

Chemical Analysis Report

SO-DIST-2020-10-21-01

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

Event Description: **2020 Continuous Monitoring**

Request ID: **RQ-2020-10-05-13**

Customer: **SO-DIST**

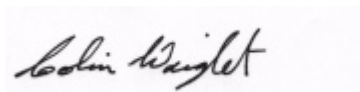
Project ID: **SMP**

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

Date Certified: 12-NOV-2020 11:34

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Apollo Waterway @ Bend

Collection Date/Time: 10/20/2020 12:35

Field ID: G3SD0069

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203761	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P389057	
	EPA 300.0 Rev. 2.1	Bromide	7.5		mg Br/L	P389482	
	SM 2320 B-2011	Total Alkalinity	107		mg CaCO3/L	P389230	
	SM 2540 D-2011	TSS	6	I	mg/L	P389610	
	SM 4500 F-C-2011	Fluoride	0.38		mg F/L	P389236	
2203762	EPA 350.1 Rev. 2.0	Ammonia-N	0.064		mg N/L	P389202	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P389099	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.11		mg N/L	P389073	
	EPA 365.1 Rev. 2.0	Total-P	0.33		mg P/L	P389258	
	SM 5310 B-2011	Organic Carbon	21		mg C/L	P389221	
2203763	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.26		mg P/L	P389050	

Ref. Method and Comment:

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

Sample Location: Rock Creek @ Eisenhower Dr.

Collection Date/Time: 10/20/2020 13:10

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203764	EPA 180.1 Rev. 2.0	Turbidity	3.6		NTU	P389057	
	EPA 300.0 Rev. 2.1	Bromide	4.0		mg Br/L	P389809	
	SM 2320 B-2011	Total Alkalinity	89		mg CaCO3/L	P389230	
	SM 2540 D-2011	TSS	5	I	mg/L	P389610	
	SM 4500 F-C-2011	Fluoride	0.31		mg F/L	P389236	
2203765	EPA 350.1 Rev. 2.0	Ammonia-N	0.061		mg N/L	P389209	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.3		mg N/L	P389283	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.082		mg N/L	P389156	
	EPA 365.1 Rev. 2.0	Total-P	0.37		mg P/L	P389260	
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P389221	
2203766	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.30		mg P/L	P389047	
2203774	EPA 8321B	2,4-D	0.0022	I	ug/L	P389104	
		Acesulfame K**	1.0	U	ug/L	P389065	MS
		AMPA**	0.10	U	ug/L	P389065	
		Sucralose**	0.11		ug/L	P389065	
		Acetaminophen**	0.0089	I	ug/L	P389104	
		Endothall**	2.5	U	ug/L	P389065	
		Acetamiprid**	0.0020	U	ug/L	P389104	
		Glufosinate**	0.10	U	ug/L	P389065	
		Glyphosate**	0.10	U	ug/L	P389065	
		Afidopyropen**	0.0020	U	ug/L	P389104	
		Bentazon	0.0027	I	ug/L	P389104	
		Benzovindiflupyr**	0.0020	U	ug/L	P389104	
		Carbamazepine**	0.0011	I	ug/L	P389104	
		Clothianidin**	0.0020	U	ug/L	P389104	
		Dinotefuran**	0.016		ug/L	P389104	
		Diuron	0.0023	I	ug/L	P389104	
		Fenuron	0.016	U	ug/L	P389104	
		Fluridone**	0.0046		ug/L	P389104	
		Imazapyr**	0.12		ug/L	P389104	
		Hydrocodone**	0.0020	U	ug/L	P389104	
		Ibuprofen**	0.020	U	ug/L	P389104	
		Imidacloprid	0.013		ug/L	P389104	
		Linuron	0.0040	U	ug/L	P389104	
		Mandestrobin**	0.0020	U	ug/L	P389104	
		MCP	0.0020	U	ug/L	P389104	
		Naproxen**	0.0080	U	ug/L	P389104	
		Primidone**	0.0040	U	ug/L	P389104	
		Pyraclostrobin**	0.0020	U	ug/L	P389104	
		Thiamethoxam**	0.0020	U	ug/L	P389104	
		Tolfenpyrad**	0.0020	U	ug/L	P389104	
		Triclopyr**	0.0040	U	ug/L	P389104	
2203776	EPA 200.7 Rev. 4.4	Iron	580		ug/L	P389253	

Field ID: G3SD0070

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203776	EPA 200.7 Rev. 4.4	Manganese	15.8		ug/L	P389253	
		Zinc	5.0	U	ug/L	P389253	
	EPA 200.8 Rev. 5.4	Aluminum	122		ug/L	P389253	
		Antimony	0.10	I	ug/L	P389253	
		Arsenic	2.08		ug/L	P389253	
		Cadmium	0.020	U	ug/L	P389253	
		Chromium	0.76	I	ug/L	P389253	
		Copper	0.69	I	ug/L	P389253	
		Lead	0.20	U	ug/L	P389253	
		Nickel	0.51	I	ug/L	P389253	
		Selenium	0.21	I	ug/L	P389253	
		Silver	0.010	U	ug/L	P389253	
		Thallium	0.10	U	ug/L	P389253	
	SM 2340B	Hardness	508		mg/L	P389253	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

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

Sample Location: Little Alligator Creek @ Midway Blvd.

Collection Date/Time: 10/20/2020 09:40

Field ID: G3SD0071

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2203758	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P389057	
	EPA 300.0 Rev. 2.1	Bromide	21		mg Br/L	P389482	
	SM 2320 B-2011	Total Alkalinity	149		mg CaCO3/L	P389231	
	SM 2540 D-2011	TSS	3	IA	mg/L	P389612	
	SM 4500 F-C-2011	Fluoride	0.67		mg F/L	P389237	
2203759	EPA 350.1 Rev. 2.0	Ammonia-N	0.18		mg N/L	P389202	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.92		mg N/L	P389099	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.078		mg N/L	P389073	
	EPA 365.1 Rev. 2.0	Total-P	0.22		mg P/L	P389258	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P389223	
2203760	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P389050	
2203775	EPA 200.7 Rev. 4.4	Chromium	5.8	I	ug/L	P389103	
		Iron	140	I	ug/L	P389103	
		Manganese	20		ug/L	P389103	
		Zinc	15	U	ug/L	P389103	
	EPA 200.8 Rev. 5.4	Aluminum	64	I	ug/L	P389103	
		Antimony	0.24	I	ug/L	P389103	
		Arsenic	2.62		ug/L	P389103	
		Cadmium	0.080	U	ug/L	P389103	
		Copper	1.6	U	ug/L	P389103	
		Lead	0.80	U	ug/L	P389103	
		Nickel	2.0	U	ug/L	P389103	
		Selenium	0.80	U	ug/L	P389103	
		Silver	0.040	U	ug/L	P389103	
		Thallium	0.40	U	ug/L	P389103	
	SM 2340B	Hardness	2.07E+03		mg/L	P389103	

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: P389057

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P389103

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P389253

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: P389103

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
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 200.8 Rev. 5.4
Batch ID: P389253

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389809

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389202

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389209

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389099

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389073

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389156

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389258

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389260

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389047

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389050

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

Reference Method: EPA 8321B
Batch ID: P389065

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: P389104

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: P389104

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

Reference Method: SM 2320 B-2011
Batch ID: P389230

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

Reference Method: SM 2320 B-2011
Batch ID: P389231

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

Reference Method: SM 2540 D-2011
Batch ID: P389610

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P389612

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P389236

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P389237

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P389221

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

Reference Method: SM 5310 B-2011
Batch ID: P389223

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: P389103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chromium	99.1		P	85 - 115
Iron	102		P	85 - 115
Manganese	102		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P389253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	104		P	85 - 115
Manganese	101		P	85 - 115
Zinc	96.8		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389103

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	108		P	85 - 115
Antimony	103		P	85 - 115
Arsenic	106		P	85 - 115
Cadmium	103		P	85 - 115
Copper	105		P	85 - 115
Lead	98.4		P	85 - 115
Nickel	106		P	85 - 115
Selenium	106		P	85 - 115
Silver	99.9		P	85 - 115
Thallium	106		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.5		P	85 - 115
Antimony	100		P	85 - 115
Arsenic	96.8		P	85 - 115
Cadmium	100		P	85 - 115
Chromium	98.4		P	85 - 115
Copper	98.8		P	85 - 115
Lead	95.6		P	85 - 115
Nickel	98.1		P	85 - 115
Selenium	93.8		P	85 - 115
Silver	102		P	85 - 115
Thallium	102		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389809

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389202

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389209

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389099

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389283

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389073

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	99.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389258

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389260

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P389047

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P389050

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

Reference Method: EPA 8321B
 Batch ID: P389065

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	81.7		P	40 - 150
AMPA	101		P	40 - 150
Endothall	83.7		P	40 - 150
Glufosinate	100		P	40 - 150
Glyphosate	95.2		P	40 - 140
Sucralose	116		P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P389104

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	71.8		P	30 - 160
Acetaminophen	51.6		P	30 - 160
Acetamiprid	55.2		P	30 - 160
Afidopyropen	43.0		P	30 - 160
Bentazon	53.7		P	30 - 160
Benzovindiflupyr	66.9		P	30 - 160
Carbamazepine	49.2		P	30 - 160
Clothianidin	83.6		P	30 - 160
Dinotefuran	71.2		P	30 - 160
Diuron	55.1		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	73.8		P	30 - 160
Hydrocodone	99.9		P	30 - 160
Ibuprofen	86.3		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	82.2		P	30 - 160
Linuron	61.8		P	30 - 160
Mandestrobin	75.2		P	30 - 160
MCPP	74.1		P	30 - 160
Naproxen	81.1		P	30 - 160
Primidone	93.1		P	30 - 160
Pyraclostrobin	55.5		P	30 - 160
Thiamethoxam	95.5		P	30 - 160
Tolfenpyrad	53.4		P	30 - 160
Triclopyr	61.0		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P389230

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P389231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P389236

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P389237

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.6		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P389221

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P389223

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P389103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203775	Chromium	96.3	96.5	P/P	70 - 130
2203775	Iron	102	102	P/P	70 - 130
2203775	Manganese	99.4	97.6	P/P	70 - 130
2203775	Zinc	97.4	97.2	P/P	70 - 130

Reference Method: EPA 200.7 Rev. 4.4
 Batch ID: P389253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203925	Iron	106		P	80 - 120
2203925	Manganese	102		P	80 - 120
2203925	Zinc	97.8		P	80 - 120
2204072	Iron	105	103	P/P	80 - 120
2204072	Manganese	99.4	100	P/P	80 - 120
2204072	Zinc	97.9	97.2	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P389103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203775	Aluminum	115	115	P/P	70 - 130
2203775	Antimony	111	112	P/P	70 - 130
2203775	Arsenic	120	122	P/P	70 - 130
2203775	Cadmium	106	107	P/P	70 - 130
2203775	Copper	120	121	P/P	70 - 130
2203775	Lead	102	104	P/P	70 - 130
2203775	Nickel	114	116	P/P	70 - 130
2203775	Selenium	119	122	P/P	70 - 130
2203775	Silver	93.9	94.2	P/P	70 - 130
2203775	Thallium	109	112	P/P	70 - 130

Reference Method: EPA 200.8 Rev. 5.4
 Batch ID: P389253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203925	Aluminum	96.9		P	80 - 120
2203925	Antimony	101		P	80 - 120
2203925	Arsenic	99.5		P	80 - 120
2203925	Cadmium	99.1		P	80 - 120
2203925	Chromium	99.5		P	80 - 120
2203925	Copper	100		P	80 - 120
2203925	Lead	95.4		P	80 - 120
2203925	Nickel	99.0		P	80 - 120
2203925	Selenium	95.0		P	80 - 120
2203925	Silver	102		P	80 - 120
2203925	Thallium	104		P	80 - 120
2204072	Aluminum	93.8	96.8	P/P	80 - 120
2204072	Antimony	97.4	99.6	P/P	80 - 120
2204072	Arsenic	95.2	97.6	P/P	80 - 120
2204072	Cadmium	95.2	98.6	P/P	80 - 120
2204072	Chromium	97.2	98.4	P/P	80 - 120
2204072	Copper	98.4	102	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2204072	Lead	92.5	95.5	P/P	80 - 120
2204072	Nickel	95.5	97.7	P/P	80 - 120
2204072	Selenium	94.6	96.4	P/P	80 - 120
2204072	Silver	101	102	P/P	80 - 120
2204072	Thallium	101	104	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202265	Bromide	101	106	P/P	90 - 110
2202645	Bromide	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389809

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2204189	Bromide	105	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389202

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203427	Ammonia-N	102	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389209

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203928	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389099

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203762	Kjeldahl Nitrogen	105	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389073

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203634	NO2NO3-N	98.8	98.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203697	NO2NO3-N	99.5	100	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389258

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2202958	Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389260

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203710	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203699	O-Phosphate-P	98.8	99.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389050

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203796	O-Phosphate-P	101	102	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P389065

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203277	Acesulfame K	27.0	27.2	F/F	40 - 150
2203277	AMPA	98.9	96.6	P/P	40 - 150
2203277	Endothall	79.5	82.6	P/P	40 - 150
2203277	Glufosinate	91.9	89.7	P/P	40 - 150
2203277	Glyphosate	82.4	75.2	P/P	40 - 140
2203277	Sucralose	113	100	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P389104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203654	2,4-D	78.3	68.1	P/P	30 - 160
2203654	Acetaminophen	64.4	64.2	P/P	30 - 160
2203654	Acetamiprid	67.5	61.5	P/P	30 - 160
2203654	Afidopyropen	49.5	42.6	P/P	30 - 160
2203654	Bentazon	50.8	45.7	P/P	30 - 160
2203654	Benzovindiflupyr	66.5	68.4	P/P	30 - 160
2203654	Carbamazepine	59.8	55.9	P/P	30 - 160
2203654	Clothianidin	92.2	83.9	P/P	30 - 160
2203654	Dinotefuran	80.8	76.1	P/P	30 - 160
2203654	Diuron	54.4	53.1	P/P	30 - 160
2203654	Fenuron	38.5	40.5	P/P	30 - 160
2203654	Fluridone	70.5	80.0	P/P	30 - 160
2203654	Hydrocodone	112	113	P/P	30 - 160
2203654	Ibuprofen	75.3	74.9	P/P	30 - 160
2203654	Imazapyr	108	101	P/P	30 - 160
2203654	Imidacloprid	99.0	103	P/P	30 - 160
2203654	Linuron	62.0	70.6	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P389104

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203654	Mandestrobin	72.4	78.8	P/P	30 - 160
2203654	MCCP	91.1	92.8	P/P	30 - 160
2203654	Naproxen	66.7	56.6	P/P	30 - 160
2203654	Primidone	86.9	87.3	P/P	30 - 160
2203654	Pyraclostrobin	59.8	63.4	P/P	30 - 160
2203654	Thiamethoxam	93.0	117	P/P	30 - 160
2203654	Tolfenpyrad	53.7	54.2	P/P	30 - 160
2203654	Triclopyr	69.6	66.8	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P389236

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2204041	Fluoride	99.7	98.0	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P389237

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203790	Fluoride	104	107	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P389221

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203673	Organic Carbon	99.3	100	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P389223

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2203634	Organic Carbon	100	99.4	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P389057

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203632	Turbidity	0.766	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P389103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203775	Chromium	0.186	Spike	P	0 - 20
2203775	Iron	0.193	Spike	P	0 - 20
2203775	Manganese	1.68	Spike	P	0 - 20
2203775	Zinc	0.174	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P389253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204072	Iron	2.24	Spike	P	0 - 20
2204072	Manganese	0.511	Spike	P	0 - 20
2204072	Zinc	0.720	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203775	Aluminum	0.159	Spike	P	0 - 20
2203775	Antimony	0.834	Spike	P	0 - 20
2203775	Arsenic	1.54	Spike	P	0 - 20
2203775	Cadmium	1.40	Spike	P	0 - 20
2203775	Copper	0.988	Spike	P	0 - 20
2203775	Lead	2.21	Spike	P	0 - 20
2203775	Nickel	1.21	Spike	P	0 - 20
2203775	Selenium	2.31	Spike	P	0 - 20
2203775	Silver	0.332	Spike	P	0 - 20
2203775	Thallium	2.42	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204072	Aluminum	3.01	Spike	P	0 - 20
2204072	Antimony	2.27	Spike	P	0 - 20
2204072	Arsenic	2.39	Spike	P	0 - 20
2204072	Cadmium	3.54	Spike	P	0 - 20
2204072	Chromium	1.20	Spike	P	0 - 20
2204072	Copper	3.68	Spike	P	0 - 20
2204072	Lead	3.11	Spike	P	0 - 20
2204072	Nickel	2.29	Spike	P	0 - 20
2204072	Selenium	1.93	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P389253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204072	Silver	1.39	Spike	P	0 - 20
2204072	Thallium	3.31	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389482

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202265	Bromide	3.22	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389809

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204189	Bromide	2.30	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389202

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203427	Ammonia-N	1.17	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P389209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203928	Ammonia-N	0.0204	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389099

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203762	Kjeldahl Nitrogen	2.81	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P389283

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203781	Kjeldahl Nitrogen	0.370	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203634	NO2NO3-N	0.0	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P389156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203697	NO2NO3-N	1.00	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389258

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2202958	Total-P	0.894	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P389260

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203710	Total-P	1.69	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203699	O-Phosphate-P	0.290	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P389050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203796	O-Phosphate-P	0.786	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P389065

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203277	Acesulfame K	0.737	Spike	P	0 - 30
2203277	AMPA	2.38	Spike	P	0 - 30
2203277	Endothall	3.88	Spike	P	0 - 30
2203277	Glufosinate	2.45	Spike	P	0 - 30
2203277	Glyphosate	9.13	Spike	P	0 - 30
2203277	Sucralose	12.1	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P389104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203654	2,4-D	14.0	Spike	P	0 - 30
2203654	Acetaminophen	0.237	Spike	P	0 - 30
2203654	Acetamiprid	9.32	Spike	P	0 - 30
2203654	Afidopyropen	15.0	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P389104

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203654	Bentazon	10.6	Spike	P	0 - 30
2203654	Benzovindiflupyr	2.72	Spike	P	0 - 30
2203654	Carbamazepine	6.84	Spike	P	0 - 30
2203654	Clothianidin	9.37	Spike	P	0 - 30
2203654	Dinotefuran	5.95	Spike	P	0 - 30
2203654	Diuron	2.38	Spike	P	0 - 30
2203654	Fenuron	2.16	Spike	P	0 - 30
2203654	Fluridone	12.6	Spike	P	0 - 30
2203654	Hydrocodone	1.05	Spike	P	0 - 30
2203654	Ibuprofen	0.506	Spike	P	0 - 30
2203654	Imazapyr	6.11	Spike	P	0 - 30
2203654	Imidacloprid	3.59	Spike	P	0 - 30
2203654	Linuron	12.9	Spike	P	0 - 30
2203654	Mandestrobin	8.48	Spike	P	0 - 30
2203654	MCPP	1.89	Spike	P	0 - 30
2203654	Naproxen	16.5	Spike	P	0 - 30
2203654	Primidone	0.499	Spike	P	0 - 30
2203654	Pyraclostrobin	5.85	Spike	P	0 - 30
2203654	Thiamethoxam	22.8	Spike	P	0 - 30
2203654	Tolfenpyrad	0.880	Spike	P	0 - 30
2203654	Triclopyr	4.15	Spike	P	0 - 30

Reference Method: SM 2320 B-2011
Batch ID: P389230

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204041	Total Alkalinity	5.18	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P389231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203790	Total Alkalinity	0.296	Sample	P	0 - 8.1

Reference Method: SM 4500 F-C-2011
Batch ID: P389236

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2204041	Fluoride	1.50	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P389237

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203790	Fluoride	1.91	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P389221

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203673	Organic Carbon	0.759	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P389223

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2203634	Organic Carbon	0.751	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2203774
Field Sample ID: G3SD0070

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	76.3	P	30 - 160
EPA 8321B	Acetaminophen-d4	54.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	38.2	P	30 - 160
EPA 8321B	Diuron-d6	37.2	P	30 - 160
EPA 8321B	Endothall-d6	138	P	30 - 160
EPA 8321B	Endothall-d6	138	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	47.4	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	47.4	P	30 - 160
EPA 8321B	Ibuprofen-d3	76.4	P	30 - 160
EPA 8321B	Primidone-d5	59.4	P	30 - 160
EPA 8321B	Sucralose-d6	52.2	P	30 - 160
EPA 8321B	Sucralose-d6	52.2	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101664

Included Lab Sample IDs: 2203760, 2203763, 2203766

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.5	99.9	P/P	90 - 110
O-Phosphate-P	99.8	99.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101666

Included Lab Sample IDs: 2203758, 2203761, 2203764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101675

Included Lab Sample IDs: 2203759, 2203762

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

Reference Method: EPA 8321B

Run ID: A101706

Included Lab Sample IDs: 2203774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	80.3	75.3	P/P	50 - 160
Endothall	109	114	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101724

Included Lab Sample IDs: 2203765

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

Reference Method: EPA 8321B

Run ID: A101728

Included Lab Sample IDs: 2203774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	98.0	100	P/P	50 - 160
Glufosinate	97.1	100	P/P	50 - 160
Glyphosate	93.9	96.0	P/P	50 - 160

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101732

Included Lab Sample IDs: 2203759, 2203762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	103	P/P	90 - 110
Kjeldahl Nitrogen	104	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101736

Included Lab Sample IDs: 2203759, 2203762

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.7	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101740

Included Lab Sample IDs: 2203765

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101745

Included Lab Sample IDs: 2203775

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chromium	102	99.7	P/P	90 - 110
Iron	100	98.9	P/P	90 - 110
Manganese	102	100	P/P	90 - 110
Zinc	103	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101747

Included Lab Sample IDs: 2203759, 2203762, 2203765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	102	P/P	90 - 110
Organic Carbon	99.6	98.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101749

Included Lab Sample IDs: 2203758, 2203761, 2203764

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	98.9	P/P	90 - 110
Total Alkalinity	98.9	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101749

Included Lab Sample IDs: 2203758, 2203761, 2203764

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

Reference Method: EPA 8321B

Run ID: A101788

Included Lab Sample IDs: 2203774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	122	117	P/P	50 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101793

Included Lab Sample IDs: 2203759, 2203762, 2203765

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

Reference Method: EPA 8321B

Run ID: A101797

Included Lab Sample IDs: 2203774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	105	91.4	P/P	50 - 150
Acetaminophen	112	115	P/P	60 - 160
Acetamiprid	113	111	P/P	50 - 150
Afidopyropen	86.0	82.3	P/P	50 - 150
Bentazon	82.8	98.9	P/P	50 - 160
Benzovindiflupyr	107	89.0	P/P	50 - 150
Carbamazepine	79.5	71.5	P/P	60 - 150
Clothianidin	93.7	99.8	P/P	60 - 150
Dinotefuran	84.6	84.1	P/P	50 - 150
Diuron	77.1	71.0	P/P	60 - 160
Fenuron	112	103	P/P	60 - 150
Fluridone	108	93.4	P/P	60 - 160
Hydrocodone	134	120	P/P	60 - 150
Ibuprofen	96.3	123	P/P	50 - 160
Imazapyr	108	120	P/P	50 - 160
Imidacloprid	101	93.3	P/P	60 - 150
Linuron	63.8	68.6	P/P	60 - 150
Mandestrobin	98.7	94.9	P/P	50 - 150
MCPP	90.9	87.4	P/P	50 - 150
Naproxen	97.7	64.4	P/P	50 - 160
Primidone	88.4	102	P/P	60 - 150
Pyraclostrobin	98.0	93.6	P/P	60 - 150
Thiamethoxam	108	109	P/P	50 - 150
Tolfenpyrad	119	110	P/P	60 - 150
Triclopyr	89.0	92.5	P/P	50 - 150

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101801

Included Lab Sample IDs: 2203765

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	97.2	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101807

Included Lab Sample IDs: 2203776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	102	100	P/P	90 - 110
Manganese	99.7	98.3	P/P	90 - 110
Zinc	97.1	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101830

Included Lab Sample IDs: 2203775

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	104	104	P/P	90 - 110
Antimony	100	102	P/P	90 - 110
Arsenic	103	103	P/P	90 - 110
Cadmium	99.0	98.9	P/P	90 - 110
Copper	105	109	P/P	90 - 110
Lead	96.3	96.7	P/P	90 - 110
Nickel	104	107	P/P	90 - 110
Selenium	102	101	P/P	90 - 110
Silver	100	101	P/P	90 - 110
Thallium	97.1	98.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101855

Included Lab Sample IDs: 2203758, 2203761

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	97.8	99.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101986

Included Lab Sample IDs: 2203764

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A102002

Included Lab Sample IDs: 2203776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.2	94.3	P/P	90 - 110
Antimony	98.7	97.3	P/P	90 - 110
Arsenic	96.3	97.0	P/P	90 - 110
Cadmium	96.9	96.8	P/P	90 - 110
Chromium	95.2	95.2	P/P	90 - 110
Nickel	96.1	95.5	P/P	90 - 110
Selenium	96.1	96.4	P/P	90 - 110
Silver	105	104	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A102029

Included Lab Sample IDs: 2203776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	96.8	97.3	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A102030

Included Lab Sample IDs: 2203776

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A102030

Included Lab Sample IDs: 2203776

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	95.7	94.9	P/P	90 - 110
Thallium	97.7	96.7	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						0.766	
EPA 200.7 Rev. 4.4	Chromium	99.1	96.3	96.5				0.186
	Iron	102	102	102				0.193
	Iron	104	106	105	103			2.24
	Manganese	102	99.4	97.6				1.68
	Manganese	101	102	99.4	100			0.511
	Zinc	98.9	97.4	97.2				0.174
	Zinc	96.8	97.8	97.9	97.2			0.720
EPA 200.8 Rev. 5.4	Aluminum	108	115	115				0.159
	Aluminum	97.5	93.8	96.8	96.9			3.01
	Antimony	103	111	112				0.834
	Antimony	100	97.4	99.6	101			2.27
	Arsenic	106	120	122				1.54
	Arsenic	96.8	95.2	97.6	99.5			2.39
	Cadmium	103	106	107				1.40
	Cadmium	100	95.2	98.6	99.1			3.54
	Chromium	98.4	97.2	98.4	99.5			1.20
	Copper	105	120	121				0.988
	Copper	98.8	98.4	102	100			3.68
	Lead	98.4	102	104				2.21
	Lead	95.6	92.5	95.5	95.4			3.11
	Nickel	106	114	116				1.21
	Nickel	98.1	95.5	97.7	99.0			2.29
	Selenium	106	119	122				2.31
	Selenium	93.8	94.6	96.4	95.0			1.93
	Silver	99.9	93.9	94.2				0.332
	Silver	102	101	102	102			1.39
	Thallium	106	109	112				2.42
	Thallium	102	101	104	104			3.31
EPA 300.0 Rev. 2.1	Bromide	106	101	106	102			3.22
	Bromide	105	105	100				2.30
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	104				1.17
	Ammonia-N	101	102	102				0.0204
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	105	109				2.81
	Kjeldahl Nitrogen	107						0.370
EPA 353.2 Rev. 2.0	NO2NO3-N	99.5	98.8	98.8				0.0
	NO2NO3-N	99.5	99.5	100				1.00
EPA 365.1 Rev. 2.0	Total-P	103	103	104				0.894
	Total-P	106	102	104				1.69
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	98.8	99.1				0.290
	O-Phosphate-P	98.9	101	102				0.786
EPA 8321B	2,4-D	71.8	78.3	68.1				14.0
	Acesulfame K	81.7	27.0	27.2				0.737
	Acetaminophen	51.6	64.4	64.2				0.237
	Acetamiprid	55.2	67.5	61.5				9.32
	Afidopyropen	43.0	49.5	42.6				15.0
	AMPA	101	98.9	96.6				2.38
	Bentazon	53.7	50.8	45.7				10.6
	Benzovindiflupyr	66.9	66.5	68.4				2.72
	Carbamazepine	49.2	59.8	55.9				6.84
	Clothianidin	83.6	92.2	83.9				9.37
	Dinotefuran	71.2	80.8	76.1				5.95
	Diuron	55.1	54.4	53.1				2.38
	Endothall	83.7	79.5	82.6				3.88

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Fenuron	102	38.5	40.5		2.16
	Fluridone	73.8	70.5	80.0		12.6
	Glufosinate	100	91.9	89.7		2.45
	Glyphosate	95.2	82.4	75.2		9.13
	Hydrocodone	99.9	112	113		1.05
	Ibuprofen	86.3	75.3	74.9		0.506
	Imazapyr	100	108	101		6.11
	Imidacloprid	82.2	99.0	103		3.59
	Linuron	61.8	62.0	70.6		12.9
	Mandestrobin	75.2	72.4	78.8		8.48
	MCPP	74.1	91.1	92.8		1.89
	Naproxen	81.1	66.7	56.6		16.5
	Primidone	93.1	86.9	87.3		0.499
	Pyraclostrobin	55.5	59.8	63.4		5.85
	Sucralose	116	113	100		12.1
	Thiamethoxam	95.5	93.0	117		22.8
	Tolfenpyrad	53.4	53.7	54.2		0.880
	Triclopyr	61.0	69.6	66.8		4.15
SM 2320 B-2011	Total Alkalinity	102			5.18	
	Total Alkalinity	103			0.296	
SM 4500 F-C-2011	Fluoride	97.6	99.7	98.0		1.50
	Fluoride	98.6	104	107		1.91
SM 5310 B-2011	Organic Carbon	100	99.3	100		0.759
	Organic Carbon	99.0	100	99.4		0.751

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2203758, 2203761, 2203764
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2203775, 2203776
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2203775, 2203776
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2203758, 2203761, 2203764
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2203759, 2203762, 2203765
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2203759, 2203762, 2203765
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2203759, 2203762, 2203765
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2203759, 2203762, 2203765
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2203760, 2203763, 2203766
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2203774
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2203774
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2203758, 2203761, 2203764
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2203775, 2203776
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2203758, 2203761, 2203764
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2203758, 2203761, 2203764
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2203759, 2203762, 2203765

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	10/21/2020			10/21/2020 17:12	Samantha Davila	2203758, 2203761, 2203764
EPA 200.7 Rev. 4.4	10/21/2020	10/22/2020 16:00	Elliott D. Healy	10/23/2020 19:49	Betina Topolski	2203775
	10/21/2020	10/26/2020 13:40	Elliott D. Healy	10/27/2020 14:38	Betina Topolski	2203776
EPA 200.8 Rev. 5.4	10/21/2020	10/22/2020 16:00	Elliott D. Healy	10/29/2020 00:33	Alexander Thompson	2203775
	10/21/2020	10/26/2020 13:40	Elliott D. Healy	11/05/2020 20:54	Alexander Thompson	2203776
	10/21/2020	10/26/2020 13:40	Elliott D. Healy	11/06/2020 13:37	Alexander Thompson	2203776
	10/21/2020	10/26/2020 13:40	Elliott D. Healy	11/06/2020 21:45	Alexander Thompson	2203776
EPA 300.0 Rev. 2.1	10/21/2020			10/29/2020 07:54	Lipi Saha	2203758
	10/21/2020			10/29/2020 08:12	Lipi Saha	2203761
	10/21/2020			11/04/2020 19:33	Lipi Saha	2203764
EPA 350.1 Rev. 2.0	10/21/2020			10/24/2020 17:32	Ping Hua	2203759
	10/21/2020			10/24/2020 17:33	Ping Hua	2203762
	10/21/2020			10/25/2020 11:16	Ping Hua	2203765
EPA 351.2 Rev. 2.0	10/21/2020	10/22/2020 13:40	David Boose	10/23/2020 16:45	Elliott Rodriguez	2203762
	10/21/2020	10/22/2020 13:40	David Boose	10/23/2020 17:07	Elliott Rodriguez	2203759
	10/21/2020	10/26/2020 11:45	David Boose	10/27/2020 13:51	Elliott Rodriguez	2203765
EPA 353.2 Rev. 2.0	10/21/2020			10/22/2020 09:45	Beverly Y. Sanders	2203759
	10/21/2020			10/22/2020 09:46	Beverly Y. Sanders	2203762
	10/21/2020			10/23/2020 11:42	Beverly Y. Sanders	2203765
EPA 365.1 Rev. 2.0	10/21/2020	10/26/2020 13:20	Yen Ta	10/27/2020 12:45	Benjamin T. Nordmann	2203759
	10/21/2020	10/26/2020 13:20	Yen Ta	10/27/2020 12:46	Benjamin T. Nordmann	2203762
	10/21/2020	10/26/2020 13:20	Yen Ta	10/27/2020 13:15	Benjamin T. Nordmann	2203765
EPA 365.1 Rev. 2.0 dissolved	10/21/2020			10/21/2020 16:50	Blanca Fach	2203766
	10/21/2020			10/21/2020 16:56	Blanca Fach	2203763
	10/21/2020			10/21/2020 16:57	Blanca Fach	2203760
EPA 8321B	10/21/2020	10/22/2020 10:00	Rebecca Ware	10/22/2020 19:50	Rebecca Ware	2203774
	10/21/2020	10/22/2020 10:00	Rebecca Ware	10/23/2020 12:47	Rebecca Ware	2203774
	10/21/2020	10/22/2020 10:00	Rebecca Ware	10/26/2020 15:37	Rebecca Ware	2203774
	10/21/2020	10/23/2020 12:00	Hoor Shaik	10/24/2020 07:20	Juyoung Kim	2203774
SM 2320 B-2011	10/21/2020			10/24/2020 07:13	Samantha Davila	2203764
	10/21/2020			10/24/2020 07:27	Samantha Davila	2203761
	10/21/2020			10/24/2020 10:41	Samantha Davila	2203758
SM 2340B	10/21/2020			10/23/2020 20:25	Betina Topolski	2203775
	10/21/2020			10/27/2020 14:38	Betina Topolski	2203776
SM 2540 D-2011	10/21/2020			10/26/2020 15:36	Yijie Li	2203758, 2203761, 2203764
SM 4500 F-C-2011	10/21/2020			10/24/2020 07:13	Samantha Davila	2203764
	10/21/2020			10/24/2020 07:27	Samantha Davila	2203761
	10/21/2020			10/24/2020 09:06	Samantha Davila	2203758
SM 5310 B-2011	10/21/2020			10/23/2020 21:26	Lauren Lees	2203762
	10/21/2020			10/23/2020 21:38	Lauren Lees	2203765

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	10/21/2020			10/24/2020 06:12	Lauren Lees	2203759