McKinley C Carter	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/10/2022 00:43	McKinley C Carter	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/10/2022 00:52	McKinley C Carter	2330848
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 16:42	Alexander Thompson	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 16:52	Alexander Thompson	2330847
EPA 200.8 Rev. 5.4	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 19:06	Alexander Thompson	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 19:16	Alexander Thompson	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/03/2022 19:26	Alexander Thompson	2330848
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/06/2022 13:31	Alexander Thompson	2330846
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/06/2022 13:37	Alexander Thompson	2330847
	06/01/2022	06/02/2022 09:40	Megan Whitefoot	06/06/2022 13:43	Alexander Thompson	2330848
	06/01/2022			06/09/2022 12:09	Judith K. Clark	2330815
	06/01/2022			06/09/2022 12:10	Judith K. Clark	2330817
EPA 351.2 Rev. 2.0	06/01/2022	06/07/2022 09:42	Samantha L Bates	06/08/2022 11:29	Alexandra J Mattheus	2330815
	06/01/2022	06/07/2022 09:42	Samantha L Bates	06/08/2022 11:30	Alexandra J Mattheus	2330817
EPA 353.2 Rev. 2.0	06/01/2022			06/09/2022 15:59	Nathaniel J Jones	2330815
	06/01/2022			06/09/2022 16:07	Nathaniel J Jones	2330817
EPA 365.1 Rev. 2.0	06/01/2022	06/06/2022 15:34	Adam P Silver	06/07/2022 10:58	James L Waggeberby	2330815
	06/01/2022	06/06/2022 15:34	Adam P Silver	06/07/2022 14:01	James L Waggeberby	2330817
EPA 8321B	06/01/2022	06/02/2022 10:30	June Rhew	06/04/2022 08:38	Juyoung Kim	2330839
	06/01/2022	06/02/2022 10:30	June Rhew	06/04/2022 09:13	Juyoung Kim	2330840
	06/01/2022	06/02/2022 10:30	June Rhew	06/04/2022 09:48	Juyoung Kim	2330841
	06/01/2022	06/02/2022 10:30	June Rhew	06/04/2022 16:11	Juyoung Kim	2330839
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/02/2022 19:41	Umesh Chiluwal	2330839
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/02/2022 19:56	Umesh Chiluwal	2330840
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/02/2022 20:11	Umesh Chiluwal	2330841
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 04:16	Umesh Chiluwal	2330839
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 04:29	Umesh Chiluwal	2330840
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 04:42	Umesh Chiluwal	2330841

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 07:57	Umesh Chiluwal	2330839
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 08:09	Umesh Chiluwal	2330840
	06/01/2022	06/02/2022 14:00	Umesh Chiluwal	06/03/2022 08:22	Umesh Chiluwal	2330841
SM 2320 B-2011	06/01/2022			06/03/2022 12:07	Dale L. Simmons	2330814
	06/01/2022			06/03/2022 12:20	Dale L. Simmons	2330816
SM 2540 D-2011	06/01/2022			06/03/2022 16:26	Blanca Fach	2330814, 2330816
SM 4500-F- C-2011	06/01/2022			06/03/2022 10:04	Dale L. Simmons	2330814
	06/01/2022			06/03/2022 10:09	Dale L. Simmons	2330816
SM 5310 B-2011	06/01/2022			06/15/2022 02:41	Khloe J Berg	2330815
	06/01/2022			06/15/2022 03:00	Khloe J Berg	2330817