

Chemical Analysis Report

CEN-DIST-2020-10-08-01

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

Event Description: **Turnbull/Strickland/Rose**
Request ID: **RQ-2020-09-28-43**
Customer: **CEN-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 28-OCT-2020 09:47

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the "T" and a long horizontal stroke at the end.

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: Rose Bay @ 125m Ne of Boat Ramp

Collection Date/Time: 10/07/2020 11:16

Field ID: G5CE0073

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200741	EPA 8321B	2,4-D	0.044		ug/L	P388526	
		Acesulfame K**	0.10	UJ	ug/L	P388355	SUR
		AMPA**	1.0	U	ug/L	P388355	
		Sucralose**	0.75		ug/L	P388355	
		Acetaminophen**	0.0080	U	ug/L	P388526	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Endothall**	0.25	UJ	ug/L	P388355	SUR
		Glufosinate**	1.0	U	ug/L	P388355	
		Glyphosate**	1.0	U	ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	0.070		ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	0.0010	I	ug/L	P388526	
		Clothianidin**	0.0047	I	ug/L	P388526	
		Dinotefuran**	0.0020	U	ug/L	P388526	
		Diuron	0.0065	I	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	0.0092		ug/L	P388526	
		Imazapyr**	0.090		ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.019		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCPP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	
		Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Strickland Bay @ 100m East (downstream) of Rr Crossing

Collection Date/Time: 10/07/2020 12:22

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200714	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P388406	
	EPA 300.0 Rev. 2.1	Bromide	6.9		mg Br/L	P388512	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P388574	
	SM 2540 D-2011	TSS	4	I	mg/L	P388898	
	SM 4500 F-C-2011	Fluoride	0.20		mg F/L	P388577	
2200716	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P388499	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P388583	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.069		mg N/L	P388690	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P388527	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P388563	
2200718	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.083		mg P/L	P388414	
2200739	EPA 8321B	Acesulfame K**	1.0	U	ug/L	P388355	
		2,4-D	0.15		ug/L	P388526	
		AMPA**	0.10	U	ug/L	P388355	
		Sucralose**	0.91		ug/L	P388355	
		Acetaminophen**	0.027	I	ug/L	P388526	
		Endothall**	2.5	U	ug/L	P388355	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Glufosinate**	0.10	U	ug/L	P388355	
		Glyphosate**	0.16	I	ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	0.12		ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	8.5E-04	I	ug/L	P388526	
		Clothianidin**	0.0078	I	ug/L	P388526	
		Dinotefuran**	0.0020	I	ug/L	P388526	
		Diuron	0.0020	U	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	0.020		ug/L	P388526	
		Imazapyr**	0.10		ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.072		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	
		Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Field ID: G5CE0081

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200744	EPA 200.7 Rev. 4.4	Iron	1.01E+03		ug/L	P388525	
		Manganese	12.5		ug/L	P388525	
		Zinc	5.0	U	ug/L	P388525	
	EPA 200.8 Rev. 5.4	Aluminum	377		ug/L	P388525	
		Antimony	0.094	I	ug/L	P388525	
		Arsenic	1.77		ug/L	P388525	
		Cadmium	0.020	U	ug/L	P388525	
		Chromium	0.59	I	ug/L	P388525	
		Copper	2.35		ug/L	P388525	
		Lead	0.48		ug/L	P388525	
		Nickel	0.56	I	ug/L	P388525	
		Selenium	0.28	I	ug/L	P388525	
		Silver	0.010	U	ug/L	P388525	
		Thallium	0.10	U	ug/L	P388525	

Ref. Method and Comment:
 SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 EPA 8321B: MDL for some parameters elevated due to matrix interference.

Sample Location: Strickland Bay @ 525m East (downstream) of Rr Crossing

Collection Date/Time: 10/07/2020 12:13

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200715	EPA 180.1 Rev. 2.0	Turbidity	3.9		NTU	P388406	
	EPA 300.0 Rev. 2.1	Bromide	6.4		mg Br/L	P388512	
	SM 2320 B-2011	Total Alkalinity	68		mg CaCO3/L	P388574	
	SM 2540 D-2011	TSS	4	I	mg/L	P388898	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P388577	
2200717	EPA 350.1 Rev. 2.0	Ammonia-N	0.025		mg N/L	P388499	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P388583	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.070		mg N/L	P388690	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P388527	
	SM 5310 B-2011	Organic Carbon	30		mg C/L	P388563	
2200719	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.080		mg P/L	P388414	
2200740	EPA 8321B	Acesulfame K**	1.0	U	ug/L	P388355	
		2,4-D	0.16		ug/L	P388526	
		AMPA**	0.10	U	ug/L	P388355	
		Sucralose**	0.059	J	ug/L	P388355	SUR
		Acetaminophen**	0.0080	U	ug/L	P388526	
		Endothall**	2.5	U	ug/L	P388355	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Glufosinate**	0.10	U	ug/L	P388355	
		Glyphosate**	0.19	I	ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	0.11		ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	8.0E-04	U	ug/L	P388526	
		Clothianidin**	0.0076	I	ug/L	P388526	
		Dinotefuran**	0.0025	I	ug/L	P388526	
		Diuron	0.0020	U	ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	0.018		ug/L	P388526	
		Imazapyr**	0.10		ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.065		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	
		Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Field ID: G5CE0082

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200745	EPA 200.7 Rev. 4.4	Iron	1.03E+03		ug/L	P388525	
		Manganese	12.4		ug/L	P388525	
		Zinc	5.0	U	ug/L	P388525	
	EPA 200.8 Rev. 5.4	Aluminum	384		ug/L	P388525	
		Antimony	0.095	I	ug/L	P388525	
		Arsenic	1.78		ug/L	P388525	
		Cadmium	0.020	U	ug/L	P388525	
		Chromium	0.60	I	ug/L	P388525	
		Copper	2.45		ug/L	P388525	
		Lead	0.53		ug/L	P388525	
		Nickel	0.61	I	ug/L	P388525	
		Selenium	0.23	I	ug/L	P388525	
		Silver	0.010	U	ug/L	P388525	
		Thallium	0.10	U	ug/L	P388525	

Ref. Method and Comment:

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

EPA 8321B: MDL for some parameters elevated due to matrix interference.

EPA 8321B: Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

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

Collection Date/Time: 10/07/2020 11:11

Field ID: G5CE0098

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200742	EPA 8321B	2,4-D	0.052		ug/L	P388526	
		Acesulfame K**	0.10	UJ	ug/L	P388355	SUR
		AMPA**	1.0	U	ug/L	P388355	
		Sucralose**	0.81		ug/L	P388355	
		Acetaminophen**	0.093		ug/L	P388526	
		Acetamiprid**	0.0020	U	ug/L	P388526	
		Endothall**	0.25	UJ	ug/L	P388355	SUR
		Glufosinate**	1.0	U	ug/L	P388355	
		Glyphosate**	1.0	U	ug/L	P388355	
		Afidopyropen**	0.0020	U	ug/L	P388526	
		Bentazon	0.096		ug/L	P388526	
		Benzovindiflupyr**	0.0020	U	ug/L	P388526	
		Carbamazepine**	9.5E-04	I	ug/L	P388526	
		Clothianidin**	0.0047	I	ug/L	P388526	
		Dinotefuran**	0.0020	U	ug/L	P388526	
		Diuron	0.0086		ug/L	P388526	
		Fenuron	0.016	U	ug/L	P388526	
		Fluridone**	0.010		ug/L	P388526	
		Imazapyr**	0.082		ug/L	P388526	
		Hydrocodone**	0.0020	U	ug/L	P388526	
		Ibuprofen**	0.020	U	ug/L	P388526	
		Imidacloprid	0.025		ug/L	P388526	
		Linuron	0.0040	U	ug/L	P388526	
		Mandestrobin**	0.0020	U	ug/L	P388526	
		MCPP	0.0020	U	ug/L	P388526	
		Naproxen**	0.0080	U	ug/L	P388526	
		Primidone**	0.0040	U	ug/L	P388526	
		Pyraclostrobin**	0.0020	U	ug/L	P388526	
		Thiamethoxam**	0.0020	U	ug/L	P388526	
		Tolfenpyrad**	0.0020	U	ug/L	P388526	
		Triclopyr**	0.0040	U	ug/L	P388526	

Ref. Method and Comment:

EPA 8321B: MDL for some parameters elevated due to matrix interference. Results confirmed in sample duplicate. Refer to the Lab Analysis Report for an explanation of QC Codes.

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

Collection Date/Time: 10/07/2020 11:55

Field ID: G5CE0100

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200711	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P388406	
	EPA 300.0 Rev. 2.1	Bromide	6.3		mg Br/L	P388512	
	SM 2320 B-2011	Total Alkalinity	69		mg CaCO3/L	P388574	
	SM 2540 D-2011	TSS	3	IA	mg/L	P388899	
	SM 4500 F-C-2011	Fluoride	0.19		mg F/L	P388577	
2200712	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P388499	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.98		mg N/L	P389041	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P388690	
	EPA 365.1 Rev. 2.0	Total-P	0.12		mg P/L	P388527	
	SM 5310 B-2011	Organic Carbon	29		mg C/L	P388563	
2200713	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.084		mg P/L	P388414	
2200743	EPA 200.7 Rev. 4.4	Iron	1.01E+03		ug/L	P388525	
		Manganese	12.1		ug/L	P388525	
		Zinc	5.0	U	ug/L	P388525	
	EPA 200.8 Rev. 5.4	Aluminum	349		ug/L	P388525	
		Antimony	0.092	I	ug/L	P388525	
		Arsenic	1.70		ug/L	P388525	
		Cadmium	0.020	U	ug/L	P388525	
		Chromium	0.60	I	ug/L	P388525	
		Copper	2.32		ug/L	P388525	
		Lead	0.52		ug/L	P388525	
		Nickel	0.53	I	ug/L	P388525	
		Selenium	0.25	I	ug/L	P388525	
		Silver	0.010	U	ug/L	P388525	
		Thallium	0.10	U	ug/L	P388525	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388406

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388525

Component	Result	Code	Units
Iron	30	U	ug/L
Manganese	1.0	U	ug/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388525

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388512

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388499

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388583

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389041

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388690

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388527

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388414

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

Reference Method: EPA 8321B
Batch ID: P388355

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: P388526

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyropen	0.0020	U	ug/L
Bentazon	8.0E-04	U	ug/L
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P388526

Component	Result	Code	Units
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2320 B-2011
Batch ID: P388574

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

Reference Method: SM 2540 D-2011
Batch ID: P388898

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388899

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388563

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	101		P	85 - 115
Manganese	98.8		P	85 - 115
Zinc	94.0		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388525

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	100		P	85 - 115
Antimony	99.6		P	85 - 115
Arsenic	105		P	85 - 115
Cadmium	99.6		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	99.5		P	85 - 115
Nickel	101		P	85 - 115
Selenium	92.1		P	85 - 115
Silver	99.4		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388499

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388583

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389041

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388690

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388527

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388414

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

Reference Method: EPA 8321B
Batch ID: P388355

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	125		P	40 - 150
AMPA	78.8		P	40 - 150
Endothall	92.8		P	40 - 150
Glufosinate	85.4		P	40 - 150
Glyphosate	93.1		P	40 - 140
Sucralose	105		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P388526

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	78.5		P	30 - 160
Acetaminophen	78.5		P	30 - 160
Acetamiprid	66.7		P	30 - 160
Afidopyropen	42.2		P	30 - 160
Bentazon	43.0		P	30 - 160
Benzovindiflupyr	59.2		P	30 - 160
Carbamazepine	52.3		P	30 - 160
Clothianidin	71.0		P	30 - 160
Dinotefuran	77.1		P	30 - 160
Diuron	38.8		P	30 - 160
Fenuron	79.9		P	30 - 160
Fluridone	66.4		P	30 - 160
Hydrocodone	67.8		P	30 - 160
Ibuprofen	67.4		P	30 - 160
Imazapyr	74.3		P	30 - 160
Imidacloprid	83.3		P	30 - 160
Linuron	61.6		P	30 - 160
Mandestrobin	68.4		P	30 - 160
MCPP	75.5		P	30 - 160
Naproxen	42.5		P	30 - 160
Primidone	76.3		P	30 - 160
Pyraclostrobin	58.3		P	30 - 160
Thiamethoxam	72.8		P	30 - 160
Tolfenpyrad	44.7		P	30 - 160
Triclopyr	64.0		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P388574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388563

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200665	Iron	107		P	80 - 120
2200665	Manganese	101		P	80 - 120
2200665	Zinc	96.6		P	80 - 120
2200816	Iron	106	106	P/P	80 - 120
2200816	Manganese	99.8	102	P/P	80 - 120
2200816	Zinc	96.9	99.5	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388525

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200665	Aluminum	100		P	80 - 120
2200665	Antimony	104		P	80 - 120
2200665	Arsenic	111		P	80 - 120
2200665	Cadmium	104		P	80 - 120
2200665	Chromium	101		P	80 - 120
2200665	Copper	99.0		P	80 - 120
2200665	Lead	99.8		P	80 - 120
2200665	Nickel	100		P	80 - 120
2200665	Selenium	99.3		P	80 - 120
2200665	Silver	100		P	80 - 120
2200665	Thallium	102		P	80 - 120
2200816	Aluminum	103	101	P/P	80 - 120
2200816	Antimony	103	101	P/P	80 - 120
2200816	Arsenic	108	106	P/P	80 - 120
2200816	Cadmium	105	103	P/P	80 - 120
2200816	Chromium	103	102	P/P	80 - 120
2200816	Copper	100	98.7	P/P	80 - 120
2200816	Lead	101	100	P/P	80 - 120
2200816	Nickel	102	100	P/P	80 - 120
2200816	Selenium	96.4	95.0	P/P	80 - 120
2200816	Silver	100	99.1	P/P	80 - 120
2200816	Thallium	105	105	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200711	Bromide	98.4	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388499

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200166	Ammonia-N	103	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200716	Kjeldahl Nitrogen	106	104	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P389041

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	107	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P388690

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200700	NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P388527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200282	Total-P	101	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200713	O-Phosphate-P	97.4	97.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P388355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199834	Acesulfame K	77.6	73.6	P/P	40 - 150
2199834	AMPA	121	120	P/P	40 - 150
2199834	Endothall	89.0	92.2	P/P	40 - 150
2199834	Glufosinate	80.7	87.4	P/P	40 - 150
2199834	Glyphosate	83.1	82.8	P/P	40 - 140
2199834	Sucralose	90.2	87.2	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P388526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200724	2,4-D	57.0	61.8	P/P	30 - 160
2200724	Acetaminophen	99.9	99.2	P/P	30 - 160
2200724	Acetamiprid	67.4	71.8	P/P	30 - 160
2200724	Afidopyropen	34.2	35.2	P/P	30 - 160
2200724	Bentazon	32.2	40.2	P/P	30 - 160
2200724	Benzovindiflupyr	52.9	55.8	P/P	30 - 160
2200724	Carbamazepine	48.3	53.1	P/P	30 - 160
2200724	Clothianidin	74.4	74.2	P/P	30 - 160
2200724	Dinotefuran	80.8	82.1	P/P	30 - 160
2200724	Diuron	34.4	37.4	P/P	30 - 160
2200724	Fenuron	64.6	68.7	P/P	30 - 160
2200724	Fluridone	54.1	62.4	P/P	30 - 160
2200724	Hydrocodone	60.3	63.8	P/P	30 - 160
2200724	Ibuprofen	53.5	44.7	P/P	30 - 160
2200724	Imazapyr	78.2	82.8	P/P	30 - 160
2200724	Imidacloprid	97.8	105	P/P	30 - 160
2200724	Linuron	48.9	54.8	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P388526

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200724	Mandestrobin	57.4	61.1	P/P	30 - 160
2200724	MCCP	55.7	60.0	P/P	30 - 160
2200724	Naproxen	57.3	70.7	P/P	30 - 160
2200724	Primidone	64.7	62.6	P/P	30 - 160
2200724	Pyraclostrobin	49.3	54.2	P/P	30 - 160
2200724	Thiamethoxam	82.7	86.0	P/P	30 - 160
2200724	Tolfenpyrad	38.6	37.6	P/P	30 - 160
2200724	Triclopyr	51.8	51.6	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200694	Fluoride	98.1	98.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388563

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200696	Organic Carbon	103	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200682	Turbidity	7.92	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200816	Iron	0.448	Spike	P	0 - 20
2200816	Manganese	2.17	Spike	P	0 - 20
2200816	Zinc	2.63	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388525

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200816	Aluminum	1.91	Spike	P	0 - 20
2200816	Antimony	1.46	Spike	P	0 - 20
2200816	Arsenic	2.36	Spike	P	0 - 20
2200816	Cadmium	1.89	Spike	P	0 - 20
2200816	Chromium	0.632	Spike	P	0 - 20
2200816	Copper	1.75	Spike	P	0 - 20
2200816	Lead	1.03	Spike	P	0 - 20
2200816	Nickel	1.86	Spike	P	0 - 20
2200816	Selenium	1.48	Spike	P	0 - 20
2200816	Silver	1.01	Spike	P	0 - 20
2200816	Thallium	0.604	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200711	Bromide	1.38	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388499

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200166	Ammonia-N	0.540	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200716	Kjeldahl Nitrogen	1.26	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P389041

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202017	Kjeldahl Nitrogen	1.39	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P388690

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200700	NO2NO3-N	0.466	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P388527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200282	Total-P	1.98	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200713	O-Phosphate-P	0.165	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P388355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199834	Acesulfame K	5.35	Spike	P	0 - 30
2199834	AMPA	1.24	Spike	P	0 - 30
2199834	Endothall	3.49	Spike	P	0 - 30
2199834	Glufosinate	7.97	Spike	P	0 - 30
2199834	Glyphosate	0.362	Spike	P	0 - 30
2199834	Sucralose	3.06	Spike	P	0 - 30

Reference Method: EPA 8321B
 Batch ID: P388526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200724	2,4-D	7.29	Spike	P	0 - 30
2200724	Acetaminophen	0.616	Spike	P	0 - 30
2200724	Acetamiprid	6.25	Spike	P	0 - 30
2200724	Afidopyropen	2.81	Spike	P	0 - 30
2200724	Bentazon	10.4	Spike	P	0 - 30
2200724	Benzovindiflupyr	5.25	Spike	P	0 - 30
2200724	Carbamazepine	9.44	Spike	P	0 - 30
2200724	Clothianidin	0.220	Spike	P	0 - 30
2200724	Dinotefuran	1.54	Spike	P	0 - 30
2200724	Diuron	8.21	Spike	P	0 - 30
2200724	Fenuron	6.21	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
 Batch ID: P388526

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200724	Fluridone	11.6	Spike	P	0 - 30
2200724	Hydrocodone	5.69	Spike	P	0 - 30
2200724	Ibuprofen	17.9	Spike	P	0 - 30
2200724	Imazapyr	4.58	Spike	P	0 - 30
2200724	Imidacloprid	7.21	Spike	P	0 - 30
2200724	Linuron	11.3	Spike	P	0 - 30
2200724	Mandestrobin	6.21	Spike	P	0 - 30
2200724	MCPD	7.32	Spike	P	0 - 30
2200724	Naproxen	21.0	Spike	P	0 - 30
2200724	Primidone	3.35	Spike	P	0 - 30
2200724	Pyraclostrobin	9.50	Spike	P	0 - 30
2200724	Thiamethoxam	3.84	Spike	P	0 - 30
2200724	Tolfenpyrad	2.50	Spike	P	0 - 30
2200724	Triclopyr	0.475	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
 Batch ID: P388574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Total Alkalinity	1.20	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P388577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Fluoride	0.467	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P388563

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200696	Organic Carbon	0.157	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2200739
Field Sample ID: G5CE0081

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	63.5	P	30 - 160
EPA 8321B	Acetaminophen-d4	73.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	57.2	P	30 - 160
EPA 8321B	Diuron-d6	49.0	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	30.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	30.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	66.6	P	30 - 160
EPA 8321B	Primidone-d5	51.5	P	30 - 160
EPA 8321B	Sucralose-d6	97.4	P	30 - 160
EPA 8321B	Sucralose-d6	97.4	P	30 - 160

Lab Sample ID: 2200740
Field Sample ID: G5CE0082

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.6	P	30 - 160
EPA 8321B	Carbamazepine-d10	47.1	P	30 - 160
EPA 8321B	Diuron-d6	37.4	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Endothall-d6	144	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	33.9	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	33.9	P	30 - 160
EPA 8321B	Ibuprofen-d3	60.3	P	30 - 160
EPA 8321B	Primidone-d5	49.5	P	30 - 160
EPA 8321B	Sucralose-d6	11.4	F	30 - 160
EPA 8321B	Sucralose-d6	11.4	F	30 - 160

Lab Sample ID: 2200741
Field Sample ID: G5CE0073

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	62.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	77.3	P	30 - 160
EPA 8321B	Carbamazepine-d10	42.8	P	30 - 160
EPA 8321B	Diuron-d6	37.1	P	30 - 160
EPA 8321B	Endothall-d6	696	F	30 - 160
EPA 8321B	Endothall-d6	696	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	61.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.8	P	30 - 160
EPA 8321B	Primidone-d5	51.9	P	30 - 160
EPA 8321B	Sucralose-d6	91.5	P	30 - 160
EPA 8321B	Sucralose-d6	91.5	P	30 - 160

Lab Sample ID: 2200742
Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	60.5	P	30 - 160

Quality Assurance Report Surrogates

Lab Sample ID: 2200742

Field Sample ID: G5CE0098

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	Acetaminophen-d4	73.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.1	P	30 - 160
EPA 8321B	Diuron-d6	38.8	P	30 - 160
EPA 8321B	Endothall-d6	763	F	30 - 160
EPA 8321B	Endothall-d6	763	F	30 - 160
EPA 8321B	Glyphosate 13C 15N	55.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	55.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	63.8	P	30 - 160
EPA 8321B	Primidone-d5	48.1	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160
EPA 8321B	Sucralose-d6	100	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101391

Included Lab Sample IDs: 2200711, 2200714, 2200715

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101431

Included Lab Sample IDs: 2200711, 2200714, 2200715

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	99.5	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101435

Included Lab Sample IDs: 2200713, 2200718, 2200719

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.3	P/P	90 - 110
O-Phosphate-P	98.2	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101451

Included Lab Sample IDs: 2200739, 2200740, 2200741, 2200742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	61.4	76.6	P/P	60 - 160
Endothall	113	119	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101460

Included Lab Sample IDs: 2200712, 2200716, 2200717

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

Reference Method: EPA 8321B

Run ID: A101475

Included Lab Sample IDs: 2200739, 2200740, 2200741, 2200742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	69.4	61.2	P/P	60 - 160
AMPA	92.3	69.4	P/P	60 - 160
Glufosinate	76.8	89.5	P/P	60 - 160
Glufosinate	89.0	76.8	P/P	60 - 160
Glyphosate	99.4	104	P/P	60 - 160
Glyphosate	99.7	99.4	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A101479

Included Lab Sample IDs: 2200739, 2200740, 2200741, 2200742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	106	109	P/P	60 - 160
Sucralose	109	110	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A101484

Included Lab Sample IDs: 2200712, 2200716, 2200717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	103	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101486

Included Lab Sample IDs: 2200711, 2200714, 2200715

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101486

Included Lab Sample IDs: 2200711, 2200714, 2200715

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101498

Included Lab Sample IDs: 2200743, 2200744, 2200745

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101512

Included Lab Sample IDs: 2200716, 2200717

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101519

Included Lab Sample IDs: 2200712, 2200716, 2200717

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101523

Included Lab Sample IDs: 2200743, 2200744, 2200745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	99.2	99.7	P/P	90 - 110
Antimony	97.4	97.8	P/P	90 - 110
Arsenic	103	105	P/P	90 - 110
Cadmium	99.5	99.3	P/P	90 - 110
Chromium	96.9	95.0	P/P	90 - 110
Copper	96.9	97.0	P/P	90 - 110
Lead	101	101	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101523

Included Lab Sample IDs: 2200743, 2200744, 2200745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Nickel	96.9	96.6	P/P	90 - 110
Silver	103	103	P/P	90 - 110
Thallium	98.0	98.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101527

Included Lab Sample IDs: 2200712, 2200716, 2200717

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101573

Included Lab Sample IDs: 2200743, 2200744, 2200745

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	91.6	91.6	P/P	90 - 110
Selenium	91.6	92.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101576

Included Lab Sample IDs: 2200744

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	96.8	96.3	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101588

Included Lab Sample IDs: 2200739, 2200740, 2200741, 2200742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	86.7	91.8	P/P	50 - 150
2,4-D	90.5	86.7	P/P	50 - 150
Acetaminophen	101	99.7	P/P	60 - 160
Acetaminophen	99.7	96.4	P/P	60 - 160
Acetamiprid	101	98.2	P/P	50 - 150
Acetamiprid	104	101	P/P	50 - 150
Afidopyropen	81.0	93.0	P/P	50 - 150
Afidopyropen	93.0	88.6	P/P	50 - 150
Bentazon	98.1	65.9	P/P	50 - 160
Benzovindiflupyr	90.0	85.6	P/P	50 - 150
Benzovindiflupyr	92.9	90.0	P/P	50 - 150
Carbamazepine	103	99.3	P/P	60 - 150
Carbamazepine	99.3	101	P/P	60 - 150
Clothianidin	86.9	96.4	P/P	60 - 150
Clothianidin	90.5	86.9	P/P	60 - 150
Dinotefuran	86.3	82.1	P/P	50 - 150
Dinotefuran	89.6	86.3	P/P	50 - 150
Diuron	102	102	P/P	60 - 160
Diuron	104	102	P/P	60 - 160
Fenuron	115	117	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A101588

Included Lab Sample IDs: 2200739, 2200740, 2200741, 2200742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fenuron	118	115	P/P	60 - 150
Fluridone	108	112	P/P	60 - 160
Fluridone	111	108	P/P	60 - 160
Hydrocodone	102	98.2	P/P	60 - 150
Hydrocodone	98.2	99.8	P/P	60 - 150
Ibuprofen	100	97.6	P/P	50 - 160
Ibuprofen	97.6	78.9	P/P	50 - 160
Imazapyr	80.8	82.7	P/P	50 - 160
Imazapyr	82.7	94.3	P/P	50 - 160
Imidacloprid	86.0	82.8	P/P	60 - 150
Imidacloprid	89.9	86.0	P/P	60 - 150
Linuron	103	88.7	P/P	60 - 150
Linuron	83.8	103	P/P	60 - 150
Mandestrobin	98.1	99.7	P/P	50 - 150
Mandestrobin	99.6	98.1	P/P	50 - 150
MCPP	79.1	83.7	P/P	50 - 150
MCPP	83.6	79.1	P/P	50 - 150
Naproxen	112	90.5	P/P	50 - 160
Naproxen	90.5	112	P/P	50 - 160
Primidone	87.1	83.1	P/P	60 - 150
Primidone	90.3	87.1	P/P	60 - 150
Pyraclostrobin	94.2	93.4	P/P	60 - 150
Pyraclostrobin	95.1	94.2	P/P	60 - 150
Thiamethoxam	95.1	96.2	P/P	50 - 150
Thiamethoxam	96.2	94.7	P/P	50 - 150
Tolfenpyrad	95.6	106	P/P	60 - 150
Tolfenpyrad	97.8	95.6	P/P	60 - 150
Triclopyr	70.5	78.1	P/P	50 - 150
Triclopyr	78.1	85.9	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101732

Included Lab Sample IDs: 2200712

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.4	106	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						7.92	
EPA 200.7 Rev. 4.4	Iron	101	107	106	106			0.448
	Manganese	98.8	101	99.8	102			2.17
	Zinc	94.0	96.6	96.9	99.5			2.63
EPA 200.8 Rev. 5.4	Aluminum	100	103	101	100			1.91
	Antimony	99.6	103	101	104			1.46
	Arsenic	105	108	106	111			2.36
	Cadmium	99.6	105	103	104			1.89
	Chromium	100	103	102	101			0.632
	Copper	100	100	98.7	99.0			1.75
	Lead	99.5	101	100	99.8			1.03
	Nickel	101	102	100	100			1.86
	Selenium	92.1	96.4	95.0	99.3			1.48
	Silver	99.4	100	99.1	100			1.01
	Thallium	102	105	105	102			0.604
EPA 300.0 Rev. 2.1	Bromide	107	98.4	101				1.38
EPA 350.1 Rev. 2.0	Ammonia-N	104	103	104				0.540
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	106	104				1.26
	Kjeldahl Nitrogen	101	107	104				1.39
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	101				0.466
EPA 365.1 Rev. 2.0	Total-P	109	101	103				1.98
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.9	97.4	97.7				0.165
EPA 8321B	2,4-D	78.5	57.0	61.8				7.29
	Acesulfame K	125	77.6	73.6				5.35
	Acetaminophen	78.5	99.9	99.2				0.616
	Acetamiprid	66.7	67.4	71.8				6.25
	Afidopyropen	42.2	34.2	35.2				2.81
	AMPA	78.8	121	120				1.24
	Bentazon	43.0	32.2	40.2				10.4
	Benzovindiflupyr	59.2	52.9	55.8				5.25
	Carbamazepine	52.3	48.3	53.1				9.44
	Clothianidin	71.0	74.4	74.2				0.220
	Dinotefuran	77.1	80.8	82.1				1.54
	Diuron	38.8	34.4	37.4				8.21
	Endothall	92.8	89.0	92.2				3.49
	Fenuron	79.9	64.6	68.7				6.21
	Fluridone	66.4	54.1	62.4				11.6
	Glufosinate	85.4	80.7	87.4				7.97
	Glyphosate	93.1	83.1	82.8				0.362
	Hydrocodone	67.8	60.3	63.8				5.69
	Ibuprofen	67.4	53.5	44.7				17.9
	Imazapyr	74.3	78.2	82.8				4.58
	Imidacloprid	83.3	97.8	105				7.21
	Linuron	61.6	48.9	54.8				11.3
	Mandestrobin	68.4	57.4	61.1				6.21
	MCPP	75.5	55.7	60.0				7.32
	Naproxen	42.5	57.3	70.7				21.0
	Primidone	76.3	64.7	62.6				3.35
	Pyraclostrobin	58.3	49.3	54.2				9.50
	Sucralose	105	90.2	87.2				3.06
	Thiamethoxam	72.8	82.7	86.0				3.84
	Tolfenpyrad	44.7	38.6	37.6				2.50
	Triclopyr	64.0	51.8	51.6				0.475
SM 2320 B-2011	Total Alkalinity	99.8					1.20	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-2011	Fluoride	99.4	98.1	98.8		0.467
SM 5310 B-2011	Organic Carbon	102	103	103		0.157

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2200711, 2200714, 2200715
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2200743, 2200744, 2200745
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2200743, 2200744, 2200745
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2200711, 2200714, 2200715
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2200712, 2200716, 2200717
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2200712, 2200716, 2200717
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2200712, 2200716, 2200717
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2200712, 2200716, 2200717
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2200713, 2200718, 2200719
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2200739, 2200740, 2200741, 2200742
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2200739, 2200740, 2200741, 2200742
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2200711, 2200714, 2200715
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2200711, 2200714, 2200715
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2200711, 2200714, 2200715
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2200712, 2200716, 2200717

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	10/08/2020			10/08/2020 15:41	Yen Ta	2200711, 2200714, 2200715
EPA 200.7 Rev. 4.4	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/13/2020 15:17	Betina Topolski	2200743
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/13/2020 15:25	Betina Topolski	2200744
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/13/2020 15:33	Betina Topolski	2200745
EPA 200.8 Rev. 5.4	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/14/2020 14:33	Alexander Thompson	2200743
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/14/2020 14:40	Alexander Thompson	2200744
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/14/2020 14:48	Alexander Thompson	2200745
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/16/2020 21:48	Alexander Thompson	2200743
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/16/2020 21:56	Alexander Thompson	2200744
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/16/2020 22:03	Alexander Thompson	2200745
	10/08/2020	10/12/2020 12:40	Elliott D. Healy	10/18/2020 16:06	Alexander Thompson	2200744
EPA 300.0 Rev. 2.1	10/08/2020			10/09/2020 12:38	Lipi Saha	2200711
	10/08/2020			10/09/2020 13:29	Lipi Saha	2200714
	10/08/2020			10/09/2020 13:46	Lipi Saha	2200715
EPA 350.1 Rev. 2.0	10/08/2020			10/10/2020 13:26	Ping Hua	2200712
	10/08/2020			10/10/2020 13:27	Ping Hua	2200716
	10/08/2020			10/10/2020 13:29	Ping Hua	2200717
EPA 351.2 Rev. 2.0	10/08/2020	10/13/2020 13:25	David Boose	10/14/2020 13:13	Elliott Rodriguez	2200716
	10/08/2020	10/13/2020 13:25	David Boose	10/14/2020 13:22	Elliott Rodriguez	2200717
	10/08/2020	10/21/2020 13:53	David Boose	10/23/2020 14:29	Elliott Rodriguez	2200712
EPA 353.2 Rev. 2.0	10/08/2020			10/14/2020 10:07	Beverly Y. Sanders	2200712
	10/08/2020			10/14/2020 10:08	Beverly Y. Sanders	2200716
	10/08/2020			10/14/2020 10:09	Beverly Y. Sanders	2200717
EPA 365.1 Rev. 2.0	10/08/2020	10/12/2020 12:20	Yen Ta	10/13/2020 13:24	Lipi Saha	2200712
	10/08/2020	10/12/2020 12:20	Yen Ta	10/13/2020 13:25	Lipi Saha	2200716
	10/08/2020	10/12/2020 12:20	Yen Ta	10/13/2020 13:26	Lipi Saha	2200717
EPA 365.1 Rev. 2.0 dissolved	10/08/2020			10/08/2020 15:34	Virginia P. Brown	2200713
	10/08/2020			10/08/2020 15:42	Virginia P. Brown	2200718
	10/08/2020			10/08/2020 15:43	Virginia P. Brown	2200719
EPA 8321B	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 20:40	Rebecca Ware	2200741
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 20:54	Rebecca Ware	2200742
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 21:22	Rebecca Ware	2200739
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/08/2020 21:35	Rebecca Ware	2200740
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 16:18	Rebecca Ware	2200739
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 16:41	Rebecca Ware	2200740
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 17:45	Rebecca Ware	2200741
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/09/2020 17:56	Rebecca Ware	2200742
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 16:02	Rebecca Ware	2200739
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 16:31	Rebecca Ware	2200740
	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 16:43	Rebecca Ware	2200741

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 8321B	10/08/2020	10/08/2020 15:30	Rebecca Ware	10/12/2020 16:54	Rebecca Ware	2200742
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 06:09	Juyoung Kim	2200739
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 06:44	Juyoung Kim	2200740
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 07:18	Juyoung Kim	2200741
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/17/2020 08:28	Juyoung Kim	2200742
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/19/2020 10:27	Juyoung Kim	2200739
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/19/2020 11:02	Juyoung Kim	2200740
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/19/2020 11:36	Juyoung Kim	2200741
	10/08/2020	10/13/2020 09:00	Hoor Shaik	10/19/2020 12:11	Juyoung Kim	2200742
	10/08/2020			10/13/2020 09:41	Lauren Lees	2200714
SM 2320 B-2011	10/08/2020			10/13/2020 09:54	Lauren Lees	2200715
	10/08/2020			10/13/2020 10:20	Lauren Lees	2200711
	10/08/2020			10/09/2020 18:07	Madeline Gruver	2200711, 2200714, 2200715
SM 2540 D-2011	10/08/2020			10/13/2020 09:41	Lauren Lees	2200714
SM 4500 F-C-2011	10/08/2020			10/13/2020 09:54	Lauren Lees	2200715
	10/08/2020			10/13/2020 10:20	Lauren Lees	2200711
	10/08/2020			10/13/2020 03:14	Madeline Gruver	2200712
SM 5310 B-2011	10/08/2020			10/13/2020 03:26	Madeline Gruver	2200716
	10/08/2020			10/13/2020 03:38	Madeline Gruver	2200717