

Chemical Analysis Report

NW-DIST-2020-06-09-01

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

Event Description: **Pace Run One**
Request ID: **RQ-2020-06-08-36**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
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Pensacola, FL 32502-5794
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 29-JUN-2020 15:10

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: Big Coldwater Creek below CR191

Collection Date/Time: 06/08/2020 10:00

Field ID: G4NW0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2175224	EPA 180.1 Rev. 2.0	Turbidity	24		NTU	P382979	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P383135	
		Sulfate	0.95		mg SO4/L	P383138	
	SM 2120 B-2011	Color (true)	46		PCU	P382977	
	SM 2320 B-2011	Total Alkalinity	3.2		mg CaCO3/L	P383085	
	SM 2540 C-2011	TDS	30		mg/L	P383512	
	SM 2540 D-2011	TSS	35		mg/L	P383446	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383088	
2175225	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P383169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P383062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P383007	
	EPA 365.1 Rev. 2.0	Total-P	0.018		mg P/L	P383014	
	SM 5310 B-2011	Organic Carbon	6.9		mg C/L	P383058	
2175226	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.007	I	mg P/L	P382990	
2175242	EPA 8321B	2,4-D	0.0020	U	ug/L	P383047	
		Acesulfame K**	0.10	U	ug/L	P383003	
		AMPA**	0.10	U	ug/L	P383003	
		Sucralose**	0.010	U	ug/L	P383003	
		Acetaminophen**	0.0080	U	ug/L	P383047	
		Acetamiprid**	0.0020	U	ug/L	P383047	
		Endothall**	0.25	U	ug/L	P383003	
		Glufosinate**	0.10	U	ug/L	P383003	
		Glyphosate**	0.10	U	ug/L	P383003	
		Afidopypropan**	0.0020	U	ug/L	P383047	
		Bentazon	0.0016	I	ug/L	P383047	
		Benzovindiflupyr**	0.0020	U	ug/L	P383047	
		Carbamazepine**	8.0E-04	U	ug/L	P383047	
		Clothianidin**	0.0020	U	ug/L	P383047	
		Dinotefuran**	0.0020	U	ug/L	P383047	
		Diuron	0.033		ug/L	P383047	
		Fenuron	0.016	U	ug/L	P383047	
		Fluridone**	8.0E-04	U	ug/L	P383047	
		Imazapyr**	0.0040	U	ug/L	P383047	
		Hydrocodone**	0.0020	U	ug/L	P383047	
		Ibuprofen**	0.020	U	ug/L	P383047	
		Imidacloprid	0.0028	I	ug/L	P383047	
		Linuron	0.0040	U	ug/L	P383047	
		Mandestrobin**	0.0020	U	ug/L	P383047	
		MCPP	0.0020	U	ug/L	P383047	
		Naproxen**	0.0080	U	ug/L	P383047	
		Primidone**	0.0040	U	ug/L	P383047	
		Pyraclostrobin**	0.0020	U	ug/L	P383047	
		Thiamethoxam**	0.0020	U	ug/L	P383047	

Field ID: G4NW0026

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2175242	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P383047	
		Triclopyr**	0.0040	U	ug/L	P383047	
2175243	EPA 200.7 Rev. 4.4	Barium	33.5		ug/L	P383046	
		Calcium	1.97		mg/L	P383046	
		Iron	810		ug/L	P383046	
		Magnesium	1.03		mg/L	P383046	
		Potassium	0.55	I	mg/L	P383046	
		Sodium	1.9	I	mg/L	P383046	
		Zinc	5.0	U	ug/L	P383046	
	EPA 200.8 Rev. 5.4	Aluminum	1.14E+03		ug/L	P383046	
		Antimony	0.052	I	ug/L	P383046	
		Arsenic	0.48		ug/L	P383046	
		Beryllium	0.097		ug/L	P383399	
		Boron**	11.2		ug/L	P383046	
		Cadmium	0.020	U	ug/L	P383046	
		Chromium	1.2	I	ug/L	P383046	
		Cobalt	0.658		ug/L	P383046	
		Copper	0.95		ug/L	P383046	
		Lead	1.05		ug/L	P383046	
		Manganese	27.8		ug/L	P383046	
		Molybdenum	0.15	U	ug/L	P383399	
		Nickel	0.90	I	ug/L	P383046	
		Selenium	0.20	U	ug/L	P383046	
		Silver	0.010	U	ug/L	P383399	
		Thallium	0.10	U	ug/L	P383046	
	SM 2340B	Hardness	9.2		mg/L	P383046	

Ref. Method and Comment:

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

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

EPA 200.8 Rev. 5.4: The lead result was confirmed on 06/16/2020.

Sample Location: Big Coldwater Creek end of Steel Bridge Rd

Collection Date/Time: 06/08/2020 10:30

Field ID: G4NW0027

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2175230	EPA 180.1 Rev. 2.0	Turbidity	13		NTU	P382979	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P383190	
		Sulfate	1.1		mg SO4/L	P383194	
	SM 2120 B-2011	Color (true)	70		PCU	P382975	
	SM 2320 B-2011	Total Alkalinity	1.1	I	mg CaCO3/L	P383086	
	SM 2540 C-2011	TDS	35		mg/L	P383512	
	SM 2540 D-2011	TSS	28		mg/L	P383446	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383089	
2175232	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P383169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P383062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.48		mg N/L	P383007	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P383014	
	SM 5310 B-2011	Organic Carbon	8.9		mg C/L	P383058	
2175234	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P382990	

Ref. Method and Comment:

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

Sample Location: Big Coldwater Creek West Fork upstream of Walling Rd

Collection Date/Time: 06/08/2020 11:20

Field ID: G4NW0436

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2175227	EPA 180.1 Rev. 2.0	Turbidity	16		NTU	P382979	
	EPA 300.0 Rev. 2.1	Chloride	4.7		mg Cl/L	P383190	
		Sulfate	1.5		mg SO4/L	P383194	
	SM 2120 B-2011	Color (true)	63		PCU	P382977	
	SM 2320 B-2011	Total Alkalinity	3.3		mg CaCO3/L	P383086	
	SM 2540 C-2011	TDS	35		mg/L	P383512	
	SM 2540 D-2011	TSS	15		mg/L	P383446	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383089	
2175228	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P383169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P383062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.34		mg N/L	P383007	
	EPA 365.1 Rev. 2.0	Total-P	0.031		mg P/L	P383014	
	SM 5310 B-2011	Organic Carbon	11		mg C/L	P383058	
2175229	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P382990	
2175244	EPA 200.7 Rev. 4.4	Barium	49.8		ug/L	P383046	
		Calcium	2.13		mg/L	P383046	
		Iron	1.13E+03		ug/L	P383046	
		Magnesium	1.38		mg/L	P383046	
		Potassium	1.1	I	mg/L	P383046	
		Sodium	2.1		mg/L	P383046	
		Zinc	5.2	I	ug/L	P383046	
	EPA 200.8 Rev. 5.4	Aluminum	918		ug/L	P383046	
		Antimony	0.050	U	ug/L	P383046	
		Arsenic	0.61		ug/L	P383046	
		Beryllium	0.130		ug/L	P383399	
		Boron**	15.8		ug/L	P383046	
		Cadmium	0.048	I	ug/L	P383046	
		Chromium	1.0	I	ug/L	P383046	
		Cobalt	1.14		ug/L	P383046	
		Copper	1.49		ug/L	P383046	
		Lead	0.83		ug/L	P383046	
		Manganese	79.4		ug/L	P383046	
		Molybdenum	0.15	U	ug/L	P383399	
		Nickel	1.3	I	ug/L	P383046	
		Selenium	0.20	U	ug/L	P383046	
		Silver	0.010	I	ug/L	P383399	
		Thallium	0.10	U	ug/L	P383046	
	SM 2340B	Hardness	11.0		mg/L	P383046	

Ref. Method and Comment:

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

EPA 200.8 Rev. 5.4: The lead result was confirmed on 06/16/2020.

Sample Location: FB_06082020

Collection Date/Time: 06/08/2020 11:45

Field ID: FB_06082020

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2175231	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P382980	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P383190	
		Sulfate	0.20	U	mg SO4/L	P383194	
	SM 2120 B-2011	Color (true)	2.5	U	PCU	P382975	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P383086	
	SM 2540 C-2011	TDS	15	U	mg/L	P383511	
	SM 2540 D-2011	TSS	2	U	mg/L	P383445	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383089	
2175233	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P383169	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P383062	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383007	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P383344	
	SM 5310 B-2011	Organic Carbon	0.88	I	mg C/L	P383058	
2175235	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P382990	

Ref. Method and Comment:

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

SM 5310 B-2011: The result was confirmed on 06/12/2020.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P382979

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P382980

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383046

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: P383046

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

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383399

Component	Result	Code	Units
Beryllium	0.010	U	ug/L
Molybdenum	0.15	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383135

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383138

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383190

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383194

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383062

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383007

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383014

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383344

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P382990

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P383003

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: P383047

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: P382975

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P382977

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P383085

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P383086

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P383511

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P383512

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383445

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383446

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383088

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383089

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P383058

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: P383046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	98.1		P	85 - 115
Iron	101		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	96.8		P	85 - 115
Sodium	96.7		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383046

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	98.8		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	105		P	85 - 115
Boron	101		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Cobalt	102		P	85 - 115
Copper	102		P	85 - 115
Lead	102		P	85 - 115
Manganese	99.9		P	85 - 115
Nickel	101		P	85 - 115
Selenium	102		P	85 - 115
Thallium	101		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383399

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Beryllium	90.5		P	85 - 115
Molybdenum	92.4		P	85 - 115
Silver	98.7		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383135

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383138

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383190

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.1		P	90 - 110

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383194

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383169

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383062

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383007

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383014

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383344

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P382990

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

Reference Method: EPA 8321B
Batch ID: P383003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	70.4		P	40 - 150
AMPA	96.4		P	40 - 150
Endothall	140		P	40 - 150
Glufosinate	96.3		P	40 - 150
Glyphosate	94.5		P	40 - 140
Sucralose	102		P	40 - 150

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P383047

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	121		P	30 - 160
Acetaminophen	83.8		P	30 - 160
Acetamiprid	93.8		P	30 - 160
Afidopyropen	77.3		P	30 - 160
Bentazon	54.0		P	30 - 160
Benzovindiflupyr	65.6		P	30 - 160
Carbamazepine	77.7		P	30 - 160
Clothianidin	78.0		P	30 - 160
Dinotefuran	86.7		P	30 - 160
Diuron	58.5		P	30 - 160
Fenuron	111		P	30 - 160
Fluridone	74.9		P	30 - 160
Hydrocodone	80.0		P	30 - 160
Ibuprofen	73.4		P	30 - 160
Imazapyr	78.5		P	30 - 160
Imidacloprid	102		P	30 - 160
Linuron	59.9		P	30 - 160
Mandestrobin	76.3		P	30 - 160
MCPP	143		P	30 - 160
Naproxen	71.5		P	30 - 160
Primidone	83.5		P	30 - 160
Pyraclostrobin	70.3		P	30 - 160
Thiamethoxam	66.2		P	30 - 160
Tolfenpyrad	51.9		P	30 - 160
Triclopyr	112		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P382975

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	100		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P382977

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383085

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.8		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P383086

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.0		P	93 - 104

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P383088

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.0		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P383089

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383058

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175102	Barium	105		P	80 - 120
2175102	Calcium	99.1		P	80 - 120
2175102	Iron	106		P	80 - 120
2175102	Magnesium	107		P	80 - 120
2175102	Potassium	101		P	80 - 120
2175102	Sodium	99.0		P	80 - 120
2175102	Zinc	108		P	80 - 120
2175261	Barium	104	102	P/P	80 - 120
2175261	Calcium	102		P	80 - 120
2175261	Iron	109	104	P/P	80 - 120
2175261	Magnesium	112	103	P/P	80 - 120
2175261	Potassium	104	99.6	P/P	80 - 120
2175261	Sodium	103		P	80 - 120
2175261	Zinc	110	107	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383046

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175102	Aluminum	103		P	80 - 120
2175102	Antimony	101		P	80 - 120
2175102	Arsenic	105		P	80 - 120
2175102	Boron	99.8		P	80 - 120
2175102	Cadmium	102		P	80 - 120
2175102	Chromium	100		P	80 - 120
2175102	Cobalt	101		P	80 - 120
2175102	Copper	103		P	80 - 120
2175102	Lead	100		P	80 - 120
2175102	Manganese	102		P	80 - 120
2175102	Nickel	102		P	80 - 120
2175102	Selenium	101		P	80 - 120
2175102	Thallium	99.7		P	80 - 120
2175261	Aluminum	98.7	99.7	P/P	80 - 120
2175261	Antimony	103	106	P/P	80 - 120
2175261	Arsenic	107	107	P/P	80 - 120
2175261	Boron	102	98.5	P/P	80 - 120
2175261	Cadmium	105	104	P/P	80 - 120
2175261	Chromium	104	104	P/P	80 - 120
2175261	Cobalt	103	102	P/P	80 - 120
2175261	Copper	103	104	P/P	80 - 120
2175261	Lead	102	103	P/P	80 - 120
2175261	Manganese	101	99.8	P/P	80 - 120
2175261	Nickel	104	104	P/P	80 - 120
2175261	Selenium	103	107	P/P	80 - 120
2175261	Thallium	101	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175033	Beryllium	94.2	92.6	P/P	80 - 120
2175033	Molybdenum	101	99.3	P/P	80 - 120

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383399

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175033	Silver	102	101	P/P	80 - 120
2175100	Beryllium	90.7		P	80 - 120
2175100	Molybdenum	99.1		P	80 - 120
2175100	Silver	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383135

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2174945	Chloride	103		P	90 - 110
2175082	Chloride	104		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2174945	Sulfate	105		P	90 - 110
2175082	Sulfate	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383190

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175227	Chloride	101		P	90 - 110
2175387	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383194

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175227	Sulfate	101		P	90 - 110
2175387	Sulfate	103		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383169

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175217	Ammonia-N	96.3	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383062

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175217	Kjeldahl Nitrogen	105	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175216	NO2NO3-N	99.3	98.3	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383344

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2176112	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P382990

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175218	O-Phosphate-P	94.8	95.5	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P383003

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175191	Acesulfame K	49.0	55.2	P/P	40 - 150
2175191	AMPA	89.4	93.5	P/P	40 - 150
2175191	Endothall	133	138	P/P	40 - 150
2175191	Glufosinate	89.3	94.0	P/P	40 - 150
2175191	Glyphosate	87.0	79.7	P/P	40 - 140
2175191	Sucralose	87.9	93.2	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P383047

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175209	2,4-D	106	118	P/P	30 - 160
2175209	Acetaminophen	91.7	101	P/P	30 - 160
2175209	Acetamiprid	62.8	67.3	P/P	30 - 160
2175209	Afidopyropen	66.9	69.2	P/P	30 - 160
2175209	Benzovindiflupyr	50.5	54.1	P/P	30 - 160
2175209	Carbamazepine	46.7	49.0	P/P	30 - 160
2175209	Clothianidin	58.8	60.7	P/P	30 - 160
2175209	Diuron	34.5	37.1	P/P	30 - 160
2175209	Fenuron	71.2	72.9	P/P	30 - 160
2175209	Fluridone	60.5	65.4	P/P	30 - 160
2175209	Hydrocodone	59.6	62.8	P/P	30 - 160
2175209	Ibuprofen	58.7	55.9	P/P	30 - 160
2175209	Imazapyr	77.0	71.8	P/P	30 - 160
2175209	Imidacloprid	118	96.1	P/P	30 - 160
2175209	Linuron	38.8	45.2	P/P	30 - 160
2175209	Mandestrobin	58.1	60.9	P/P	30 - 160
2175209	MCPP	117	129	P/P	30 - 160
2175209	Naproxen	62.0	67.2	P/P	30 - 160
2175209	Primidone	89.7	78.9	P/P	30 - 160
2175209	Pyraclostrobin	58.3	62.9	P/P	30 - 160
2175209	Thiamethoxam	63.5	63.1	P/P	30 - 160
2175209	Tolfenpyrad	40.5	50.3	P/P	30 - 160
2175209	Triclopyr	113	112	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P383088

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175215	Fluoride	97.6	98.1	P/P	94 - 107

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P383089

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175076	Fluoride	98.8	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383058

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2175077	Organic Carbon	98.8	99.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P382979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175146	Turbidity	2.62	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P382980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175249	Turbidity	2.58	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P383046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175261	Barium	2.22	Spike	P	0 - 20
2175261	Calcium	4.50	Spike	P	0 - 20
2175261	Iron	5.04	Spike	P	0 - 20
2175261	Magnesium	5.22	Spike	P	0 - 20
2175261	Potassium	2.96	Spike	P	0 - 20
2175261	Sodium	2.72	Spike	P	0 - 20
2175261	Zinc	3.00	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175261	Aluminum	0.726	Spike	P	0 - 20
2175261	Antimony	2.60	Spike	P	0 - 20
2175261	Arsenic	0.199	Spike	P	0 - 20
2175261	Boron	2.27	Spike	P	0 - 20
2175261	Cadmium	1.07	Spike	P	0 - 20
2175261	Chromium	0.240	Spike	P	0 - 20
2175261	Cobalt	0.390	Spike	P	0 - 20
2175261	Copper	0.537	Spike	P	0 - 20
2175261	Lead	1.05	Spike	P	0 - 20
2175261	Manganese	0.507	Spike	P	0 - 20
2175261	Nickel	0.0317	Spike	P	0 - 20
2175261	Selenium	3.11	Spike	P	0 - 20
2175261	Thallium	3.19	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P383399

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175033	Beryllium	1.70	Spike	P	0 - 20
2175033	Molybdenum	1.39	Spike	P	0 - 20
2175033	Silver	1.49	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383135

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175082	Chloride	0.750	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175082	Sulfate	0.719	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175387	Chloride	0.127	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383194

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175387	Sulfate	0.168	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383169

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175217	Ammonia-N	1.60	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383062

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175217	Kjeldahl Nitrogen	2.70	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175216	NO2NO3-N	0.866	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383014

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175175	Total-P	0.122	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383344

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2176112	Total-P	2.26	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P382990

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175218	O-Phosphate-P	0.736	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P383003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175191	Acesulfame K	12.0	Spike	P	0 - 30
2175191	AMPA	2.85	Spike	P	0 - 30
2175191	Endothall	3.33	Spike	P	0 - 30
2175191	Glufosinate	5.23	Spike	P	0 - 30
2175191	Glyphosate	5.25	Spike	P	0 - 30
2175191	Sucralose	5.54	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P383047

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175209	2,4-D	11.0	Spike	P	0 - 30
2175209	Acetaminophen	9.98	Spike	P	0 - 30
2175209	Acetamiprid	6.85	Spike	P	0 - 30
2175209	Afidopyropen	3.38	Spike	P	0 - 30
2175209	Bentazon	0.290	Spike	P	0 - 30
2175209	Benzovindiflupyr	6.82	Spike	P	0 - 30
2175209	Carbamazepine	4.92	Spike	P	0 - 30
2175209	Clothianidin	2.98	Spike	P	0 - 30
2175209	Dinotefuran	2.30	Spike	P	0 - 30
2175209	Diuron	7.20	Spike	P	0 - 30
2175209	Fenuron	2.44	Spike	P	0 - 30
2175209	Fluridone	7.79	Spike	P	0 - 30
2175209	Hydrocodone	5.23	Spike	P	0 - 30
2175209	Ibuprofen	4.88	Spike	P	0 - 30
2175209	Imazapyr	3.56	Spike	P	0 - 30
2175209	Imidacloprid	19.1	Spike	P	0 - 30
2175209	Linuron	15.1	Spike	P	0 - 30
2175209	Mandestrobin	4.69	Spike	P	0 - 30
2175209	MCPP	9.64	Spike	P	0 - 30
2175209	Naproxen	8.10	Spike	P	0 - 30
2175209	Primidone	12.8	Spike	P	0 - 30
2175209	Pyraclostrobin	7.55	Spike	P	0 - 30
2175209	Thiamethoxam	0.467	Spike	P	0 - 30
2175209	Tolfenpyrad	21.6	Spike	P	0 - 30
2175209	Triclopyr	1.13	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: SM 2120 B-2011
Batch ID: P382975

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175180	Color (true)	0.865	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P382977

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175081	Color (true)	7.19	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383085

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175215	Total Alkalinity	0.885	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P383086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175076	Total Alkalinity	0.854	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175076	TDS	2.88	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P383512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175146	TDS	5.71	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
Batch ID: P383446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175146	TSS	3.85	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383088

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175215	Fluoride	0.477	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P383089

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175076	Fluoride	0.993	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2175077	Organic Carbon	0.246	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2175242
Field Sample ID: G4NW0026

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	140	P	30 - 160
EPA 8321B	Acetaminophen-d4	98.8	P	30 - 160
EPA 8321B	Carbamazepine-d10	62.5	P	30 - 160
EPA 8321B	Diuron-d6	55.5	P	30 - 160
EPA 8321B	Endothall-d6	132	P	30 - 160
EPA 8321B	Endothall-d6	132	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.5	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	75.5	P	30 - 160
EPA 8321B	Ibuprofen-d3	81.7	P	30 - 160
EPA 8321B	Primidone-d5	98.5	P	30 - 160
EPA 8321B	Sucralose-d6	93.4	P	30 - 160
EPA 8321B	Sucralose-d6	93.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A99227

Included Lab Sample IDs: 2175224, 2175227, 2175230, 2175231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	103	102	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99228

Included Lab Sample IDs: 2175224, 2175227, 2175230, 2175231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	102	P/P	95 - 105
Turbidity	102	102	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99237

Included Lab Sample IDs: 2175226, 2175229, 2175234, 2175235

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.7	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99240

Included Lab Sample IDs: 2175225, 2175228, 2175232, 2175233

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

Reference Method: SM 5310 B-2011

Run ID: A99255

Included Lab Sample IDs: 2175225, 2175228, 2175232, 2175233

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

Reference Method: EPA 8321B

Run ID: A99270

Included Lab Sample IDs: 2175242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	92.6	91.0	P/P	30 - 200
Glufosinate	91.6	95.1	P/P	30 - 200
Glyphosate	94.4	88.0	P/P	30 - 200

Reference Method: SM 2320 B-2011

Run ID: A99271

Included Lab Sample IDs: 2175224, 2175227, 2175230, 2175231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.3	97.6	P/P	90 - 110
Total Alkalinity	97.6	95.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A99271

Included Lab Sample IDs: 2175224, 2175227, 2175230, 2175231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	103	P/P	90 - 110
Fluoride	102	100	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A99272

Included Lab Sample IDs: 2175242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	71.4	69.9	P/P	30 - 200
Endothall	133	135	P/P	30 - 200

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A99278

Included Lab Sample IDs: 2175243, 2175244

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99287

Included Lab Sample IDs: 2175228

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.2	97.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A99289

Included Lab Sample IDs: 2175243, 2175244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.8	97.6	P/P	90 - 110
Antimony	103	101	P/P	90 - 110
Arsenic	103	101	P/P	90 - 110
Boron	102	101	P/P	90 - 110
Cadmium	102	99.1	P/P	90 - 110
Chromium	102	100	P/P	90 - 110
Cobalt	100	98.4	P/P	90 - 110
Copper	102	100	P/P	90 - 110
Lead	98.6	96.5	P/P	90 - 110
Manganese	101	98.0	P/P	90 - 110
Nickel	102	98.7	P/P	90 - 110
Selenium	102	99.1	P/P	90 - 110
Thallium	91.9	90.3	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A99294

Included Lab Sample IDs: 2175242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	83.9	90.1	P/P	30 - 200

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99295

Included Lab Sample IDs: 2175224, 2175227, 2175230, 2175231

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Chloride	98.7	97.8	P/P	90 - 110
Sulfate	100	99.4	P/P	90 - 110
Sulfate	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99309

Included Lab Sample IDs: 2175225, 2175228, 2175232, 2175233

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

Reference Method: EPA 8321B

Run ID: A99327

Included Lab Sample IDs: 2175242

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	81.3	105	P/P	50 - 150
Acetaminophen	111	111	P/P	60 - 160
Acetamiprid	127	126	P/P	50 - 150
Afidopyropen	104	104	P/P	50 - 150
Bentazon	109	100	P/P	50 - 160
Benzovindiflupyr	102	97.7	P/P	50 - 150
Carbamazepine	105	106	P/P	60 - 150
Clothianidin	105	105	P/P	60 - 150
Dinotefuran	103	101	P/P	50 - 150
Diuron	103	102	P/P	60 - 160
Fenuron	131	131	P/P	60 - 150
Fluridone	97.5	97.3	P/P	60 - 160
Hydrocodone	106	104	P/P	60 - 150
Ibuprofen	101	90.9	P/P	50 - 160
Imazapyr	132	121	P/P	50 - 150
Imidacloprid	105	106	P/P	60 - 150
Linuron	94.8	96.4	P/P	60 - 150
Mandestrobin	99.7	99.7	P/P	50 - 150
MCPP	137	131	P/P	50 - 150
Naproxen	69.3	95.2	P/P	50 - 160
Primidone	106	92.5	P/P	60 - 150
Pyraclostrobin	107	109	P/P	60 - 150
Thiamethoxam	104	102	P/P	50 - 150
Tolfenpyrad	98.9	105	P/P	60 - 150
Triclopyr	102	124	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99330

Included Lab Sample IDs: 2175225, 2175228, 2175232, 2175233

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99336

Included Lab Sample IDs: 2175225, 2175232

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.5	95.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A99378

Included Lab Sample IDs: 2175243, 2175244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Beryllium	99.1	96.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A99411

Included Lab Sample IDs: 2175243, 2175244

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Molybdenum	96.7	100	P/P	90 - 110
Silver	105	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99413

Included Lab Sample IDs: 2175233

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

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

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

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			LCS	Precision SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						2.62	
	Turbidity						2.58	
EPA 200.7 Rev. 4.4	Barium	101	105	104	102			2.22
	Calcium	98.1	99.1	102				4.50
	Iron	101	106	109	104			5.04
	Magnesium	103	107	112	103			5.22
	Potassium	96.8	101	104	99.6			2.96
	Sodium	96.7	99.0	103				2.72
	Zinc	102	108	110	107			3.00
EPA 200.8 Rev. 5.4	Aluminum	98.8	98.7	99.7	103			0.726
	Antimony	104	103	106	101			2.60
	Arsenic	105	107	107	105			0.199
	Beryllium	90.5	94.2	92.6	90.7			1.70
	Boron	101	102	98.5	99.8			2.27
	Cadmium	103	105	104	102			1.07
	Chromium	103	104	104	100			0.240
	Cobalt	102	103	102	101			0.390
	Copper	102	103	104	103			0.537
	Lead	102	102	103	100			1.05
	Manganese	99.9	101	99.8	102			0.507
	Molybdenum	92.4	101	99.3	99.1			1.39
	Nickel	101	104	104	102			0.0317
	Selenium	102	103	107	101			3.11
	Silver	98.7	102	101	103			1.49
	Thallium	101	101	105	99.7			3.19
EPA 300.0 Rev. 2.1	Chloride	102	104	103			0.750	
	Chloride	99.1	103	101			0.127	
	Sulfate	104	106	105			0.719	
	Sulfate	102	103	101			0.168	
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	96.3	98.0				1.60
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	105	109				2.70
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.5	99.3	98.3				0.866
EPA 365.1 Rev. 2.0	Total-P	102						0.122
	Total-P	108	103	105				2.26
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	94.8	95.5				0.736
EPA 8321B	2,4-D	121	106	118				11.0
	Acesulfame K	70.4	49.0	55.2				12.0
	Acetaminophen	83.8	91.7	101				9.98
	Acetamiprid	93.8	62.8	67.3				6.85
	Afidopyropen	77.3	66.9	69.2				3.38
	AMPA	96.4	89.4	93.5				2.85
	Bentazon	54.0						0.290
	Benzovindiflupyr	65.6	50.5	54.1				6.82
	Carbamazepine	77.7	46.7	49.0				4.92
	Clothianidin	78.0	58.8	60.7				2.98
	Dinotefuran	86.7						2.30
	Diuron	58.5	34.5	37.1				7.20
	Endothall	140	133	138				3.33
	Fenuron	111	71.2	72.9				2.44
	Fluridone	74.9	60.5	65.4				7.79
	Glufosinate	96.3	89.3	94.0				5.23
	Glyphosate	94.5	87.0	79.7				5.25
	Hydrocodone	80.0	59.6	62.8				5.23
	Ibuprofen	73.4	58.7	55.9				4.88

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Imazapyr	78.5	77.0	71.8		3.56
	Imidacloprid	102	118	96.1		19.1
	Linuron	59.9	38.8	45.2		15.1
	Mandestrobin	76.3	58.1	60.9		4.69
	MCP	143	117	129		9.64
	Naproxen	71.5	62.0	67.2		8.10
	Primidone	83.5	89.7	78.9		12.8
	Pyraclostrobin	70.3	58.3	62.9		7.55
	Sucralose	102	87.9	93.2		5.54
	Thiamethoxam	66.2	63.5	63.1		0.467
	Tolfenpyrad	51.9	40.5	50.3		21.6
	Triclopyr	112	113	112		1.13
SM 2120 B-2011	Color (true)	100			0.865	
	Color (true)	103			7.19	
SM 2320 B-2011	Total Alkalinity	98.8			0.885	
	Total Alkalinity	99.0			0.854	
SM 2540 C-2011	TDS				2.88	
	TDS				5.71	
SM 2540 D-2011	TSS				3.85	
SM 4500 F-C-2011	Fluoride	99.0	97.6	98.1		0.477
	Fluoride	99.5	98.8	100		0.993
SM 5310 B-2011	Organic Carbon	98.8	98.8	99.1		0.246

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2175224, 2175227, 2175230, 2175231
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2175243, 2175244
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2175243, 2175244
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2175224, 2175227, 2175230, 2175231
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2175224, 2175227, 2175230, 2175231
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2175225, 2175228, 2175232, 2175233
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2175225, 2175228, 2175232, 2175233
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2175225, 2175228, 2175232, 2175233
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2175225, 2175228, 2175232, 2175233
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2175226, 2175229, 2175234, 2175235
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2175242
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2175242
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2175224, 2175227, 2175230, 2175231
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2175224, 2175227, 2175230, 2175231
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2175243, 2175244
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2175224, 2175227, 2175230, 2175231
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2175224, 2175227, 2175230, 2175231
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2175224, 2175227, 2175230, 2175231
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2175225, 2175228, 2175232, 2175233

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	06/09/2020			06/09/2020 17:02	Yen Ta	2175224, 2175227, 2175230, 2175231
EPA 200.7 Rev. 4.4	06/09/2020	06/10/2020 15:40	Elliott D. Healy	06/11/2020 17:20	Betina Topolski	2175243
	06/09/2020	06/10/2020 15:40	Elliott D. Healy	06/11/2020 17:26	Betina Topolski	2175244
EPA 200.8 Rev. 5.4	06/09/2020	06/10/2020 15:40	Elliott D. Healy	06/11/2020 18:15	Justin Cutchin	2175243
	06/09/2020	06/10/2020 15:40	Elliott D. Healy	06/11/2020 18:22	Justin Cutchin	2175244
	06/09/2020	06/15/2020 11:25	Justin Cutchin	06/16/2020 20:08	Justin Cutchin	2175243
	06/09/2020	06/15/2020 11:25	Justin Cutchin	06/16/2020 20:14	Justin Cutchin	2175244
	06/09/2020	06/15/2020 11:25	Justin Cutchin	06/18/2020 16:05	Justin Cutchin	2175243
	06/09/2020	06/15/2020 11:25	Justin Cutchin	06/18/2020 16:10	Justin Cutchin	2175244
EPA 300.0 Rev. 2.1	06/09/2020			06/11/2020 15:25	Elliott Rodriguez	2175224
	06/09/2020			06/12/2020 19:36	Elliott Rodriguez	2175227
	06/09/2020			06/12/2020 20:02	Elliott Rodriguez	2175230
	06/09/2020			06/12/2020 20:15	Elliott Rodriguez	2175231
EPA 350.1 Rev. 2.0	06/09/2020			06/13/2020 13:53	Ping Hua	2175225
	06/09/2020			06/13/2020 13:55	Ping Hua	2175228
	06/09/2020			06/13/2020 13:56	Ping Hua	2175232
	06/09/2020			06/13/2020 13:58	Ping Hua	2175233
EPA 351.2 Rev. 2.0	06/09/2020	06/11/2020 10:02	Sima Feizi	06/15/2020 13:32	Jhamieka S. Greenwood	2175225
	06/09/2020	06/11/2020 10:02	Sima Feizi	06/15/2020 13:34	Jhamieka S. Greenwood	2175228
	06/09/2020	06/11/2020 10:02	Sima Feizi	06/15/2020 13:35	Jhamieka S. Greenwood	2175232
	06/09/2020	06/11/2020 10:02	Sima Feizi	06/15/2020 13:37	Jhamieka S. Greenwood	2175233
EPA 353.2 Rev. 2.0	06/09/2020			06/10/2020 09:13	Beverly Y. Sanders	2175225
	06/09/2020			06/10/2020 09:15	Beverly Y. Sanders	2175228
	06/09/2020			06/10/2020 09:16	Beverly Y. Sanders	2175232
	06/09/2020			06/10/2020 09:17	Beverly Y. Sanders	2175233
EPA 365.1 Rev. 2.0	06/09/2020	06/10/2020 13:08	Yen Ta	06/12/2020 09:35	Lipi Saha	2175228
	06/09/2020	06/10/2020 13:08	Yen Ta	06/16/2020 08:39	Lipi Saha	2175225
	06/09/2020	06/10/2020 13:08	Yen Ta	06/16/2020 08:40	Lipi Saha	2175232
	06/09/2020	06/17/2020 12:24	Yen Ta	06/19/2020 08:15	Lipi Saha	2175233
EPA 365.1 Rev. 2.0 dissolved	06/09/2020			06/09/2020 15:48	Carlos Miranda	2175226
	06/09/2020			06/09/2020 15:49	Carlos Miranda	2175229
	06/09/2020			06/09/2020 15:50	Carlos Miranda	2175234
	06/09/2020			06/09/2020 15:51	Carlos Miranda	2175235
EPA 8321B	06/09/2020	06/10/2020 12:00	Rebecca Ware	06/10/2020 16:28	Rebecca Ware	2175242
	06/09/2020	06/10/2020 12:00	Rebecca Ware	06/11/2020 13:35	Rebecca Ware	2175242
	06/09/2020	06/10/2020 12:00	Rebecca Ware	06/12/2020 11:28	Rebecca Ware	2175242
	06/09/2020	06/11/2020 10:00	Hoor Shaik	06/14/2020 12:22	Juyoung Kim	2175242
SM 2120 B-2011	06/09/2020			06/09/2020 15:54	Blanca Fach	2175230
	06/09/2020			06/09/2020 15:55	Blanca Fach	2175231
	06/09/2020			06/09/2020 16:13	Blanca Fach	2175224, 2175227

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2320 B-2011	06/09/2020			06/10/2020 20:12	Dale L. Simmons	2175224
	06/09/2020			06/10/2020 22:45	Dale L. Simmons	2175227
	06/09/2020			06/10/2020 22:54	Dale L. Simmons	2175230
	06/09/2020			06/10/2020 23:03	Dale L. Simmons	2175231
SM 2340B	06/09/2020			06/11/2020 17:20	Betina Topolski	2175243
	06/09/2020			06/11/2020 17:26	Betina Topolski	2175244
SM 2540 C-2011	06/09/2020			06/12/2020 15:15	Yijie Li	2175224, 2175227, 2175230, 2175231
SM 2540 D-2011	06/09/2020			06/12/2020 15:15	Yijie Li	2175224, 2175227, 2175230, 2175231
SM 4500 F-C-2011	06/09/2020			06/10/2020 20:12	Dale L. Simmons	2175224
	06/09/2020			06/10/2020 22:45	Dale L. Simmons	2175227
	06/09/2020			06/10/2020 22:54	Dale L. Simmons	2175230
	06/09/2020			06/10/2020 23:03	Dale L. Simmons	2175231
SM 5310 B-2011	06/09/2020			06/10/2020 18:26	David Boose	2175225
	06/09/2020			06/10/2020 18:38	David Boose	2175228
	06/09/2020			06/10/2020 18:53	David Boose	2175232
	06/09/2020			06/10/2020 19:05	David Boose	2175233