

Chemical Analysis Report

NW-DIST-2020-01-24-01

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

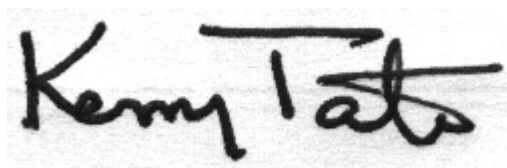
Event Description: **Defuniak Run**
Request ID: **RQ-2020-01-13-43**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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

Date Certified: 18-FEB-2020 09:47

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Panther Creek upstream of SR280

Collection Date/Time: 01/23/2020 10:23

Field ID: G3NW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151545	EPA 180.1 Rev. 2.0	Turbidity	3.4		NTU	P377785	
	EPA 300.0 Rev. 2.1	Chloride	4.1		mg Cl/L	P378150	
		Sulfate	2.3		mg SO4/L	P378155	
		Color (true)	36		PCU	P377717	
	SM 2120 B-2011	Total Alkalinity	1.4	I	mg CaCO3/L	P378050	
	SM 2540 C-2011	TDS	22	I	mg/L	P378248	
	SM 2540 D-2011	TSS	2	U	mg/L	P377864	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P378054	
2151547	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P378180	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.16	I	mg N/L	P378170	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.008	I	mg N/L	P377936	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P378027	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P377956	
2151549	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P377758	
2151559	EPA 200.7 Rev. 4.4	Barium	12.3		ug/L	P377724	
		Calcium	1.29		mg/L	P377724	
		Iron	340		ug/L	P377724	
		Magnesium	0.67		mg/L	P377724	
		Potassium	0.30	U	mg/L	P377724	
		Sodium	2.5		mg/L	P377724	
		Zinc	8.8	I	ug/L	P377724	
		Aluminum	223		ug/L	P377724	
	EPA 200.8 Rev. 5.4	Antimony	0.050	U	ug/L	P377724	
		Arsenic	0.20		ug/L	P377724	
		Boron**	6.4	I	ug/L	P377724	
		Cadmium	0.022	I	ug/L	P377724	
		Chromium	0.40	U	ug/L	P377724	
		Copper	0.40	U	ug/L	P377724	
		Lead	0.20	U	ug/L	P377724	
		Nickel	0.50	U	ug/L	P377724	
		Selenium	0.20	U	ug/L	P377724	
		Silver	0.010	U	ug/L	P377724	
		Thallium	0.10	U	ug/L	P377724	

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: Bay Branch upstream of Hwy 331

Collection Date/Time: 01/23/2020 11:07

Field ID: G3NW0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151546	EPA 180.1 Rev. 2.0	Turbidity	3.7		NTU	P377785	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P378150	
		Sulfate	3.4		mg SO4/L	P378155	
		Color (true)	69		PCU	P377717	
	SM 2320 B-2011	Total Alkalinity	6.4		mg CaCO3/L	P378050	
	SM 2540 C-2011	TDS	36		mg/L	P378248	
	SM 2540 D-2011	TSS	2	U	mg/L	P377864	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P378054	
2151548	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P378180	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.23		mg N/L	P378170	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.012		mg N/L	P377936	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P378027	
	SM 5310 B-2011	Organic Carbon	6.4		mg C/L	P377956	
2151550	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P377758	
2151560	EPA 200.7 Rev. 4.4	Barium	11.5		ug/L	P377724	
		Calcium	3.73		mg/L	P377724	
		Iron	370		ug/L	P377724	
		Magnesium	0.92		mg/L	P377724	
		Potassium	0.34	I	mg/L	P377724	
		Sodium	2.8		mg/L	P377724	
		Zinc	7.7	I	ug/L	P377724	
	EPA 200.8 Rev. 5.4	Aluminum	262		ug/L	P377724	
		Antimony	0.050	U	ug/L	P377724	
		Arsenic	0.23		ug/L	P377724	
		Boron**	7.5	I	ug/L	P377724	
		Cadmium	0.020	U	ug/L	P377724	
		Chromium	0.40	U	ug/L	P377724	
		Copper	0.40	U	ug/L	P377724	
		Lead	0.24	I	ug/L	P377724	
		Nickel	0.50	U	ug/L	P377724	
		Selenium	0.20	U	ug/L	P377724	
		Silver	0.010	U	ug/L	P377724	
		Thallium	0.10	U	ug/L	P377724	

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: HUCKLEBERRY CREEK

Collection Date/Time: 01/23/2020 12:15

Field ID: G3NW0135

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151558	EPA 8321B	2,4-D	0.0045	I	ug/L	P377677	
		Acesulfame K**	0.10	U	ug/L	P377680	
		AMPA**	0.10	U	ug/L	P377680	
		Sucralose**	0.094		ug/L	P377680	
		Acetaminophen**	0.0080	U	ug/L	P377677	
		Acetamiprid**	0.0020	U	ug/L	P377677	
		Endothall**	0.25	U	ug/L	P377680	
		Glufosinate**	0.10	U	ug/L	P377680	
		Glyphosate**	0.10	U	ug/L	P377680	
		Afidopyropen**	0.0020	UJ	ug/L	P377677	
		Bentazon	8.0E-04	U	ug/L	P377677	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P377677	
		Carbamazepine**	8.0E-04	U	ug/L	P377677	
		Clothianidin**	0.0020	U	ug/L	P377677	
		Dinotefuran**	0.0020	U	ug/L	P377677	
		Diuron	0.0020	U	ug/L	P377677	
		Fenuron	0.016	U	ug/L	P377677	
		Fluridone**	8.0E-04	U	ug/L	P377677	
		Imazapyr**	0.0040	U	ug/L	P377677	
		Hydrocodone**	0.0020	U	ug/L	P377677	
		Ibuprofen**	0.020	U	ug/L	P377677	
		Imidacloprid	0.0020	U	ug/L	P377677	
		Linuron	0.0040	U	ug/L	P377677	
		Mandestrobin**	0.0020	UJ	ug/L	P377677	
		MCPP	0.0020	U	ug/L	P377677	
		Naproxen**	0.0080	U	ug/L	P377677	
		Primidone**	0.0040	U	ug/L	P377677	
		Pyraclostrobin**	0.0020	U	ug/L	P377677	
		Thiamethoxam**	0.0020	U	ug/L	P377677	
		Tolfenpyrad**	0.0020	U	ug/L	P377677	
		Triclopyr**	0.0040	U	ug/L	P377677	

Ref. Method and Comment:

EPA 8321B: J - second source check standards for some analytes were not available for analysis.

Sample Location: GUM CREEK

Collection Date/Time: 01/23/2020 13:12

Field ID: G4NW0382

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2151564	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P377785	
	EPA 300.0 Rev. 2.1	Chloride	4.3		mg Cl/L	P378150	
		Sulfate	1.6		mg SO4/L	P378155	
	SM 2120 B-2011	Color (true)	30		PCU	P377718	
	SM 2320 B-2011	Total Alkalinity	1.7	I	mg CaCO3/L	P378050	
	SM 2540 C-2011	TDS	25		mg/L	P378274	
	SM 2540 D-2011	TSS	2	U	mg/L	P378064	
2151565	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P378054	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P378180	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.17	I	mg N/L	P378170	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.55		mg N/L	P377936	
	EPA 365.1 Rev. 2.0	Total-P	0.005		mg P/L	P378027	
2151566	SM 5310 B-2011	Organic Carbon	3.7		mg C/L	P377956	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	UQ	mg P/L	P378913	

Ref. Method and Comment:

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

EPA 365.1 Rev. 2.0 dissolved: O-Phosphate-P: The sample was reanalyzed out of holding time due to analytical difficulties.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377785

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

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: P377724

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
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: P378150

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378155

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378180

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P378170

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377936

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378027

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377758

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P378913

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

Reference Method: EPA 8321B
 Batch ID: P377677

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
MCP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377677

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

Reference Method: EPA 8321B
Batch ID: P377680

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

Reference Method: SM 2120 B-2011
Batch ID: P377717

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P377718

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378050

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

Reference Method: SM 2540 C-2011
Batch ID: P378248

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P378274

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377864

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P378064

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378054

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377956

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: P377724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	102		P	85 - 115
Calcium	100		P	85 - 115
Iron	103		P	85 - 115
Magnesium	104		P	85 - 115
Potassium	101		P	85 - 115
Sodium	99.8		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	102		P	80 - 120
Antimony	106		P	80 - 120
Arsenic	104		P	80 - 120
Boron	98.5		P	80 - 120
Cadmium	104		P	80 - 120
Chromium	103		P	80 - 120
Copper	105		P	80 - 120
Lead	107		P	80 - 120
Nickel	103		P	80 - 120
Selenium	103		P	80 - 120
Silver	104		P	80 - 120
Thallium	102		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378150

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378155

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378180

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378170

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.1		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377936

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

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378027

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: P377758

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P378913

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

Reference Method: EPA 8321B
 Batch ID: P377677

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	99.8		P	30 - 160
Acetaminophen	73.6		P	30 - 160
Acetamiprid	82.6		P	30 - 160
Afidopyropen	85.3		P	30 - 160
Bentazon	80.1		P	30 - 160
Benzovindiflupyr	87.1		P	30 - 160
Carbamazepine	98.4		P	30 - 160
Clothianidin	77.8		P	30 - 160
Dinotefuran	93.1		P	30 - 160
Diuron	77.5		P	30 - 160
Fenuron	102		P	30 - 160
Fluridone	92.4		P	30 - 160
Hydrocodone	83.2		P	30 - 160
Ibuprofen	81.9		P	30 - 160
Imazapyr	100		P	30 - 160
Imidacloprid	90.5		P	30 - 160
Linuron	80.0		P	30 - 160
Mandestrobin	91.2		P	30 - 160
MCPP	103		P	30 - 160
Naproxen	78.3		P	30 - 160
Primidone	76.8		P	30 - 160
Pyraclostrobin	98.8		P	30 - 160
Thiamethoxam	88.1		P	30 - 160
Tolfenpyrad	69.8		P	30 - 160
Triclopyr	76.7		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P377680

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	126		P	40 - 150
AMPA	85.5		P	40 - 150
Endothall	118		P	40 - 150
Glufosinate	89.6		P	40 - 150
Glyphosate	80.1		P	40 - 140
Sucralose	80.9		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P377717

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.2		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P377718

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.5		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P378050

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P378054

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.3		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377956

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151147	Barium	102	102	P/P	80 - 120
2151147	Calcium	101		P	80 - 120
2151147	Iron	103	103	P/P	80 - 120
2151147	Magnesium	97.8	96.5	P/P	80 - 120
2151147	Potassium	95.2	96.1	P/P	80 - 120
2151147	Sodium	98.4		P	80 - 120
2151147	Zinc	103	103	P/P	80 - 120
2151559	Barium	105		P	80 - 120
2151559	Calcium	105		P	80 - 120
2151559	Iron	106		P	80 - 120
2151559	Magnesium	108		P	80 - 120
2151559	Potassium	111		P	80 - 120
2151559	Sodium	103		P	80 - 120
2151559	Zinc	103		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151147	Aluminum	104	102	P/P	80 - 120
2151147	Antimony	108	107	P/P	80 - 120
2151147	Arsenic	106	106	P/P	80 - 120
2151147	Boron	101	100	P/P	80 - 120
2151147	Cadmium	106	106	P/P	80 - 120
2151147	Chromium	107	106	P/P	80 - 120
2151147	Copper	105	105	P/P	80 - 120
2151147	Lead	110	109	P/P	80 - 120
2151147	Nickel	104	103	P/P	80 - 120
2151147	Selenium	102	101	P/P	80 - 120
2151147	Silver	103	101	P/P	80 - 120
2151147	Thallium	105	105	P/P	80 - 120
2151559	Aluminum	100		P	80 - 120
2151559	Antimony	102		P	80 - 120
2151559	Arsenic	104		P	80 - 120
2151559	Boron	100		P	80 - 120
2151559	Cadmium	102		P	80 - 120
2151559	Chromium	103		P	80 - 120
2151559	Copper	106		P	80 - 120
2151559	Lead	108		P	80 - 120
2151559	Nickel	104		P	80 - 120
2151559	Selenium	99.8		P	80 - 120
2151559	Silver	102		P	80 - 120
2151559	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151408	Chloride	99.8		P	90 - 110
2151539	Chloride	101		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151408	Sulfate	101		P	90 - 110
2151539	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151199	Ammonia-N	97.1	95.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378170

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151489	Kjeldahl Nitrogen	103	113	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377936

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151467	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378027

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151547	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377758

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151490	O-Phosphate-P	96.3	97.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P378913

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2157518	O-Phosphate-P	98.1	98.6	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151184	2,4-D	120	101	P/P	30 - 160
2151184	Acetaminophen	87.9	76.0	P/P	30 - 160
2151184	Acetamiprid	92.7	86.4	P/P	30 - 160
2151184	Afidopyropen	102	92.1	P/P	30 - 160
2151184	Bentazon	49.3	48.2	P/P	30 - 160
2151184	Benzovindiflupyr	94.6	85.3	P/P	30 - 160
2151184	Carbamazepine	95.5	84.0	P/P	30 - 160
2151184	Clothianidin	87.4	84.6	P/P	30 - 160
2151184	Dinotefuran	120	102	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P377677

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151184	Diuron	72.0	59.2	P/P	30 - 160
2151184	Fenuron	100	90.9	P/P	30 - 160
2151184	Fluridone	95.8	84.6	P/P	30 - 160
2151184	Hydrocodone	110	96.3	P/P	30 - 160
2151184	Ibuprofen	61.2	70.9	P/P	30 - 160
2151184	Imazapyr	112	103	P/P	30 - 160
2151184	Imidacloprid	146	132	P/P	30 - 160
2151184	Linuron	76.2	60.3	P/P	30 - 160
2151184	Mandestrobin	95.6	84.0	P/P	30 - 160
2151184	MCPP	117	106	P/P	30 - 160
2151184	Naproxen	65.8	76.3	P/P	30 - 160
2151184	Primidone	109	93.1	P/P	30 - 160
2151184	Pyraclostrobin	105	94.0	P/P	30 - 160
2151184	Thiamethoxam	126	117	P/P	30 - 160
2151184	Tolfenpyrad	81.5	68.5	P/P	30 - 160
2151184	Triclopyr	110	88.2	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P377680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151558	Acesulfame K	41.2	41.2	P/P	40 - 150
2151558	AMPA	95.4	96.6	P/P	40 - 150
2151558	Endothall	125	130	P/P	40 - 150
2151558	Glufosinate	86.4	97.1	P/P	40 - 150
2151558	Glyphosate	68.0	72.5	P/P	40 - 140
2151558	Sucralose	82.5	82.3	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P378054

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152124	Fluoride	96.2	96.7	P/P	89 - 106

Reference Method: SM 5310 B-2011
Batch ID: P377956

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2151547	Organic Carbon	95.8	97.0	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377785

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151581	Turbidity	2.67	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P377724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151147	Barium	0.00280	Spike	P	0 - 20
2151147	Calcium	0.113	Spike	P	0 - 20
2151147	Iron	0.403	Spike	P	0 - 20
2151147	Magnesium	0.690	Spike	P	0 - 20
2151147	Potassium	0.554	Spike	P	0 - 20
2151147	Sodium	0.783	Spike	P	0 - 20
2151147	Zinc	0.550	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P377724

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151147	Aluminum	1.70	Spike	P	0 - 20
2151147	Antimony	1.40	Spike	P	0 - 20
2151147	Arsenic	0.173	Spike	P	0 - 20
2151147	Boron	0.593	Spike	P	0 - 20
2151147	Cadmium	0.0883	Spike	P	0 - 20
2151147	Chromium	0.716	Spike	P	0 - 20
2151147	Copper	0.225	Spike	P	0 - 20
2151147	Lead	1.07	Spike	P	0 - 20
2151147	Nickel	0.490	Spike	P	0 - 20
2151147	Selenium	0.830	Spike	P	0 - 20
2151147	Silver	1.40	Spike	P	0 - 20
2151147	Thallium	0.451	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151408	Chloride	0.701	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151408	Sulfate	0.930	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P378180

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151199	Ammonia-N	0.947	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P378170

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151489	Kjeldahl Nitrogen	9.19	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377936

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151467	NO2NO3-N	0.317	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P378027

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151547	Total-P	0.391	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377758

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151490	O-Phosphate-P	0.718	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P378913

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2157518	O-Phosphate-P	0.508	Spike	P	0 - 20

Reference Method: EPA 8321B
 Batch ID: P377677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151184	2,4-D	17.2	Spike	P	0 - 30
2151184	Acetaminophen	14.4	Spike	P	0 - 30
2151184	Acetamiprid	7.04	Spike	P	0 - 30
2151184	Afidopyropen	10.6	Spike	P	0 - 30
2151184	Bentazon	2.15	Spike	P	0 - 30
2151184	Benzovindiflupyr	10.4	Spike	P	0 - 30
2151184	Carbamazepine	12.8	Spike	P	0 - 30
2151184	Clothianidin	3.36	Spike	P	0 - 30
2151184	Dinotefuran	16.1	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P377677

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151184	Diuron	19.5	Spike	P	0 - 30
2151184	Fenuron	9.68	Spike	P	0 - 30
2151184	Fluridone	12.4	Spike	P	0 - 30
2151184	Hydrocodone	13.5	Spike	P	0 - 30
2151184	Ibuprofen	14.7	Spike	P	0 - 30
2151184	Imazapyr	8.31	Spike	P	0 - 30
2151184	Imidacloprid	10.0	Spike	P	0 - 30
2151184	Linuron	23.3	Spike	P	0 - 30
2151184	Mandestrobin	13.0	Spike	P	0 - 30
2151184	MCP	9.78	Spike	P	0 - 30
2151184	Naproxen	14.8	Spike	P	0 - 30
2151184	Primidone	15.7	Spike	P	0 - 30
2151184	Pyraclostrobin	11.0	Spike	P	0 - 30
2151184	Thiamethoxam	7.01	Spike	P	0 - 30
2151184	Tolfenpyrad	17.3	Spike	P	0 - 30
2151184	Triclopyr	21.9	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P377680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151558	Acesulfame K	0.0146	Spike	P	0 - 30
2151558	AMPA	1.24	Spike	P	0 - 30
2151558	Endothall	3.89	Spike	P	0 - 30
2151558	Glufosinate	11.7	Spike	P	0 - 30
2151558	Glyphosate	6.44	Spike	P	0 - 30
2151558	Sucralose	0.220	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P377717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151510	Color (true)	0.282	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P377718

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151567	Color (true)	2.24	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P378050

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152124	Total Alkalinity	0.844	Sample	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P378248

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151539	TDS	1.83	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P378274

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151567	TDS	9.02	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P378054

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152124	Fluoride	0.484	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377956

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2151547	Organic Carbon	1.12	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2151558

Field Sample ID: G3NW0135

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	155	P	30 - 160
EPA 8321B	Acetaminophen-d4	100	P	30 - 160
EPA 8321B	Carbamazepine-d10	110	P	30 - 160
EPA 8321B	Diuron-d6	85.1	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Endothall-d6	126	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	65.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	96.8	P	30 - 160
EPA 8321B	Primidone-d5	124	P	30 - 160
EPA 8321B	Sucralose-d6	82.9	P	30 - 160
EPA 8321B	Sucralose-d6	82.9	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A97115

Included Lab Sample IDs: 2151545, 2151546, 2151564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	99.3	P/P	90 - 115
Color (true)	99.2	99.1	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97136

Included Lab Sample IDs: 2151549, 2151550

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	98.5	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97142

Included Lab Sample IDs: 2151545, 2151546, 2151564

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97170

Included Lab Sample IDs: 2151545, 2151546, 2151564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.1	99.3	P/P	90 - 110
Sulfate	99.5	100	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A97177

Included Lab Sample IDs: 2151559, 2151560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	103	106	P/P	90 - 110
Calcium	101	98.9	P/P	90 - 110
Iron	102	99.5	P/P	90 - 110
Magnesium	102	99.6	P/P	90 - 110
Potassium	102	98.4	P/P	90 - 110
Sodium	101	97.5	P/P	90 - 110
Zinc	107	106	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97178

Included Lab Sample IDs: 2151558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	92.7	93.9	P/P	50 - 150
Acetaminophen	81.4	83.0	P/P	60 - 160
Acetamiprid	103	105	P/P	50 - 150
Afidopyropen	107	103	P/P	50 - 150
Bentazon	88.9	87.4	P/P	50 - 160
Benzovindiflupyr	115	111	P/P	50 - 150
Carbamazepine	95.1	91.2	P/P	60 - 150
Clothianidin	84.6	98.9	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97178
Included Lab Sample IDs: 2151558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Dinotefuran	98.6	96.6	P/P	50 - 150
Diuron	97.3	99.0	P/P	60 - 150
Fenuron	111	114	P/P	60 - 150
Fluridone	118	103	P/P	60 - 160
Hydrocodone	97.3	102	P/P	60 - 150
Ibuprofen	88.6	93.3	P/P	50 - 160
Imazapyr	108	115	P/P	50 - 150
Imidacloprid	95.3	94.7	P/P	60 - 150
Linuron	106	94.1	P/P	60 - 150
Mandestrobin	107	106	P/P	50 - 150
MCPP	108	88.8	P/P	50 - 150
Naproxen	124	101	P/P	50 - 160
Primidone	101	109	P/P	60 - 150
Pyraclostrobin	124	119	P/P	60 - 150
Thiamethoxam	94.2	104	P/P	50 - 150
Tolfenpyrad	128	134	P/P	60 - 150
Triclopyr	98.4	91.8	P/P	50 - 150

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A97186
Included Lab Sample IDs: 2151547, 2151548, 2151565

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

Reference Method: SM 5310 B-2011
Run ID: A97198
Included Lab Sample IDs: 2151547, 2151548, 2151565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.2	98.0	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A97203
Included Lab Sample IDs: 2151558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	144	64.7	P/P	60 - 160
Endothall	127	132	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A97204
Included Lab Sample IDs: 2151558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	80.9	82.1	P/P	60 - 160
Glufosinate	70.4	91.7	P/P	60 - 160
Glyphosate	75.4	77.6	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A97228

Included Lab Sample IDs: 2151545, 2151546, 2151564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	103	P/P	90 - 110
Total Alkalinity	101	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A97228

Included Lab Sample IDs: 2151545, 2151546, 2151564

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	99.5	101	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97264

Included Lab Sample IDs: 2151559, 2151560

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	97.7	97.8	P/P	90 - 110
Aluminum	98.8	97.7	P/P	90 - 110
Antimony	100	100	P/P	90 - 110
Antimony	100	100	P/P	90 - 110
Arsenic	100	101	P/P	90 - 110
Arsenic	99.7	100	P/P	90 - 110
Boron	104	103	P/P	90 - 110
Boron	105	104	P/P	90 - 110
Cadmium	97.9	97.9	P/P	90 - 110
Cadmium	97.9	98.1	P/P	90 - 110
Chromium	96.0	97.0	P/P	90 - 110
Chromium	96.4	96.0	P/P	90 - 110
Copper	97.2	98.6	P/P	90 - 110
Copper	97.8	97.2	P/P	90 - 110
Lead	102	103	P/P	90 - 110
Lead	103	102	P/P	90 - 110
Nickel	97.9	98.3	P/P	90 - 110
Nickel	98.8	97.9	P/P	90 - 110
Selenium	98.0	102	P/P	90 - 110
Selenium	99.3	98.0	P/P	90 - 110
Silver	98.3	98.8	P/P	90 - 110
Silver	99.0	98.3	P/P	90 - 110
Thallium	101	99.7	P/P	90 - 110
Thallium	99.7	98.8	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A97273

Included Lab Sample IDs: 2151558

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	84.1	89.2	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97280

Included Lab Sample IDs: 2151547, 2151548, 2151565

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97282

Included Lab Sample IDs: 2151547, 2151548, 2151565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	108	106	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97298

Included Lab Sample IDs: 2151547, 2151548, 2151565

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	103	P/P	90 - 110
Kjeldahl Nitrogen	98.7	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97529

Included Lab Sample IDs: 2151566

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.0	97.2	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						2.67	
EPA 200.7 Rev. 4.4	Barium	102	102	102	105			0.0028
	Calcium	100	101	105				0.113
	Iron	103	103	103	106			0.403
	Magnesium	104	97.8	96.5	108			0.690
	Potassium	101	95.2	96.1	111			0.554
	Sodium	99.8	98.4	103				0.783
	Zinc	102	103	103	103			0.550
EPA 200.8 Rev. 5.4	Aluminum	102	104	102	100			1.70
	Antimony	106	108	107	102			1.40
	Arsenic	104	106	106	104			0.173
	Boron	98.5	101	100	100			0.593
	Cadmium	104	106	106	102			0.0883
	Chromium	103	107	106	103			0.716
	Copper	105	105	105	106			0.225
	Lead	107	110	109	108			1.07
	Nickel	103	104	103	104			0.490
	Selenium	103	99.8	102	101			0.830
	Silver	104	103	101	102			1.40
	Thallium	102	105	105	103			0.451
EPA 300.0 Rev. 2.1	Chloride	99.4	99.8	101			0.701	
	Sulfate	101	101	101			0.930	
EPA 350.1 Rev. 2.0	Ammonia-N	97.7	97.1	95.5				0.947
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.1	103	113				9.19
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	100	99.5				0.317
EPA 365.1 Rev. 2.0	Total-P	104	107	107				0.391
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	102	96.3	97.2				0.718
	O-Phosphate-P	101	98.1	98.6				0.508
EPA 8321B	2,4-D	99.8	120	101				17.2
	Acesulfame K	126	41.2	41.2				0.0146
	Acetaminophen	73.6	76.0	87.9				14.4
	Acetamiprid	82.6	86.4	92.7				7.04
	Afidopyropen	85.3	92.1	102				10.6
	AMPA	85.5	95.4	96.6				1.24
	Bentazon	80.1	49.3	48.2				2.15
	Benzovindiflupyr	87.1	85.3	94.6				10.4
	Carbamazepine	98.4	84.0	95.5				12.8
	Clothianidin	77.8	84.6	87.4				3.36
	Dinotefuran	93.1	102	120				16.1
	Diuron	77.5	59.2	72.0				19.5
	Endothall	118	125	130				3.89
	Fenuron	102	90.9	100				9.68
	Fluridone	92.4	84.6	95.8				12.4
	Glufosinate	89.6	86.4	97.1				11.7
	Glyphosate	80.1	68.0	72.5				6.44
	Hydrocodone	83.2	96.3	110				13.5
	Ibuprofen	81.9	61.2	70.9				14.7
	Imazapyr	100	112	103				8.31
	Imidacloprid	90.5	132	146				10.0
	Linuron	80.0	60.3	76.2				23.3
	Mandestrobin	91.2	84.0	95.6				13.0
	MCPP	103	117	106				9.78
	Naproxen	78.3	65.8	76.3				14.8
	Primidone	76.8	93.1	109				15.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	98.8	94.0	105		11.0
	Sucralose	80.9	82.5	82.3		0.220
	Thiamethoxam	88.1	117	126		7.01
	Tolfenpyrad	69.8	68.5	81.5		17.3
	Triclopyr	76.7	110	88.2		21.9
SM 2120 B-2011	Color (true)	99.2			0.282	
	Color (true)	98.5			2.24	
SM 2320 B-2011	Total Alkalinity	103			0.844	
SM 2540 C-2011	TDS				1.83	
	TDS				9.02	
SM 4500 F-C-2011	Fluoride	96.3	96.2	96.7		0.484
SM 5310 B-2011	Organic Carbon	99.2	95.8	97.0		1.12

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2151545, 2151546, 2151564
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2151559, 2151560
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2151559, 2151560
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2151545, 2151546, 2151564
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2151545, 2151546, 2151564
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2151547, 2151548, 2151565
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2151547, 2151548, 2151565
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2151547, 2151548, 2151565
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2151547, 2151548, 2151565
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2151549, 2151550, 2151566
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2151558
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2151558
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2151545, 2151546, 2151564
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2151545, 2151546, 2151564
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2151545, 2151546, 2151564
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2151545, 2151546, 2151564
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2151545, 2151546, 2151564
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2151547, 2151548, 2151565

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	01/24/2020			01/24/2020 16:34	Yen Ta	2151545, 2151546, 2151564
EPA 200.7 Rev. 4.4	01/24/2020	01/27/2020 14:00	Elliott D. Healy	01/29/2020 16:57	Betina Topolski	2151559
	01/24/2020	01/27/2020 14:00	Elliott D. Healy	01/29/2020 17:16	Betina Topolski	2151560
EPA 200.8 Rev. 5.4	01/24/2020	01/27/2020 14:00	Elliott D. Healy	02/01/2020 03:25	Alexander Thompson	2151559
	01/24/2020	01/27/2020 14:00	Elliott D. Healy	02/01/2020 04:52	Alexander Thompson	2151560
EPA 300.0 Rev. 2.1	01/24/2020			01/30/2020 19:33	Lipi Saha	2151545
	01/24/2020			01/30/2020 19:45	Lipi Saha	2151546
	01/24/2020			01/30/2020 19:57	Lipi Saha	2151564
EPA 350.1 Rev. 2.0	01/24/2020			02/03/2020 13:37	Ping Hua	2151547
	01/24/2020			02/03/2020 13:38	Ping Hua	2151548
	01/24/2020			02/03/2020 13:40	Ping Hua	2151565
EPA 351.2 Rev. 2.0	01/24/2020	02/03/2020 11:45	Jhamieka S. Greenwood	02/04/2020 11:11	Jhamieka S. Greenwood	2151547
	01/24/2020	02/03/2020 11:45	Jhamieka S. Greenwood	02/04/2020 11:12	Jhamieka S. Greenwood	2151548
	01/24/2020	02/03/2020 11:45	Jhamieka S. Greenwood	02/04/2020 11:17	Jhamieka S. Greenwood	2151565
EPA 353.2 Rev. 2.0	01/24/2020			01/29/2020 09:55	Beverly Y. Sanders	2151547
	01/24/2020			01/29/2020 09:56	Beverly Y. Sanders	2151548
	01/24/2020			01/29/2020 09:57	Beverly Y. Sanders	2151565
EPA 365.1 Rev. 2.0	01/24/2020	01/30/2020 14:58	Yen Ta	02/03/2020 12:17	Benjamin T. Nordmann	2151547
	01/24/2020	01/30/2020 14:58	Yen Ta	02/03/2020 12:18	Benjamin T. Nordmann	2151548, 2151565
EPA 365.1 Rev. 2.0 dissolved	01/24/2020			01/24/2020 16:43	Carlos Miranda	2151549
	01/24/2020			01/24/2020 16:44	Carlos Miranda	2151550
	01/24/2020			02/13/2020 16:45	Carlos Miranda	2151566
EPA 8321B	01/24/2020	01/27/2020 09:00	Hoor Shaik	01/30/2020 00:24	Juyoung Kim	2151558
	01/24/2020	01/28/2020 11:00	Rebecca Ware	01/28/2020 11:16	Rebecca Ware	2151558
	01/24/2020	01/28/2020 11:30	Rebecca Ware	01/28/2020 16:49	Rebecca Ware	2151558
	01/24/2020	01/28/2020 11:30	Rebecca Ware	01/30/2020 01:37	Rebecca Ware	2151558
SM 2120 B-2011	01/24/2020			01/24/2020 17:25	Madeline Funaro	2151545
	01/24/2020			01/24/2020 17:26	Madeline Funaro	2151546
	01/24/2020			01/24/2020 17:30	Madeline Funaro	2151564
SM 2320 B-2011	01/24/2020			01/29/2020 22:19	Dale L. Simmons	2151545
	01/24/2020			01/29/2020 22:33	Dale L. Simmons	2151546
	01/24/2020			01/29/2020 23:34	Dale L. Simmons	2151564
SM 2540 C-2011	01/24/2020			01/27/2020 16:10	Sima Feizi	2151545, 2151546
	01/24/2020			01/29/2020 17:00	Blanca Fach	2151564
SM 2540 D-2011	01/24/2020			01/27/2020 16:10	Sima Feizi	2151545, 2151546
	01/24/2020			01/29/2020 17:00	Blanca Fach	2151564
SM 4500 F-C-2011	01/24/2020			01/29/2020 22:19	Dale L. Simmons	2151545
	01/24/2020			01/29/2020 22:33	Dale L. Simmons	2151546
	01/24/2020			01/29/2020 23:34	Dale L. Simmons	2151564
SM 5310 B-2011	01/24/2020			01/29/2020 16:41	Madeline Funaro	2151547

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/24/2020			01/29/2020 17:34	Madeline Funaro	2151548
	01/24/2020			01/29/2020 18:12	Madeline Funaro	2151565