

Chemical Analysis Report

NW-DIST-2020-03-05-02

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

Event Description: **Defuniak Run**
Request ID: **RQ-2020-03-02-35**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 25-MAR-2020 16:45



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: Bay Branch upstream of Hwy 331

Collection Date/Time: 03/04/2020 09:40

Field ID: G3NW0171

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162623	EPA 180.1 Rev. 2.0	Turbidity	5.1		NTU	P380143	
	EPA 300.0 Rev. 2.1	Chloride	3.9		mg Cl/L	P380494	
		Sulfate	2.3		mg SO4/L	P380496	
		Color (true)	77		PCU	P380148	
	SM 2120 B-2011	Total Alkalinity	6.1		mg CaCO3/L	P380749	
	SM 2540 C-2011	TDS	37		mg/L	P380815	
	SM 2540 D-2011	TSS	2	I	mg/L	P380804	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380713	
2162625	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P380611	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P380340	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P380599	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P380490	
	SM 5310 B-2011	Organic Carbon	6.7		mg C/L	P380350	
2162627	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380150	
2162658	EPA 200.7 Rev. 4.4	Barium	12.2		ug/L	P380311	
		Calcium	3.25		mg/L	P380311	
		Iron	430		ug/L	P380311	
		Magnesium	0.81		mg/L	P380311	
		Potassium	0.36	I	mg/L	P380311	
		Sodium	2.6		mg/L	P380311	
		Zinc	6.4	I	ug/L	P380311	
	EPA 200.8 Rev. 5.4	Aluminum	338		ug/L	P380311	
		Antimony	0.050	U	ug/L	P380311	
		Arsenic	0.26		ug/L	P380311	
		Boron**	8.8		ug/L	P380311	
		Cadmium	0.020	U	ug/L	P380311	
		Chromium	0.48	I	ug/L	P380311	
		Copper	0.40	U	ug/L	P380311	
		Lead	0.28	I	ug/L	P380311	
		Nickel	0.50	U	ug/L	P380311	
		Selenium	0.20	U	ug/L	P380311	
		Silver	0.010	U	ug/L	P380311	
		Thallium	0.10	U	ug/L	P380311	
		Hardness	11.5		mg/L	P380311	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Panther Creek upstream of SR280

Collection Date/Time: 03/04/2020 10:10

Field ID: G3NW0061

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162624	EPA 180.1 Rev. 2.0	Turbidity	4.2		NTU	P380143	
	EPA 300.0 Rev. 2.1	Chloride	3.5		mg Cl/L	P380494	
		Sulfate	1.7		mg SO4/L	P380496	
		Color (true)	39		PCU	P380148	
	SM 2120 B-2011	Total Alkalinity	1.4	I	mg CaCO3/L	P380749	
	SM 2540 C-2011	TDS	23	I	mg/L	P380815	
	SM 2540 D-2011	TSS	2	I	mg/L	P380804	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P380713	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P380611	
		Kjeldahl Nitrogen	0.17	I	mg N/L	P380340	
2162626	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P380599	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P380490	
	SM 5310 B-2011	Organic Carbon	3.9		mg C/L	P380350	
2162628	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P380150	
2162659	EPA 200.7 Rev. 4.4	Barium	12.2		ug/L	P380311	
		Calcium	1.10		mg/L	P380311	
		Iron	300		ug/L	P380311	
		Magnesium	0.59		mg/L	P380311	
		Potassium	0.34	I	mg/L	P380311	
		Sodium	2.3		mg/L	P380311	
		Zinc	5.0	U	ug/L	P380311	
	EPA 200.8 Rev. 5.4	Aluminum	320		ug/L	P380311	
		Antimony	0.050	U	ug/L	P380311	
		Arsenic	0.20		ug/L	P380311	
		Boron**	6.9	I	ug/L	P380311	
		Cadmium	0.020	U	ug/L	P380311	
		Chromium	0.42	I	ug/L	P380311	
		Copper	0.40	U	ug/L	P380311	
		Lead	0.20	U	ug/L	P380311	
		Nickel	0.50	U	ug/L	P380311	
		Selenium	0.20	U	ug/L	P380311	
	SM 2340B	Silver	0.010	U	ug/L	P380311	
		Thallium	0.10	U	ug/L	P380311	
		Hardness	5.2		mg/L	P380311	

Ref. Method and Comment:

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

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: HUCKLEBERRY CREEK

Collection Date/Time: 03/04/2020 11:05

Field ID: G3NW0135

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2162642	EPA 8321B	2,4-D	0.0026	I	ug/L	P380348	
		Acesulfame K**	0.10	U	ug/L	P380245	MS
		AMPA**	0.10	U	ug/L	P380245	
		Sucralose**	0.070		ug/L	P380245	
		Acetaminophen**	0.0080	U	ug/L	P380348	
		Acetamiprid**	0.0020	U	ug/L	P380348	
		Endothall**	0.25	U	ug/L	P380245	
		Glufosinate**	0.10	U	ug/L	P380245	
		Glyphosate**	0.10	U	ug/L	P380245	
		Afidopyropen**	0.0020	UJ	ug/L	P380348	
		Bentazon	8.0E-04	U	ug/L	P380348	
		Benzovindiflupyr**	0.0020	UJ	ug/L	P380348	
		Carbamazepine**	8.0E-04	U	ug/L	P380348	
		Clothianidin**	0.0020	U	ug/L	P380348	
		Dinotefuran**	0.0020	U	ug/L	P380348	
		Diuron	0.0020	U	ug/L	P380348	
		Fenuron	0.016	U	ug/L	P380348	
		Fluridone**	8.0E-04	U	ug/L	P380348	
		Imazapyr**	0.0040	U	ug/L	P380348	
		Hydrocodone**	0.0020	U	ug/L	P380348	
		Ibuprofen**	0.020	U	ug/L	P380348	
		Imidacloprid	0.0025	I	ug/L	P380348	MS
		Linuron	0.0040	U	ug/L	P380348	
		Mandestrobin**	0.0020	UJ	ug/L	P380348	
		MCPP	0.0020	U	ug/L	P380348	
		Naproxen**	0.0080	U	ug/L	P380348	
		Primidone**	0.0040	U	ug/L	P380348	
		Pyraclostrobin**	0.0020	U	ug/L	P380348	
		Thiamethoxam**	0.0020	U	ug/L	P380348	MS
		Tolfenpyrad**	0.0020	U	ug/L	P380348	
		Triclopyr**	0.0040	U	ug/L	P380348	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380143

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

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: P380311

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: P380494

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380496

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380611

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: P380340

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380599

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380490

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380150

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

Reference Method: EPA 8321B
Batch ID: P380245

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: P380348

Component	Result	Code	Units
2,4-D	0.0020	U	ug/L
Acetaminophen	0.0080	U	ug/L
Acetamiprid	0.0020	U	ug/L
Afidopyrophen	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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P380348

Component	Result	Code	Units
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
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: P380148

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P380749

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

Reference Method: SM 2540 C-2011
Batch ID: P380815

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P380804

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P380713

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P380350

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: P380311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	98.4		P	85 - 115
Iron	99.4		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	96.2		P	85 - 115
Sodium	94.8		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	96.6		P	85 - 115
Antimony	90.0		P	85 - 115
Arsenic	98.1		P	85 - 115
Boron	97.3		P	85 - 115
Cadmium	95.3		P	85 - 115
Chromium	97.2		P	85 - 115
Copper	101		P	85 - 115
Lead	92.6		P	85 - 115
Nickel	99.0		P	85 - 115
Selenium	96.7		P	85 - 115
Silver	97.5		P	85 - 115
Thallium	97.0		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380494

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380496

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380611

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380340

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.0		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380599

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380490

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: P380150

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

Reference Method: EPA 8321B
Batch ID: P380245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	76.1		P	40 - 150
AMPA	95.4		P	40 - 150
Endothall	139		P	40 - 150
Glufosinate	117		P	40 - 150
Glyphosate	110		P	40 - 140
Sucralose	94.2		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	104		P	30 - 160
Acetaminophen	85.2		P	30 - 160
Acetamiprid	93.8		P	30 - 160
Afidopyropen	88.2		P	30 - 160
Bentazon	81.6		P	30 - 160
Benzovindiflupyr	83.2		P	30 - 160
Carbamazepine	100		P	30 - 160
Clothianidin	88.5		P	30 - 160
Dinotefuran	82.0		P	30 - 160
Diuron	91.6		P	30 - 160
Fenuron	92.0		P	30 - 160
Fluridone	80.9		P	30 - 160
Hydrocodone	90.5		P	30 - 160
Ibuprofen	84.1		P	30 - 160
Imazapyr	112		P	30 - 160
Imidacloprid	100		P	30 - 160
Linuron	78.3		P	30 - 160
Mandestrobin	77.6		P	30 - 160
MCPP	94.5		P	30 - 160
Naproxen	83.8		P	30 - 160
Primidone	98.0		P	30 - 160
Pyraclostrobin	77.6		P	30 - 160
Thiamethoxam	96.2		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P380348

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Tolfenpyrad	62.2		P	30 - 160
Triclopyr	116		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P380148

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	101		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P380749

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

Reference Method: SM 4500 F-C-2011
Batch ID: P380713

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.2		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P380350

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.9		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162490	Barium	102		P	80 - 120
2162490	Calcium	99.0		P	80 - 120
2162490	Iron	103		P	80 - 120
2162490	Magnesium	101		P	80 - 120
2162490	Potassium	94.4		P	80 - 120
2162490	Sodium	97.0		P	80 - 120
2162490	Zinc	103		P	80 - 120
2162659	Barium	103	103	P/P	80 - 120
2162659	Calcium	100	100	P/P	80 - 120
2162659	Iron	102	104	P/P	80 - 120
2162659	Magnesium	104	104	P/P	80 - 120
2162659	Potassium	96.1	97.6	P/P	80 - 120
2162659	Sodium	93.6	92.6	P/P	80 - 120
2162659	Zinc	105	105	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162490	Aluminum	97.4		P	80 - 120
2162490	Antimony	90.3		P	80 - 120
2162490	Arsenic	99.9		P	80 - 120
2162490	Boron	95.8		P	80 - 120
2162490	Cadmium	97.1		P	80 - 120
2162490	Chromium	98.8		P	80 - 120
2162490	Copper	105		P	80 - 120
2162490	Lead	94.0		P	80 - 120
2162490	Nickel	104		P	80 - 120
2162490	Selenium	100		P	80 - 120
2162490	Silver	97.6		P	80 - 120
2162490	Thallium	105		P	80 - 120
2162659	Aluminum	93.0	91.8	P/P	80 - 120
2162659	Antimony	89.4	90.0	P/P	80 - 120
2162659	Arsenic	97.4	97.5	P/P	80 - 120
2162659	Boron	94.9	95.6	P/P	80 - 120
2162659	Cadmium	96.9	96.5	P/P	80 - 120
2162659	Chromium	95.8	96.5	P/P	80 - 120
2162659	Copper	102	101	P/P	80 - 120
2162659	Lead	93.1	92.4	P/P	80 - 120
2162659	Nickel	99.9	99.9	P/P	80 - 120
2162659	Selenium	96.4	94.5	P/P	80 - 120
2162659	Silver	95.5	95.5	P/P	80 - 120
2162659	Thallium	95.6	97.6	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162608	Chloride	96.9		P	90 - 110
2162652	Chloride	96.4		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162608	Sulfate	96.6		P	90 - 110
2162652	Sulfate	97.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380611

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162626	Ammonia-N	97.7	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380340

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162883	Kjeldahl Nitrogen	96.3	93.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162612	NO2NO3-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380490

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162562	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380150

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162627	O-Phosphate-P	103	106	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P380245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162569	Acesulfame K	21.6	22.9	F/F	40 - 150
2162569	AMPA	82.5	89.5	P/P	40 - 150
2162569	Endothall	139	149	P/P	40 - 150
2162569	Glufosinate	102	95.0	P/P	40 - 150
2162569	Glyphosate	73.1	84.4	P/P	40 - 140
2162569	Sucralose	104	81.4	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P380348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163209	2,4-D	110	105	P/P	30 - 160
2163209	Acetaminophen	93.0	90.7	P/P	30 - 160
2163209	Acetamiprid	103	86.8	P/P	30 - 160
2163209	Afidopyropen	103	99.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P380348

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2163209	Bentazon	54.9	52.8	P/P	30 - 160
2163209	Benzovindiflupyr	82.2	79.7	P/P	30 - 160
2163209	Carbamazepine	94.2	96.7	P/P	30 - 160
2163209	Clothianidin	128	132	P/P	30 - 160
2163209	Dinotefuran	115	119	P/P	30 - 160
2163209	Diuron	86.6	83.0	P/P	30 - 160
2163209	Fenuron	75.0	76.4	P/P	30 - 160
2163209	Fluridone	81.3	74.4	P/P	30 - 160
2163209	Hydrocodone	103	79.3	P/P	30 - 160
2163209	Ibuprofen	80.4	75.6	P/P	30 - 160
2163209	Imazapyr	95.4	123	P/P	30 - 160
2163209	Imidacloprid	185	150	F/P	30 - 160
2163209	Linuron	83.1	80.4	P/P	30 - 160
2163209	Mandestrobin	76.1	75.5	P/P	30 - 160
2163209	MCPP	103	97.5	P/P	30 - 160
2163209	Naproxen	90.9	84.2	P/P	30 - 160
2163209	Primidone	98.0	104	P/P	30 - 160
2163209	Pyraclostrobin	80.7	78.4	P/P	30 - 160
2163209	Thiamethoxam	169	156	F/P	30 - 160
2163209	Tolfenpyrad	59.8	64.0	P/P	30 - 160
2163209	Triclopyr	125	105	P/P	30 - 160

Reference Method: SM 5310 B-2011
Batch ID: P380350

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2162626	Organic Carbon	99.9	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P380143

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162611	Turbidity	1.24	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P380311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162659	Barium	0.0822	Spike	P	0 - 20
2162659	Calcium	0.0701	Spike	P	0 - 20
2162659	Iron	1.58	Spike	P	0 - 20
2162659	Magnesium	0.531	Spike	P	0 - 20
2162659	Potassium	1.44	Spike	P	0 - 20
2162659	Sodium	0.652	Spike	P	0 - 20
2162659	Zinc	0.304	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P380311

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162659	Aluminum	0.917	Spike	P	0 - 20
2162659	Antimony	0.674	Spike	P	0 - 20
2162659	Arsenic	0.0432	Spike	P	0 - 20
2162659	Boron	0.713	Spike	P	0 - 20
2162659	Cadmium	0.429	Spike	P	0 - 20
2162659	Chromium	0.725	Spike	P	0 - 20
2162659	Copper	0.949	Spike	P	0 - 20
2162659	Lead	0.773	Spike	P	0 - 20
2162659	Nickel	0.0115	Spike	P	0 - 20
2162659	Selenium	2.05	Spike	P	0 - 20
2162659	Silver	0.0103	Spike	P	0 - 20
2162659	Thallium	2.04	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Chloride	1.31	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P380496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	Sulfate	1.29	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P380611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162626	Ammonia-N	3.48	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P380340

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162883	Kjeldahl Nitrogen	1.56	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P380599

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162612	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P380490

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162562	Total-P	1.54	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P380150

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162627	O-Phosphate-P	2.87	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P380245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162569	Acesulfame K	5.56	Spike	P	0 - 30
2162569	AMPA	6.45	Spike	P	0 - 30
2162569	Endothall	7.17	Spike	P	0 - 30
2162569	Glufosinate	7.19	Spike	P	0 - 30
2162569	Glyphosate	9.27	Spike	P	0 - 30
2162569	Sucralose	23.3	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P380348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163209	2,4-D	4.35	Spike	P	0 - 30
2163209	Acetaminophen	2.42	Spike	P	0 - 30
2163209	Acetamiprid	16.8	Spike	P	0 - 30
2163209	Afidopyropen	3.95	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P380348

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163209	Bentazon	3.92	Spike	P	0 - 30
2163209	Benzovindiflupyr	3.13	Spike	P	0 - 30
2163209	Carbamazepine	2.59	Spike	P	0 - 30
2163209	Clothianidin	3.43	Spike	P	0 - 30
2163209	Dinotefuran	3.36	Spike	P	0 - 30
2163209	Diuron	4.31	Spike	P	0 - 30
2163209	Fenuron	1.87	Spike	P	0 - 30
2163209	Fluridone	8.86	Spike	P	0 - 30
2163209	Hydrocodone	25.9	Spike	P	0 - 30
2163209	Ibuprofen	6.22	Spike	P	0 - 30
2163209	Imazapyr	25.4	Spike	P	0 - 30
2163209	Imidacloprid	20.6	Spike	P	0 - 30
2163209	Linuron	3.24	Spike	P	0 - 30
2163209	Mandestrobin	0.825	Spike	P	0 - 30
2163209	MCP	5.29	Spike	P	0 - 30
2163209	Naproxen	7.61	Spike	P	0 - 30
2163209	Primidone	5.48	Spike	P	0 - 30
2163209	Pyraclostrobin	2.82	Spike	P	0 - 30
2163209	Thiamethoxam	7.88	Spike	P	0 - 30
2163209	Tolfenpyrad	6.82	Spike	P	0 - 30
2163209	Triclopyr	18.0	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P380148

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162644	Color (true)	0.448	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P380749

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163041	Total Alkalinity	0.206	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P380815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162608	TDS	5.32	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P380713

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2163041	Fluoride	0.457	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P380350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2162626	Organic Carbon	1.33	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2162642
Field Sample ID: G3NW0135

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	103	P	30 - 160
EPA 8321B	Acetaminophen-d4	78.4	P	30 - 160
EPA 8321B	Carbamazepine-d10	95.4	P	30 - 160
EPA 8321B	Diuron-d6	90.5	P	30 - 160
EPA 8321B	Endothall-d6	141	P	30 - 160
EPA 8321B	Endothall-d6	141	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	108	P	30 - 160
EPA 8321B	Ibuprofen-d3	68.2	P	30 - 160
EPA 8321B	Primidone-d5	94.5	P	30 - 160
EPA 8321B	Sucralose-d6	97.4	P	30 - 160
EPA 8321B	Sucralose-d6	97.4	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A98022

Included Lab Sample IDs: 2162623, 2162624

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A98023

Included Lab Sample IDs: 2162627, 2162628

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	103	104	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A98024

Included Lab Sample IDs: 2162623, 2162624

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A98096

Included Lab Sample IDs: 2162623, 2162624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.9	97.8	P/P	90 - 110
Sulfate	99.6	98.3	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A98099

Included Lab Sample IDs: 2162625, 2162626

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A98104

Included Lab Sample IDs: 2162658, 2162659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	101	102	P/P	90 - 110
Calcium	99.9	98.7	P/P	90 - 110
Iron	103	102	P/P	90 - 110
Magnesium	102	101	P/P	90 - 110
Potassium	101	98.9	P/P	90 - 110
Sodium	98.7	96.8	P/P	90 - 110
Zinc	102	101	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A98125

Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	97.6	84.7	P/P	40 - 200

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A98125
Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Glufosinate	123	114	P/P	40 - 200
Glyphosate	114	116	P/P	40 - 200

Reference Method: EPA 8321B
Run ID: A98129
Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	82.4	79.7	P/P	60 - 160
Endothall	127	115	P/P	60 - 160

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A98137
Included Lab Sample IDs: 2162658, 2162659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	101	98.4	P/P	90 - 110
Aluminum	102	99.3	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Arsenic	99.6	99.9	P/P	90 - 110
Boron	100	99.3	P/P	90 - 110
Boron	99.3	96.6	P/P	90 - 110
Cadmium	95.8	96.6	P/P	90 - 110
Cadmium	96.4	96.1	P/P	90 - 110
Chromium	96.0	97.3	P/P	90 - 110
Chromium	96.7	97.2	P/P	90 - 110
Copper	102	101	P/P	90 - 110
Copper	102	99.8	P/P	90 - 110
Lead	95.4	96.0	P/P	90 - 110
Lead	95.4	95.7	P/P	90 - 110
Nickel	102	102	P/P	90 - 110
Nickel	103	99.7	P/P	90 - 110
Selenium	97.2	99.1	P/P	90 - 110
Selenium	98.9	97.1	P/P	90 - 110
Silver	94.2	94.3	P/P	90 - 110
Silver	94.8	94.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A98141
Included Lab Sample IDs: 2162625, 2162626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	96.6	P/P	90 - 110

Reference Method: EPA 8321B
Run ID: A98160
Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	100	97.5	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98172

Included Lab Sample IDs: 2162658, 2162659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Thallium	90.6	91.0	P/P	90 - 110
Thallium	91.4	90.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A98176

Included Lab Sample IDs: 2162625, 2162626

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A98179

Included Lab Sample IDs: 2162625, 2162626

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A98197

Included Lab Sample IDs: 2162658, 2162659

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	91.1	92.7	P/P	90 - 110
Antimony	91.7	90.9	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A98211

Included Lab Sample IDs: 2162625, 2162626

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

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	85.5	75.4	P/P	50 - 150
Acetaminophen	111	90.4	P/P	60 - 160
Acetamiprid	103	111	P/P	50 - 150
Afidopyropen	116	122	P/P	50 - 150
Bentazon	122	129	P/P	50 - 160
Benzovindiflupyr	112	106	P/P	50 - 150
Carbamazepine	107	113	P/P	60 - 150
Clothianidin	123	82.4	P/P	60 - 150
Dinotefuran	96.7	93.7	P/P	50 - 150
Diuron	99.2	111	P/P	60 - 150
Fenuron	107	107	P/P	60 - 150
Fluridone	99.0	102	P/P	60 - 160
Hydrocodone	106	92.5	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A98214

Included Lab Sample IDs: 2162642

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ibuprofen	81.4	97.6	P/P	50 - 160
Imazapyr	119	104	P/P	50 - 150
Imidacloprid	106	102	P/P	60 - 150
Linuron	109	112	P/P	60 - 150
Mandestrobin	93.0	95.2	P/P	50 - 150
MCPP	74.0	80.6	P/P	50 - 150
Naproxen	101	99.3	P/P	50 - 160
Primidone	98.2	93.4	P/P	60 - 150
Pyraclostrobin	102	95.0	P/P	60 - 150
Thiamethoxam	110	111	P/P	50 - 150
Tolfenpyrad	116	114	P/P	60 - 150
Triclopyr	104	112	P/P	50 - 150

Reference Method: SM 4500 F-C-2011

Run ID: A98215

Included Lab Sample IDs: 2162623, 2162624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A98231

Included Lab Sample IDs: 2162623, 2162624

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	100	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								1.24	
EPA 200.7 Rev. 4.4	Barium	101			102	103	103			0.0822
	Calcium	98.4			99.0	100	100			0.0701
	Iron	99.4			103	102	104			1.58
	Magnesium	100			101	104	104			0.531
	Potassium	96.2			94.4	96.1	97.6			1.44
	Sodium	94.8			97.0	93.6	92.6			0.652
	Zinc	102			103	105	105			0.304
EPA 200.8 Rev. 5.4	Aluminum	96.6			93.0	91.8	97.4			0.917
	Antimony	90.0			89.4	90.0	90.3			0.674
	Arsenic	98.1			97.4	97.5	99.9			0.0432
	Boron	97.3			94.9	95.6	95.8			0.713
	Cadmium	95.3			96.9	96.5	97.1			0.429
	Chromium	97.2			95.8	96.5	98.8			0.725
	Copper	101			102	101	105			0.949
	Lead	92.6			93.1	92.4	94.0			0.773
	Nickel	99.0			99.9	99.9	104			0.0115
	Selenium	96.7			96.4	94.5	100			2.05
	Silver	97.5			95.5	95.5	97.6			0.0103
	Thallium	97.0			95.6	97.6	105			2.04
EPA 300.0 Rev. 2.1	Chloride	98.6			96.9	96.4			1.31	
	Sulfate	98.3			96.6	97.8			1.29	
EPA 350.1 Rev. 2.0	Ammonia-N	101			97.7	101				3.48
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.0			96.3	93.2				1.56
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.5			99.0	99.0				0.0
EPA 365.1 Rev. 2.0	Total-P	104			103	105				1.54
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104			103	106				2.87
EPA 8321B	2,4-D	104			110	105				4.35
	Acesulfame K	76.1			21.6	22.9				5.56
	Acetaminophen	85.2			93.0	90.7				2.42
	Acetamiprid	93.8			103	86.8				16.8
	Afidopyropen	88.2			103	99.3				3.95
	AMPA	95.4			82.5	89.5				6.45
	Bentazon	81.6			54.9	52.8				3.92
	Benzovindiflupyr	83.2			82.2	79.7				3.13
	Carbamazepine	100			94.2	96.7				2.59
	Clothianidin	88.5			128	132				3.43
	Dinotefuran	82.0			115	119				3.36
	Diuron	91.6			86.6	83.0				4.31
	Endothall	139			139	149				7.17
	Fenuron	92.0			75.0	76.4				1.87
	Fluridone	80.9			81.3	74.4				8.86
	Glufosinate	117			102	95.0				7.19
	Glyphosate	110			73.1	84.4				9.27
	Hydrocodone	90.5			103	79.3				25.9
	Ibuprofen	84.1			80.4	75.6				6.22
	Imazapyr	112			95.4	123				25.4
	Imidacloprid	100			185	150				20.6
	Linuron	78.3			83.1	80.4				3.24
	Mandestrobin	77.6			76.1	75.5				0.825
	MCPP	94.5			103	97.5				5.29
	Naproxen	83.8			90.9	84.2				7.61
	Primidone	98.0			98.0	104				5.48
	Pyraclostrobin	77.6			80.7	78.4				2.82

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Sucralose	94.2	104	81.4		23.3
	Thiamethoxam	96.2	169	156		7.88
	Tolfenpyrad	62.2	59.8	64.0		6.82
	Triclopyr	116	125	105		18.0
SM 2120 B-2011	Color (true)	101			0.448	
SM 2320 B-2011	Total Alkalinity	103			0.206	
SM 2540 C-2011	TDS				5.32	
SM 4500 F-C-2011	Fluoride	97.2				0.457
SM 5310 B-2011	Organic Carbon	98.9	99.9	102		1.33

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2162623, 2162624
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2162658, 2162659
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2162658, 2162659
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2162623, 2162624
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2162623, 2162624
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2162625, 2162626
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2162625, 2162626
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2162625, 2162626
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2162625, 2162626
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2162627, 2162628
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2162642
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2162642
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2162623, 2162624
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2162623, 2162624
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2162658, 2162659
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2162623, 2162624
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2162623, 2162624
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2162623, 2162624
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2162625, 2162626

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	03/05/2020			03/05/2020 16:10	Yen Ta	2162623, 2162624
EPA 200.7 Rev. 4.4	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/10/2020 16:55	Vijayalakshmi Reddy	2162658
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/10/2020 17:01	Vijayalakshmi Reddy	2162659
EPA 200.8 Rev. 5.4	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/11/2020 22:21	Alexander Thompson	2162659
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 00:48	Alexander Thompson	2162658
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 20:27	Alexander Thompson	2162659
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/12/2020 21:48	Alexander Thompson	2162658
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/13/2020 14:53	Justin Cutchin	2162659
	03/05/2020	03/09/2020 17:00	Elliott D. Healy	03/13/2020 16:55	Justin Cutchin	2162658
EPA 300.0 Rev. 2.1	03/05/2020			03/11/2020 16:09	Lipi Saha	2162623
	03/05/2020			03/11/2020 16:21	Lipi Saha	2162624
EPA 350.1 Rev. 2.0	03/05/2020			03/10/2020 14:35	Ping Hua	2162626
	03/05/2020			03/10/2020 14:46	Ping Hua	2162625
EPA 351.2 Rev. 2.0	03/05/2020	03/10/2020 12:43	Sima Feizi	03/11/2020 18:06	Jhamieka S. Greenwood	2162625
	03/05/2020	03/10/2020 12:43	Sima Feizi	03/11/2020 18:08	Jhamieka S. Greenwood	2162626
EPA 353.2 Rev. 2.0	03/05/2020			03/11/2020 10:41	Beverly Y. Sanders	2162625
	03/05/2020			03/11/2020 10:42	Beverly Y. Sanders	2162626
EPA 365.1 Rev. 2.0	03/05/2020	03/11/2020 14:54	Yen Ta	03/13/2020 15:36	Benjamin T. Nordmann	2162625
	03/05/2020	03/11/2020 14:54	Yen Ta	03/13/2020 15:37	Benjamin T. Nordmann	2162626
EPA 365.1 Rev. 2.0 dissolved	03/05/2020			03/05/2020 16:18	Carlos Miranda	2162627
	03/05/2020			03/05/2020 16:24	Carlos Miranda	2162628
EPA 8321B	03/05/2020	03/09/2020 12:00	Rebecca Ware	03/09/2020 19:51	Rebecca Ware	2162642
	03/05/2020	03/09/2020 12:00	Rebecca Ware	03/10/2020 13:07	Rebecca Ware	2162642
	03/05/2020	03/09/2020 12:00	Rebecca Ware	03/12/2020 00:45	Rebecca Ware	2162642
	03/05/2020	03/11/2020 09:00	Hoor Shaik	03/14/2020 14:24	Juyoung Kim	2162642
SM 2120 B-2011	03/05/2020			03/05/2020 17:07	Madeline Gruver	2162623
	03/05/2020			03/05/2020 17:08	Madeline Gruver	2162624
SM 2320 B-2011	03/05/2020			03/16/2020 20:30	Dale L. Simmons	2162623
	03/05/2020			03/16/2020 20:39	Dale L. Simmons	2162624
SM 2340B	03/05/2020			03/10/2020 16:55	Vijayalakshmi Reddy	2162658
	03/05/2020			03/10/2020 17:01	Vijayalakshmi Reddy	2162659
SM 2540 C-2011	03/05/2020			03/10/2020 15:32	Yijie Li	2162623, 2162624
SM 2540 D-2011	03/05/2020			03/10/2020 15:32	Yijie Li	2162623, 2162624
SM 4500 F-C-2011	03/05/2020			03/12/2020 21:43	Dale L. Simmons	2162623
	03/05/2020			03/12/2020 21:52	Dale L. Simmons	2162624
SM 5310 B-2011	03/05/2020			03/09/2020 15:08	Lauren Lees	2162626
	03/05/2020			03/09/2020 18:10	Lauren Lees	2162625