

Chemical Analysis Report

CEN-DIST-2020-10-02-01

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

Event Description: **Ellen/Ann/Searcy/Florida/Adelaide**
Request ID: **RQ-2020-09-28-54**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 22-OCT-2020 09:32

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Lake Florida @ Center Of Lake

Collection Date/Time: 10/01/2020 11:28

Field ID: G2CE0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199724	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P388164	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P388630	
		Sulfate	3.5		mg SO4/L	P388633	
	SM 2120 B-2011	Color (true)	94		PCU	P388261	
	SM 2320 B-2011	Total Alkalinity	42		mg CaCO3/L	P388522	
	SM 2540 C-2011	TDS	98		mg/L	P388623	
	SM 2540 D-2011	TSS	3	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.075	I	mg F/L	P388253	
2199727	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P388181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P388333	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388218	
	EPA 365.1 Rev. 2.0	Total-P	0.056		mg P/L	P388346	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P388300	
2199730	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P388168	

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: Lake Ellen @ Center

Collection Date/Time: 10/01/2020 10:41

Field ID: G2CE0060

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199718	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P388164	
	EPA 300.0 Rev. 2.1	Chloride	14	A	mg Cl/L	P388630	
		Sulfate	12	A	mg SO4/L	P388633	
		Color (true)	29	A	PCU	P388261	
	SM 2120 B-2011	Total Alkalinity	4.0		mg CaCO3/L	P388522	
	SM 2540 C-2011	TDS	58		mg/L	P388623	
	SM 2540 D-2011	TSS	2	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.054	I	mg F/L	P388253	
2199719	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P388181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.62		mg N/L	P388333	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388218	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P388346	
	SM 5310 B-2011	Organic Carbon	6.4		mg C/L	P388300	
2199720	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388167	
2199742	EPA 200.7 Rev. 4.4	Barium	10.4		ug/L	P388231	
		Calcium	3.09		mg/L	P388231	
		Iron	30	U	ug/L	P388231	
		Magnesium	2.23		mg/L	P388231	
		Potassium	2.7		mg/L	P388231	
		Sodium	9.2		mg/L	P388231	
		Zinc	5.0	U	ug/L	P388231	
	EPA 200.8 Rev. 5.4	Aluminum	20	I	ug/L	P388231	
		Antimony	0.069	I	ug/L	P388231	
		Arsenic	1.31		ug/L	P388231	
		Beryllium	0.010	U	ug/L	P388231	
		Boron**	39.9		ug/L	P388231	
		Cadmium	0.020	U	ug/L	P388231	
		Chromium	0.40	U	ug/L	P388231	
		Copper	0.42	I	ug/L	P388231	
		Lead	0.20	U	ug/L	P388231	
		Nickel	0.50	U	ug/L	P388231	
		Selenium	0.20	U	ug/L	P388231	
		Silver	0.010	U	ug/L	P388231	
		Thallium	0.10	U	ug/L	P388231	
		Hardness	16.9		mg/L	P388231	

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: Lake Ann @ Center

Collection Date/Time: 10/01/2020 13:37

Field ID: G2CE0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199721	EPA 180.1 Rev. 2.0	Turbidity	3.7	A	NTU	P388164	
	EPA 300.0 Rev. 2.1	Chloride	16		mg Cl/L	P388630	
		Sulfate	12		mg SO4/L	P388633	
	SM 2120 B-2011	Color (true)	45		PCU	P388261	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P388522	
	SM 2540 C-2011	TDS	74		mg/L	P388623	
	SM 2540 D-2011	TSS	6	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.037	I	mg F/L	P388253	
2199722	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P388181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P388333	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388218	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P388346	
	SM 5310 B-2011	Organic Carbon	9.3	A	mg C/L	P388300	
2199723	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388168	
2199741	EPA 8321B	2,4-D	0.032		ug/L	P388291	
		Acesulfame K**	0.10	U	ug/L	P388205	
		AMPA**	0.10	U	ug/L	P388205	
		Sucralose**	1.1		ug/L	P388205	
		Acetaminophen**	0.0080	U	ug/L	P388291	
		Acetamiprid**	0.0020	U	ug/L	P388291	
		Endothall**	0.25	U	ug/L	P388205	
		Glufosinate**	0.10	U	ug/L	P388205	
		Glyphosate**	0.10	U	ug/L	P388205	
		Afidopyropen**	0.0020	U	ug/L	P388291	MS
		Bentazon	0.019		ug/L	P388291	
		Benzovindiflupyr**	0.0020	U	ug/L	P388291	
		Carbamazepine**	8.0E-04	U	ug/L	P388291	
		Clothianidin**	0.0044	I	ug/L	P388291	
		Dinotefuran**	0.0028	I	ug/L	P388291	
		Diuron	0.0020	U	ug/L	P388291	
		Fenuron	0.016	U	ug/L	P388291	
		Fluridone**	9.6E-04	I	ug/L	P388291	
		Imazapyr**	0.034		ug/L	P388291	
		Hydrocodone**	0.0020	U	ug/L	P388291	
		Ibuprofen**	0.020	U	ug/L	P388291	
		Imidacloprid	0.020		ug/L	P388291	
		Linuron	0.0040	U	ug/L	P388291	
		Mandestrobin**	0.0020	U	ug/L	P388291	
		MCP	0.0020	U	ug/L	P388291	
		Naproxen**	0.0080	U	ug/L	P388291	
		Primidone**	0.0040	U	ug/L	P388291	
		Pyraclostrobin**	0.0020	U	ug/L	P388291	
		Thiamethoxam**	0.0020	U	ug/L	P388291	

Field ID: G2CE0097

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199741	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P388291	
		Triclopyr**	0.0040	U	ug/L	P388291	

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: Lake Searcy @ Center

Collection Date/Time: 10/01/2020 09:43

Field ID: G2CE0137

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199725	EPA 180.1 Rev. 2.0	Turbidity	2.9	A	NTU	P388165	
	EPA 300.0 Rev. 2.1	Chloride	15		mg Cl/L	P388630	
		Sulfate	3.6		mg SO4/L	P388633	
	SM 2120 B-2011	Color (true)	100		PCU	P388263	
	SM 2320 B-2011	Total Alkalinity	30		mg CaCO3/L	P388522	
	SM 2540 C-2011	TDS	78		mg/L	P388623	
	SM 2540 D-2011	TSS	3	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.066	I	mg F/L	P388253	
2199728	EPA 350.1 Rev. 2.0	Ammonia-N	0.080		mg N/L	P388181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P388546	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.016		mg N/L	P388219	
	EPA 365.1 Rev. 2.0	Total-P	0.053		mg P/L	P388346	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P388300	
2199731	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388168	

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: Lake Adelaide @ Center

Collection Date/Time: 10/01/2020 12:32

Field ID: G2CE0151

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2199726	EPA 180.1 Rev. 2.0	Turbidity	3.2		NTU	P388165	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P388630	
		Sulfate	5.5		mg SO4/L	P388633	
	SM 2120 B-2011	Color (true)	79	A	PCU	P388263	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P388522	
	SM 2540 C-2011	TDS	90		mg/L	P388623	
	SM 2540 D-2011	TSS	4	I	mg/L	P388618	
	SM 4500 F-C-2011	Fluoride	0.071	I	mg F/L	P388253	
2199729	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P388181	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P388546	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388219	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P388346	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P388443	
2199732	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388168	

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: P388164

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388165

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388231

Component	Result	Code	Units
Barium	1.0	U	ug/L
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388231

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388630

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388633

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388181

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388333

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388546

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388218

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388219

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388346

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388167

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388168

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

Reference Method: EPA 8321B
Batch ID: P388205

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P388205

Component	Result	Code	Units
Glyphosate	0.10	U	ug/L
Sucralose	0.010	U	ug/L

Reference Method: EPA 8321B
Batch ID: P388291

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
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P388261

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P388263

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P388522

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 C-2011
Batch ID: P388623

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388618

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388253

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388300

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

Reference Method: SM 5310 B-2011
Batch ID: P388443

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: P388231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	100		P	85 - 115
Calcium	104		P	85 - 115
Iron	103		P	85 - 115
Magnesium	102		P	85 - 115
Potassium	99.5		P	85 - 115
Sodium	103		P	85 - 115
Zinc	96.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388231

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	95.1		P	85 - 115
Antimony	98.6		P	85 - 115
Arsenic	97.1		P	85 - 115
Beryllium	91.7		P	85 - 115
Boron	92.5		P	85 - 115
Cadmium	96.6		P	85 - 115
Chromium	97.6		P	85 - 115
Copper	95.1		P	85 - 115
Lead	93.5		P	85 - 115
Nickel	96.6		P	85 - 115
Selenium	96.6		P	85 - 115
Silver	94.8		P	85 - 115
Thallium	96.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388630

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388633

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388181

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388333

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388546

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388218

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388219

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388346

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.3		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388168

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

Reference Method: EPA 8321B
Batch ID: P388205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	144		P	40 - 150
AMPA	107		P	40 - 150
Endothall	84.3		P	40 - 150
Glufosinate	106		P	40 - 150
Glyphosate	103		P	40 - 140
Sucralose	109		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P388291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	47.3		P	30 - 160
Acetaminophen	74.2		P	30 - 160
Acetamiprid	68.9		P	30 - 160
Afidopyropen	57.7		P	30 - 160
Bentazon	91.4		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P388291

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Benzovindiflupyr	74.9		P	30 - 160
Carbamazepine	52.3		P	30 - 160
Clothianidin	51.9		P	30 - 160
Dinotefuran	72.6		P	30 - 160
Diuron	30.6		P	30 - 160
Fenuron	90.5		P	30 - 160
Fluridone	89.7		P	30 - 160
Hydrocodone	75.7		P	30 - 160
Ibuprofen	124		P	30 - 160
Imazapyr	120		P	30 - 160
Imidacloprid	82.1		P	30 - 160
Linuron	73.1		P	30 - 160
Mandestrobin	93.6		P	30 - 160
MCPP	157		P	30 - 160
Naproxen	63.5		P	30 - 160
Primidone	71.8		P	30 - 160
Pyraclostrobin	90.0		P	30 - 160
Thiamethoxam	63.8		P	30 - 160
Tolfenpyrad	48.7		P	30 - 160
Triclopyr	134		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P388261

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	95.9		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P388263

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P388522

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

Reference Method: SM 4500 F-C-2011
Batch ID: P388253

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.3		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388300

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P388443

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199769	Barium	105	105	P/P	80 - 120
2199769	Calcium	111	109	P/P	80 - 120
2199769	Iron	109	108	P/P	80 - 120
2199769	Magnesium	109	108	P/P	80 - 120
2199769	Potassium	109	107	P/P	80 - 120
2199769	Sodium	102		P	80 - 120
2199769	Zinc	102	102	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388231

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199769	Aluminum	97.7	95.3	P/P	80 - 120
2199769	Antimony	101	99.4	P/P	80 - 120
2199769	Arsenic	100	98.3	P/P	80 - 120
2199769	Beryllium	95.9	94.2	P/P	80 - 120
2199769	Boron	93.0	92.2	P/P	80 - 120
2199769	Cadmium	97.5	95.4	P/P	80 - 120
2199769	Chromium	101	98.2	P/P	80 - 120
2199769	Copper	100	97.1	P/P	80 - 120
2199769	Lead	95.7	94.1	P/P	80 - 120
2199769	Nickel	99.3	96.7	P/P	80 - 120
2199769	Selenium	99.8	97.2	P/P	80 - 120
2199769	Silver	94.5	92.4	P/P	80 - 120
2199769	Thallium	97.2	98.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388630

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199718	Chloride	105		P	90 - 110
2199753	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388633

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199718	Sulfate	99.5		P	90 - 110
2199753	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388181

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199719	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388333

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199693	Kjeldahl Nitrogen	95.1	105	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P388546

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199728	Kjeldahl Nitrogen	108	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P388218

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199675	NO2NO3-N	99.9	98.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P388219

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199728	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P388346

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199719	Total-P	105	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199599	O-Phosphate-P	97.1	96.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P388168

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199723	O-Phosphate-P	94.6	94.7	P/P	90 - 110

Reference Method: EPA 8321B
 Batch ID: P388205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199640	Acesulfame K	138	137	P/P	40 - 150
2199640	AMPA	105	99.3	P/P	40 - 150
2199640	Endothall	102	116	P/P	40 - 150
2199640	Glufosinate	95.3	93.1	P/P	40 - 150
2199640	Glyphosate	77.4	81.1	P/P	40 - 140
2199640	Sucralose	106	108	P/P	40 - 150

Reference Method: EPA 8321B
 Batch ID: P388291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199564	2,4-D	49.5	50.0	P/P	30 - 160
2199564	Acetaminophen	80.5	83.7	P/P	30 - 160
2199564	Acetamiprid	66.2	59.1	P/P	30 - 160
2199564	Afidopyropen	32.5	28.4	P/F	30 - 160
2199564	Bentazon	34.8	36.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
 Batch ID: P388291

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199564	Benzovindiflupyr	56.7	63.0	P/P	30 - 160
2199564	Carbamazepine	44.5	46.2	P/P	30 - 160
2199564	Clothianidin	63.8	59.5	P/P	30 - 160
2199564	Dinotefuran	78.5	80.9	P/P	30 - 160
2199564	Diuron	37.7	37.0	P/P	30 - 160
2199564	Fenuron	57.5	59.0	P/P	30 - 160
2199564	Fluridone	66.2	63.7	P/P	30 - 160
2199564	Hydrocodone	56.1	60.7	P/P	30 - 160
2199564	Ibuprofen	57.7	51.2	P/P	30 - 160
2199564	Imazapyr	49.9	55.0	P/P	30 - 160
2199564	Imidacloprid	112	112	P/P	30 - 160
2199564	Linuron	76.7	81.3	P/P	30 - 160
2199564	Mandestrobin	60.6	67.1	P/P	30 - 160
2199564	MCP	55.0	57.5	P/P	30 - 160
2199564	Naproxen	40.5	46.4	P/P	30 - 160
2199564	Primidone	75.6	73.4	P/P	30 - 160
2199564	Pyraclostrobin	69.1	70.8	P/P	30 - 160
2199564	Thiamethoxam	68.6	68.8	P/P	30 - 160
2199564	Tolfenpyrad	41.8	40.5	P/P	30 - 160
2199564	Triclopyr	49.8	58.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
 Batch ID: P388253

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199671	Fluoride	99.2	98.6	P/P	94 - 107

Reference Method: SM 5310 B-2011
 Batch ID: P388300

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199722	Organic Carbon	101		P	85 - 115

Reference Method: SM 5310 B-2011
 Batch ID: P388443

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200051	Organic Carbon	98.0	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388164

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199721	Turbidity	6.45	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388165

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199725	Turbidity	2.80	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P388231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199769	Barium	0.0279	Spike	P	0 - 20
2199769	Calcium	1.77	Spike	P	0 - 20
2199769	Iron	0.868	Spike	P	0 - 20
2199769	Magnesium	0.726	Spike	P	0 - 20
2199769	Potassium	1.42	Spike	P	0 - 20
2199769	Sodium	1.08	Spike	P	0 - 20
2199769	Zinc	0.139	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P388231

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199769	Aluminum	2.13	Spike	P	0 - 20
2199769	Antimony	1.67	Spike	P	0 - 20
2199769	Arsenic	1.89	Spike	P	0 - 20
2199769	Beryllium	1.68	Spike	P	0 - 20
2199769	Boron	0.723	Spike	P	0 - 20
2199769	Cadmium	2.24	Spike	P	0 - 20
2199769	Chromium	2.49	Spike	P	0 - 20
2199769	Copper	3.11	Spike	P	0 - 20
2199769	Lead	1.62	Spike	P	0 - 20
2199769	Nickel	2.58	Spike	P	0 - 20
2199769	Selenium	2.61	Spike	P	0 - 20
2199769	Silver	2.28	Spike	P	0 - 20
2199769	Thallium	1.40	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388630

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199718	Chloride	0.421	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199718	Sulfate	0.216	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388181

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199719	Ammonia-N	0.496	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388333

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199693	Kjeldahl Nitrogen	4.94	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388546

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199728	Kjeldahl Nitrogen	3.64	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388218

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199675	NO2NO3-N	0.976	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388219

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199728	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199719	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199599	O-Phosphate-P	0.720	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388168

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199723	O-Phosphate-P	0.106	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P388205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199640	Acesulfame K	0.656	Spike	P	0 - 30
2199640	AMPA	5.12	Spike	P	0 - 30
2199640	Endothall	12.6	Spike	P	0 - 30
2199640	Glufosinate	2.34	Spike	P	0 - 30
2199640	Glyphosate	4.67	Spike	P	0 - 30
2199640	Sucralose	2.00	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P388291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199564	2,4-D	1.00	Spike	P	0 - 30
2199564	Acetaminophen	3.87	Spike	P	0 - 30
2199564	Acetamiprid	11.4	Spike	P	0 - 30
2199564	Afidopyrophen	13.2	Spike	P	0 - 30
2199564	Bentazon	4.28	Spike	P	0 - 30
2199564	Benzovindiflupyr	10.5	Spike	P	0 - 30
2199564	Carbamazepine	3.82	Spike	P	0 - 30
2199564	Clothianidin	7.01	Spike	P	0 - 30
2199564	Dinotefuran	3.07	Spike	P	0 - 30
2199564	Diuron	2.06	Spike	P	0 - 30
2199564	Fenuron	2.56	Spike	P	0 - 30
2199564	Fluridone	3.77	Spike	P	0 - 30
2199564	Hydrocodone	7.94	Spike	P	0 - 30
2199564	Ibuprofen	11.9	Spike	P	0 - 30
2199564	Imazapyr	4.09	Spike	P	0 - 30
2199564	Imidacloprid	0.0777	Spike	P	0 - 30
2199564	Linuron	5.86	Spike	P	0 - 30
2199564	Mandestrobin	10.3	Spike	P	0 - 30
2199564	MCP	4.33	Spike	P	0 - 30
2199564	Naproxen	13.5	Spike	P	0 - 30
2199564	Primidone	2.98	Spike	P	0 - 30
2199564	Pyraclostrobin	2.47	Spike	P	0 - 30
2199564	Thiamethoxam	0.231	Spike	P	0 - 30
2199564	Tolfenpyrad	3.27	Spike	P	0 - 30
2199564	Triclopyr	16.1	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P388261

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199718	Color (true)	1.44	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P388263

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199726	Color (true)	3.69	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P388522

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199672	Total Alkalinity	0.875	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P388623

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199692	TDS	6.03	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P388253

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199671	Fluoride	0.472	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P388300

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199722	Organic Carbon	1.96	Sample	P	0 - 20

Reference Method: SM 5310 B-2011
Batch ID: P388443

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200051	Organic Carbon	0.396	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2199741
Field Sample ID: G2CE0097

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	64.1	P	30 - 160
EPA 8321B	Acetaminophen-d4	72.1	P	30 - 160
EPA 8321B	Carbamazepine-d10	43.5	P	30 - 160
EPA 8321B	Diuron-d6	32.9	P	30 - 160
EPA 8321B	Endothall-d6	118	P	30 - 160
EPA 8321B	Endothall-d6	118	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	109	P	30 - 160
EPA 8321B	Ibuprofen-d3	62.8	P	30 - 160
EPA 8321B	Primidone-d5	67.0	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160
EPA 8321B	Sucralose-d6	108	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101339

Included Lab Sample IDs: 2199718, 2199721, 2199724, 2199725, 2199726

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101341

Included Lab Sample IDs: 2199720, 2199723, 2199730, 2199731, 2199732

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.4	99.4	P/P	90 - 110
O-Phosphate-P	99.7	99.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101344

Included Lab Sample IDs: 2199719, 2199722, 2199727, 2199728, 2199729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	90.6	97.0	P/P	90 - 110
Ammonia-N	97.0	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101362

Included Lab Sample IDs: 2199719, 2199722, 2199727, 2199728, 2199729

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

Reference Method: EPA 8321B

Run ID: A101371

Included Lab Sample IDs: 2199741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	101	108	P/P	60 - 160
Glufosinate	99.3	99.1	P/P	60 - 160
Glyphosate	95.6	98.6	P/P	60 - 160

Reference Method: SM 4500 F-C-2011

Run ID: A101373

Included Lab Sample IDs: 2199718, 2199721, 2199724, 2199725, 2199726

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

Reference Method: SM 2120 B-2011

Run ID: A101377

Included Lab Sample IDs: 2199718, 2199721, 2199724, 2199725, 2199726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.7	98.8	P/P	90 - 115
Color (true)	98.8	98.8	P/P	90 - 115

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A101387

Included Lab Sample IDs: 2199741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	101	114	P/P	60 - 160
Endothall	109	109	P/P	60 - 160

Reference Method: SM 5310 B-2011

Run ID: A101393

Included Lab Sample IDs: 2199719, 2199722, 2199727, 2199728

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.8	97.4	P/P	90 - 110
Organic Carbon	97.4	96.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101433

Included Lab Sample IDs: 2199727, 2199728, 2199729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.7	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101439

Included Lab Sample IDs: 2199742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.5	94.3	P/P	90 - 110
Antimony	98.0	98.7	P/P	90 - 110
Arsenic	97.8	96.8	P/P	90 - 110
Beryllium	95.6	95.1	P/P	90 - 110
Boron	95.4	96.9	P/P	90 - 110
Cadmium	96.0	96.4	P/P	90 - 110
Chromium	95.4	95.6	P/P	90 - 110
Copper	95.2	93.8	P/P	90 - 110
Lead	95.8	96.2	P/P	90 - 110
Nickel	96.6	94.8	P/P	90 - 110
Selenium	97.0	97.8	P/P	90 - 110
Silver	98.6	98.1	P/P	90 - 110
Thallium	93.5	92.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101441

Included Lab Sample IDs: 2199719, 2199722, 2199727

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	98.6	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101446

Included Lab Sample IDs: 2199729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	100	98.4	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101448

Included Lab Sample IDs: 2199719, 2199722

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	96.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101466

Included Lab Sample IDs: 2199742

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	98.9	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	103	103	P/P	90 - 110
Magnesium	102	102	P/P	90 - 110
Potassium	100	99.4	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Zinc	99.6	97.5	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101469

Included Lab Sample IDs: 2199718, 2199721, 2199724, 2199725, 2199726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	99.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101479

Included Lab Sample IDs: 2199741

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101490

Included Lab Sample IDs: 2199728, 2199729

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.3	99.5	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101493

Included Lab Sample IDs: 2199718, 2199721, 2199724, 2199725, 2199726

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	101	P/P	90 - 110
Sulfate	99.7	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101563

Included Lab Sample IDs: 2199741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	91.9	79.7	P/P	50 - 150
Acetaminophen	101	103	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A101563

Included Lab Sample IDs: 2199741

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acetamiprid	102	102	P/P	50 - 150
Afidopyropen	82.9	77.4	P/P	50 - 150
Bentazon	140	142	P/P	50 - 160
Benzovindiflupyr	101	95.4	P/P	50 - 150
Carbamazepine	104	103	P/P	60 - 150
Clothianidin	88.6	93.9	P/P	60 - 150
Dinotefuran	88.2	92.9	P/P	50 - 150
Diuron	95.8	99.0	P/P	60 - 160
Fenuron	92.2	96.8	P/P	60 - 150
Fluridone	101	103	P/P	60 - 160
Hydrocodone	101	101	P/P	60 - 150
Ibuprofen	109	65.7	P/P	50 - 160
Imazapyr	72.4	89.1	P/P	50 - 160
Imidacloprid	101	110	P/P	60 - 150
Linuron	121	139	P/P	60 - 150
Mandestrobin	101	99.4	P/P	50 - 150
MCPP	96.9	102	P/P	50 - 150
Naproxen	73.8	67.0	P/P	50 - 160
Primidone	87.6	97.5	P/P	60 - 150
Pyraclostrobin	94.8	95.0	P/P	60 - 150
Thiamethoxam	95.3	102	P/P	50 - 150
Tolfenpyrad	84.3	88.9	P/P	60 - 150
Triclopyr	111	101	P/P	50 - 150

* 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	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					6.45	
	Turbidity					2.80	
EPA 200.7 Rev. 4.4	Barium	100	105	105			0.0279
	Calcium	104	111	109			1.77
	Iron	103	109	108			0.868
	Magnesium	102	109	108			0.726
	Potassium	99.5	109	107			1.42
	Sodium	103	102				1.08
	Zinc	96.9	102	102			0.139
EPA 200.8 Rev. 5.4	Aluminum	95.1	97.7	95.3			2.13
	Antimony	98.6	101	99.4			1.67
	Arsenic	97.1	100	98.3			1.89
	Beryllium	91.7	95.9	94.2			1.68
	Boron	92.5	93.0	92.2			0.723
	Cadmium	96.6	97.5	95.4			2.24
	Chromium	97.6	101	98.2			2.49
	Copper	95.1	100	97.1			3.11
	Lead	93.5	95.7	94.1			1.62
	Nickel	96.6	99.3	96.7			2.58
	Selenium	96.6	99.8	97.2			2.61
	Silver	94.8	94.5	92.4			2.28
	Thallium	96.0	97.2	98.6			1.40
EPA 300.0 Rev. 2.1	Chloride	102	105	103		0.421	
	Sulfate	99.7	99.5	100		0.216	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.496
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	95.1	105			4.94
	Kjeldahl Nitrogen	109	108	101			3.64
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	99.9	98.9			0.976
	NO ₂ NO ₃ -N	101	99.0	99.0			0.0
EPA 365.1 Rev. 2.0	Total-P	104	105	107			1.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.3	97.1	96.3			0.720
	O-Phosphate-P	98.6	94.6	94.7			0.106
EPA 8321B	2,4-D	47.3	49.5	50.0			1.00
	Acesulfame K	144	138	137			0.656
	Acetaminophen	74.2	80.5	83.7			3.87
	Acetamiprid	68.9	66.2	59.1			11.4
	Afidopyropen	57.7	32.5	28.4			13.2
	AMPA	107	105	99.3			5.12
	Bentazon	91.4	34.8	36.3			4.28
	Benzovindiflupyr	74.9	56.7	63.0			10.5
	Carbamazepine	52.3	44.5	46.2			3.82
	Clothianidin	51.9	63.8	59.5			7.01
	Dinotefuran	72.6	78.5	80.9			3.07
	Diuron	30.6	37.7	37.0			2.06
	Endothall	84.3	102	116			12.6
	Fenuron	90.5	57.5	59.0			2.56
	Fluridone	89.7	66.2	63.7			3.77
	Glufosinate	106	95.3	93.1			2.34
	Glyphosate	103	77.4	81.1			4.67
	Hydrocodone	75.7	56.1	60.7			7.94
	Ibuprofen	124	57.7	51.2			11.9
	Imazapyr	120	49.9	55.0			4.09
	Imidacloprid	82.1	112	112			0.0777
	Linuron	73.1	76.7	81.3			5.86

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Mandestrobin	93.6	60.6	67.1		10.3
	MCCP	157	55.0	57.5		4.33
	Naproxen	63.5	40.5	46.4		13.5
	Primidone	71.8	75.6	73.4		2.98
	Pyraclostrobin	90.0	69.1	70.8		2.47
	Sucralose	109	106	108		2.00
	Thiamethoxam	63.8	68.6	68.8		0.231
	Tolfenpyrad	48.7	41.8	40.5		3.27
	Triclopyr	134	49.8	58.5		16.1
SM 2120 B-2011	Color (true)	95.9			1.44	
	Color (true)	97.2			3.69	
SM 2320 B-2011	Total Alkalinity	103			0.875	
SM 2540 C-2011	TDS				6.03	
SM 4500 F-C-2011	Fluoride	99.3	99.2	98.6		0.472
SM 5310 B-2011	Organic Carbon	99.2	101		1.96	
	Organic Carbon	98.2	98.0	97.2		0.396

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2199718, 2199721, 2199724, 2199725, 2199726
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2199742
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2199742
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2199718, 2199721, 2199724, 2199725, 2199726
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2199718, 2199721, 2199724, 2199725, 2199726
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2199719, 2199722, 2199727, 2199728, 2199729
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2199719, 2199722, 2199727, 2199728, 2199729
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2199719, 2199722, 2199727, 2199728, 2199729
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2199719, 2199722, 2199727, 2199728, 2199729
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2199720, 2199723, 2199730, 2199731, 2199732
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2199741
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2199741
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2199718, 2199721, 2199724, 2199725, 2199726
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2199718, 2199721, 2199724, 2199725, 2199726
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2199742
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2199718, 2199721, 2199724, 2199725, 2199726
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2199718, 2199721, 2199724, 2199725, 2199726
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2199718, 2199721, 2199724, 2199725, 2199726
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2199719, 2199722, 2199727, 2199728, 2199729

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	10/02/2020			10/02/2020 15:55	Yen Ta	2199718, 2199721, 2199724, 2199725, 2199726
EPA 200.7 Rev. 4.4	10/02/2020	10/05/2020 16:00	Elliott D. Healy	10/09/2020 18:48	Betina Topolski	2199742
EPA 200.8 Rev. 5.4	10/02/2020	10/05/2020 16:00	Elliott D. Healy	10/08/2020 17:39	Alexander Thompson	2199742
EPA 300.0 Rev. 2.1	10/02/2020			10/13/2020 16:59	Elliott Rodriguez	2199718
	10/02/2020			10/13/2020 18:43	Elliott Rodriguez	2199721
	10/02/2020			10/13/2020 18:57	Elliott Rodriguez	2199724
	10/02/2020			10/13/2020 19:10	Elliott Rodriguez	2199725
	10/02/2020			10/13/2020 19:23	Elliott Rodriguez	2199726
EPA 350.1 Rev. 2.0	10/02/2020			10/04/2020 12:00	Ping Hua	2199719
	10/02/2020			10/04/2020 12:11	Ping Hua	2199722
	10/02/2020			10/04/2020 12:12	Ping Hua	2199727
	10/02/2020			10/04/2020 12:14	Ping Hua	2199728
	10/02/2020			10/04/2020 12:15	Ping Hua	2199729
EPA 351.2 Rev. 2.0	10/02/2020	10/07/2020 13:24	David Boose	10/08/2020 17:11	Elliott Rodriguez	2199719
	10/02/2020	10/07/2020 13:24	David Boose	10/08/2020 17:13	Elliott Rodriguez	2199722
	10/02/2020	10/07/2020 13:24	David Boose	10/08/2020 17:14	Elliott Rodriguez	2199727
	10/02/2020	10/12/2020 13:42	David Boose	10/13/2020 10:21	Elliott Rodriguez	2199728
	10/02/2020	10/12/2020 13:42	David Boose	10/13/2020 10:26	Elliott Rodriguez	2199729
EPA 353.2 Rev. 2.0	10/02/2020			10/05/2020 12:08	Beverly Y. Sanders	2199719
	10/02/2020			10/05/2020 12:09	Beverly Y. Sanders	2199722
	10/02/2020			10/05/2020 12:10	Beverly Y. Sanders	2199727
	10/02/2020			10/05/2020 12:17	Beverly Y. Sanders	2199728
	10/02/2020			10/05/2020 12:23	Beverly Y. Sanders	2199729
EPA 365.1 Rev. 2.0	10/02/2020	10/07/2020 14:16	Yen Ta	10/08/2020 13:25	Benjamin T. Nordmann	2199727
	10/02/2020	10/07/2020 14:16	Yen Ta	10/08/2020 13:26	Benjamin T. Nordmann	2199728
	10/02/2020	10/07/2020 14:16	Yen Ta	10/08/2020 13:27	Benjamin T. Nordmann	2199729
	10/02/2020	10/07/2020 14:16	Yen Ta	10/09/2020 11:49	Lipi Saha	2199719
	10/02/2020	10/07/2020 14:16	Yen Ta	10/09/2020 11:50	Lipi Saha	2199722
EPA 365.1 Rev. 2.0 dissolved	10/02/2020			10/02/2020 15:48	Blanca Fach	2199720
	10/02/2020			10/02/2020 15:51	Blanca Fach	2199723
	10/02/2020			10/02/2020 15:58	Blanca Fach	2199730
	10/02/2020			10/02/2020 15:59	Blanca Fach	2199731
	10/02/2020			10/02/2020 16:00	Blanca Fach	2199732
EPA 8321B	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/05/2020 15:26	Rebecca Ware	2199741
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/06/2020 13:01	Rebecca Ware	2199741
	10/02/2020	10/05/2020 12:45	Rebecca Ware	10/12/2020 19:04	Rebecca Ware	2199741
	10/02/2020	10/07/2020 13:00	Hoor Shaik	10/10/2020 02:57	Juyoung Kim	2199741
SM 2120 B-2011	10/02/2020			10/02/2020 17:46	Benjamin T. Nordmann	2199718
	10/02/2020			10/02/2020 17:47	Benjamin T. Nordmann	2199721

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2120 B-2011	10/02/2020			10/02/2020 17:48	Benjamin T. Nordmann	2199724
	10/02/2020			10/02/2020 17:51	Benjamin T. Nordmann	2199725
	10/02/2020			10/02/2020 17:53	Benjamin T. Nordmann	2199726
SM 2320 B-2011	10/02/2020			10/09/2020 23:36	Lauren Lees	2199718
	10/02/2020			10/09/2020 23:45	Lauren Lees	2199721
	10/02/2020			10/09/2020 23:55	Lauren Lees	2199724
	10/02/2020			10/10/2020 00:04	Lauren Lees	2199725
	10/02/2020			10/10/2020 00:14	Lauren Lees	2199726
SM 2340B	10/02/2020			10/09/2020 18:48	Betina Topolski	2199742
SM 2540 C-2011	10/02/2020			10/06/2020 13:14	Yijie Li	2199718, 2199721, 2199724, 2199725, 2199726
SM 2540 D-2011	10/02/2020			10/06/2020 13:14	Yijie Li	2199718, 2199721, 2199724, 2199725, 2199726
SM 4500 F-C-2011	10/02/2020			10/06/2020 03:54	Dale L. Simmons	2199718
	10/02/2020			10/06/2020 04:06	Dale L. Simmons	2199721
	10/02/2020			10/06/2020 04:19	Dale L. Simmons	2199724
	10/02/2020			10/06/2020 04:31	Dale L. Simmons	2199725
	10/02/2020			10/06/2020 04:43	Dale L. Simmons	2199726
SM 5310 B-2011	10/02/2020			10/07/2020 03:08	Madeline Gruver	2199722
	10/02/2020			10/07/2020 07:30	Madeline Gruver	2199719
	10/02/2020			10/07/2020 07:51	Madeline Gruver	2199727
	10/02/2020			10/07/2020 08:05	Madeline Gruver	2199728
	10/02/2020			10/08/2020 17:02	Madeline Gruver	2199729