

Chemical Analysis Report

WAS-SECT-2020-01-29-01

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

Event Description: **Little River**
Request ID: **RQ-2020-01-27-10**
Customer: **WAS-SECT**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 24-FEB-2020 11:27

A handwritten signature in black ink, reading "Colin Wright", is displayed on a white rectangular 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: Hurricane Creek at US 90

Collection Date/Time: 01/29/2020 09:56

Field ID: G1WA0098

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152685	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P378031	
	EPA 300.0 Rev. 2.1	Chloride	13		mg Cl/L	P378367	
		Sulfate	25		mg SO4/L	P378365	
	SM 2120 B-2011	Color (true)	25		PCU	P377982	
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P378280	
	SM 2540 C-2011	TDS	121		mg/L	P378430	
	SM 2540 D-2011	TSS	7	I	mg/L	P378235	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P378550	
2152688	EPA 350.1 Rev. 2.0	Ammonia-N	0.036		mg N/L	P378414	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P378320	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.17		mg N/L	P378212	
	EPA 365.1 Rev. 2.0	Total-P	0.094		mg P/L	P378184	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P378352	
2152691	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.047		mg P/L	P377992	

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: Little River 100 meters upstream of SR 12

Collection Date/Time: 01/29/2020 13:01

Field ID: G1WA0020

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152686	EPA 180.1 Rev. 2.0	Turbidity	11		NTU	P378031	
	EPA 300.0 Rev. 2.1	Chloride	8.3		mg Cl/L	P378367	
		Sulfate	1.6		mg SO4/L	P378365	
	SM 2120 B-2011	Color (true)	69		PCU	P377982	
	SM 2320 B-2011	Total Alkalinity	14		mg CaCO3/L	P378280	
	SM 2540 C-2011	TDS	80		mg/L	P378430	
	SM 2540 D-2011	TSS	7	I	mg/L	P378235	
	SM 4500 F-C-2011	Fluoride	0.073	I	mg F/L	P378550	
2152689	EPA 350.1 Rev. 2.0	Ammonia-N	0.13		mg N/L	P378414	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.75		mg N/L	P378320	
	EPA 353.2 Rev. 2.0	NO2NO3-N	3.0		mg N/L	P378212	
	EPA 365.1 Rev. 2.0	Total-P	0.059		mg P/L	P378184	
	SM 5310 B-2011	Organic Carbon	5.0		mg C/L	P378352	
2152692	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.030		mg P/L	P377992	

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: Little River 100 meters upstream of US 90

Collection Date/Time: 01/29/2020 09:24

Field ID: G1WA0073

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152687	EPA 180.1 Rev. 2.0	Turbidity	12		NTU	P378031	
	EPA 300.0 Rev. 2.1	Chloride	8.5		mg Cl/L	P378367	
		Sulfate	1.8		mg SO4/L	P378365	
		Color (true)	61		PCU	P377982	
	SM 2320 B-2011	Total Alkalinity	16		mg CaCO3/L	P378280	
	SM 2540 C-2011	TDS	80		mg/L	P378430	
	SM 2540 D-2011	TSS	8	I	mg/L	P378235	
	SM 4500 F-C-2011	Fluoride	0.079	I	mg F/L	P378550	
2152690	EPA 350.1 Rev. 2.0	Ammonia-N	0.083		mg N/L	P378414	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.59		mg N/L	P378320	
	EPA 353.2 Rev. 2.0	NO2NO3-N	2.4		mg N/L	P378212	
	EPA 365.1 Rev. 2.0	Total-P	0.067		mg P/L	P378184	
	SM 5310 B-2011	Organic Carbon	4.8		mg C/L	P378352	
2152693	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P377992	

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: Willacoochee Creek at 161

Collection Date/Time: 01/29/2020 11:04

Field ID: G1WA0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152682	EPA 180.1 Rev. 2.0	Turbidity	12	A	NTU	P378031	
	EPA 300.0 Rev. 2.1	Chloride	6.7		mg Cl/L	P378367	
		Sulfate	0.85		mg SO4/L	P378365	
	SM 2120 B-2011	Color (true)	61		PCU	P377982	
	SM 2320 B-2011	Total Alkalinity	14		mg CaCO3/L	P378280	
	SM 2540 C-2011	TDS	62		mg/L	P378430	
	SM 2540 D-2011	TSS	8	I	mg/L	P378235	
2152683	SM 4500 F-C-2011	Fluoride	0.058	I	mg F/L	P378550	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.023		mg N/L	P378414	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P378320	
	EPA 353.2 Rev. 2.0	NO2NO3-N	1.2		mg N/L	P378212	
	EPA 365.1 Rev. 2.0	Total-P	0.060		mg P/L	P379048	
2152684	SM 5310 B-2011	Organic Carbon	4.1		mg C/L	P378352	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.022		mg P/L	P377992	
2152702	EPA 8321B	2,4-D	0.0020	U	ug/L	P377959	
		Acesulfame K**	0.10	U	ug/L	P377926	
		AMPA**	0.10	U	ug/L	P377926	MS
		Sucralose**	0.034	I	ug/L	P377926	
		Acetaminophen**	0.0080	U	ug/L	P377959	
		Acetamiprid**	0.0020	U	ug/L	P377959	
		Endothall**	0.25	U	ug/L	P377926	
		Glufosinate**	0.10	U	ug/L	P377926	
		Glyphosate**	0.10	U	ug/L	P377926	
		Afidopyropen**	0.0020	UJ	ug/L	P377959	
		Bentazon	0.0059		ug/L	P377959	
		Benzovindiflupyr**	0.0060	UJ	ug/L	P377959	
		Carbamazepine**	0.0011	I	ug/L	P377959	
		Clothianidin**	0.0021	I	ug/L	P377959	
		Dinotefuran**	0.13		ug/L	P377959	
		Diuron	0.0020	U	ug/L	P377959	
		Fenuron	0.025	I	ug/L	P377959	
		Fluridone**	8.0E-04	U	ug/L	P377959	
		Imazapyr**	0.032		ug/L	P377959	
		Hydrocodone**	0.0020	U	ug/L	P377959	
		Ibuprofen**	0.020	U	ug/L	P377959	
		Imidacloprid	0.012		ug/L	P377959	
		Linuron	0.0040	U	ug/L	P377959	
		Mandestrobin**	0.0020	UJ	ug/L	P377959	
		MCP	0.0020	U	ug/L	P377959	
		Naproxen**	0.0080	U	ug/L	P377959	
		Primidone**	0.0040	U	ug/L	P377959	
		Pyraclostrobin**	0.0020	U	ug/L	P377959	
		Thiamethoxam**	0.0020	U	ug/L	P377959	

Field ID: G1WA0087

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2152702	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P377959	
		Triclopyr**	0.0040	U	ug/L	P377959	
2152703	EPA 200.7 Rev. 4.4	Barium	20.4		ug/L	P378159	
		Calcium	5.05		mg/L	P378159	
		Iron	1.21E+03		ug/L	P378159	
		Magnesium	2.55		mg/L	P378159	
		Potassium	0.82	I	mg/L	P378159	
		Sodium	3.2		mg/L	P378159	
	EPA 200.8 Rev. 5.4	Zinc	5.0	U	ug/L	P378159	
		Aluminum	324		ug/L	P378159	
		Antimony	0.050	U	ug/L	P378159	
		Arsenic	0.50		ug/L	P378159	
		Boron**	8.8		ug/L	P378159	
		Cadmium	0.020	U	ug/L	P378159	
		Chromium	0.61	I	ug/L	P378159	
		Copper	0.56	I	ug/L	P378159	
		Lead	0.34	I	ug/L	P378159	
		Nickel	0.50	U	ug/L	P378159	
		Selenium	0.20	U	ug/L	P378159	
		Silver	0.010	U	ug/L	P378159	
		Thallium	0.10	U	ug/L	P378159	

Ref. Method and Comment:

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

EPA 8321B: J - second source check standards for some analytes were not available for analysis. MS accuracy for dinotefuran could not be assessed due to high concentration of parameter in the spiked sample.

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378031

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378159

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: P378159

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: P378365

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378367

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378414

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: P378320

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378212

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378184

Component	Result	Code	Units
Total-P	0.005	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377992

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

Reference Method: EPA 8321B
Batch ID: P377926

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: P377959

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P377959

Component	Result	Code	Units
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: P377982

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P378280

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

Reference Method: SM 2540 C-2011
Batch ID: P378430

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P378235

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P378550

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P378352

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: P378159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	97.5		P	85 - 115
Calcium	102		P	85 - 115
Iron	101		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	97.0		P	85 - 115
Sodium	100		P	85 - 115
Zinc	97.3		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P378159

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	99.6		P	85 - 115
Antimony	107		P	85 - 115
Arsenic	105		P	85 - 115
Boron	104		P	85 - 115
Cadmium	107		P	85 - 115
Chromium	105		P	85 - 115
Copper	100		P	85 - 115
Lead	104		P	85 - 115
Nickel	100		P	85 - 115
Selenium	100		P	85 - 115
Silver	108		P	85 - 115
Thallium	104		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P378365

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

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P378367

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

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P378414

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

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P378320

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P378212

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

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P378184

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: P379048

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P377992

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Reference Method: EPA 8321B

Batch ID: P377926

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	119		P	40 - 150
AMPA	133		P	40 - 150
Endothall	112		P	40 - 150
Glufosinate	124		P	40 - 150
Glyphosate	133		P	40 - 140
Sucralose	83.9		P	40 - 150

Reference Method: EPA 8321B

Batch ID: P377959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	134		P	30 - 160
Acetaminophen	92.3		P	30 - 160
Acetamiprid	93.5		P	30 - 160
Afidopyropen	96.7		P	30 - 160
Bentazon	73.7		P	30 - 160
Benzovindiflupyr	77.4		P	30 - 160
Carbamazepine	89.5		P	30 - 160
Clothianidin	93.8		P	30 - 160
Dinotefuran	110		P	30 - 160
Diuron	74.4		P	30 - 160
Fenuron	111		P	30 - 160
Fluridone	92.7		P	30 - 160
Hydrocodone	108		P	30 - 160
Ibuprofen	81.0		P	30 - 160
Imazapyr	114		P	30 - 160
Imidacloprid	96.0		P	30 - 160
Linuron	73.2		P	30 - 160

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 8321B

Batch ID: P377959

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Mandestrobin	94.7		P	30 - 160
MCP	127		P	30 - 160
Naproxen	73.1		P	30 - 160
Primidone	88.1		P	30 - 160
Pyraclostrobin	86.1		P	30 - 160
Thiamethoxam	103		P	30 - 160
Tolfenpyrad	59.1		P	30 - 160
Triclopyr	101		P	30 - 160

Reference Method: SM 2120 B-2011

Batch ID: P377982

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

Reference Method: SM 2320 B-2011

Batch ID: P378280

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	100		P	98 - 106

Reference Method: SM 4500 F-C-2011

Batch ID: P378550

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.6		P	92 - 103

Reference Method: SM 5310 B-2011

Batch ID: P378352

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.7		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P378159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152723	Barium	97.3		P	80 - 120
2152723	Calcium	102		P	80 - 120
2152723	Iron	100		P	80 - 120
2152723	Magnesium	102		P	80 - 120
2152723	Potassium	94.7		P	80 - 120
2152723	Sodium	102		P	80 - 120
2152723	Zinc	96.4		P	80 - 120
2153526	Barium	99.9	96.4	P/P	80 - 120
2153526	Calcium	100		P	80 - 120
2153526	Iron	102	102	P/P	80 - 120
2153526	Magnesium	100	102	P/P	80 - 120
2153526	Potassium	97.0	95.8	P/P	80 - 120
2153526	Sodium	101		P	80 - 120
2153526	Zinc	98.7	95.6	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P378159

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152723	Aluminum	97.4		P	80 - 120
2152723	Antimony	108		P	80 - 120
2152723	Arsenic	109		P	80 - 120
2152723	Boron	102		P	80 - 120
2152723	Cadmium	107		P	80 - 120
2152723	Chromium	108		P	80 - 120
2152723	Copper	103		P	80 - 120
2152723	Lead	108		P	80 - 120
2152723	Nickel	101		P	80 - 120
2152723	Selenium	99.6		P	80 - 120
2152723	Silver	107		P	80 - 120
2152723	Thallium	111		P	80 - 120
2153526	Aluminum	97.2	97.5	P/P	80 - 120
2153526	Antimony	107	107	P/P	80 - 120
2153526	Arsenic	106	107	P/P	80 - 120
2153526	Boron	104	104	P/P	80 - 120
2153526	Cadmium	107	106	P/P	80 - 120
2153526	Chromium	107	107	P/P	80 - 120
2153526	Copper	99.9	101	P/P	80 - 120
2153526	Lead	104	104	P/P	80 - 120
2153526	Nickel	100	101	P/P	80 - 120
2153526	Selenium	99.0	97.5	P/P	80 - 120
2153526	Silver	105	104	P/P	80 - 120
2153526	Thallium	106	107	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P378365

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152536	Sulfate	99.1		P	90 - 110
2152663	Sulfate	98.6		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152536	Chloride	99.0		P	90 - 110
2152663	Chloride	99.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378414

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152683	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378320

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152665	Kjeldahl Nitrogen	99.5	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378212

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152665	NO2NO3-N	98.0	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378184

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152666	Total-P	103	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2153039	Total-P	106	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377992

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152667	O-Phosphate-P	94.7	94.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P377926

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152482	Acesulfame K	53.6	50.4	P/P	40 - 150
2152482	AMPA	177	176	F/F	40 - 150
2152482	Endothall	109	101	P/P	40 - 150
2152482	Glufosinate	114	116	P/P	40 - 150
2152482	Glyphosate	104	92.7	P/P	40 - 140
2152482	Sucralose	81.0	83.3	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B

Batch ID: P377959

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152702	2,4-D	132	120	P/P	30 - 160
2152702	Acetaminophen	91.7	89.6	P/P	30 - 160
2152702	Acetamiprid	101	97.3	P/P	30 - 160
2152702	Afidopyropen	79.7	77.4	P/P	30 - 160
2152702	Bentazon	49.0	54.3	P/P	30 - 160
2152702	Benzovindiflupyr	83.9	81.4	P/P	30 - 160
2152702	Carbamazepine	94.5	83.4	P/P	30 - 160
2152702	Clothianidin	102	95.7	P/P	30 - 160
2152702	Diuron	70.9	73.5	P/P	30 - 160
2152702	Fenuron	66.4	64.4	P/P	30 - 160
2152702	Fluridone	112	102	P/P	30 - 160
2152702	Hydrocodone	104	87.2	P/P	30 - 160
2152702	Ibuprofen	81.9	80.8	P/P	30 - 160
2152702	Imazapyr	105	99.6	P/P	30 - 160
2152702	Imidacloprid	146	140	P/P	30 - 160
2152702	Linuron	70.1	69.2	P/P	30 - 160
2152702	Mandestrobin	93.6	92.4	P/P	30 - 160
2152702	MCP	123	119	P/P	30 - 160
2152702	Naproxen	93.7	77.4	P/P	30 - 160
2152702	Primidone	100	99.0	P/P	30 - 160
2152702	Pyraclostrobin	92.5	90.3	P/P	30 - 160
2152702	Thiamethoxam	144	139	P/P	30 - 160
2152702	Tolfenpyrad	65.7	63.7	P/P	30 - 160
2152702	Triclopyr	94.7	84.3	P/P	30 - 160

Reference Method: SM 4500 F-C-2011

Batch ID: P378550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152630	Fluoride	94.8	95.9	P/P	89 - 106

Reference Method: SM 5310 B-2011

Batch ID: P378352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2152544	Organic Carbon	99.1	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P378031

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152682	Turbidity	7.41	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P378159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153526	Barium	3.30	Spike	P	0 - 20
2153526	Calcium	0.326	Spike	P	0 - 20
2153526	Iron	0.411	Spike	P	0 - 20
2153526	Magnesium	1.06	Spike	P	0 - 20
2153526	Potassium	0.873	Spike	P	0 - 20
2153526	Sodium	1.23	Spike	P	0 - 20
2153526	Zinc	3.08	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P378159

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153526	Aluminum	0.201	Spike	P	0 - 20
2153526	Antimony	0.337	Spike	P	0 - 20
2153526	Arsenic	0.670	Spike	P	0 - 20
2153526	Boron	0.435	Spike	P	0 - 20
2153526	Cadmium	0.577	Spike	P	0 - 20
2153526	Chromium	0.140	Spike	P	0 - 20
2153526	Copper	0.658	Spike	P	0 - 20
2153526	Lead	0.155	Spike	P	0 - 20
2153526	Nickel	0.726	Spike	P	0 - 20
2153526	Selenium	1.45	Spike	P	0 - 20
2153526	Silver	1.17	Spike	P	0 - 20
2153526	Thallium	0.659	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378365

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152663	Sulfate	0.770	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P378367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152663	Chloride	0.953	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P378414

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152683	Ammonia-N	0.239	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P378320

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152665	Kjeldahl Nitrogen	2.29	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P378212

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152665	NO2NO3-N	0.329	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P378184

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152666	Total-P	1.32	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P379048

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2153039	Total-P	0.764	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377992

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152667	O-Phosphate-P	0.195	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P377926

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152482	Acesulfame K	6.18	Spike	P	0 - 30
2152482	AMPA	0.749	Spike	P	0 - 30
2152482	Endothall	7.47	Spike	P	0 - 30
2152482	Glufosinate	2.55	Spike	P	0 - 30
2152482	Glyphosate	11.3	Spike	P	0 - 30
2152482	Sucralose	2.73	Spike	P	0 - 30

Quality Assurance Report

Precision

Reference Method: EPA 8321B

Batch ID: P377959

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152702	2,4-D	9.54	Spike	P	0 - 30
2152702	Acetaminophen	2.36	Spike	P	0 - 30
2152702	Acetamiprid	3.84	Spike	P	0 - 30
2152702	Afidopyropen	2.90	Spike	P	0 - 30
2152702	Bentazon	4.19	Spike	P	0 - 30
2152702	Benzovindiflupyr	2.76	Spike	P	0 - 30
2152702	Carbamazepine	11.8	Spike	P	0 - 30
2152702	Clothianidin	6.01	Spike	P	0 - 30
2152702	Dinotefuran	7.13	Spike	P	0 - 30
2152702	Diuron	3.66	Spike	P	0 - 30
2152702	Fenuron	2.07	Spike	P	0 - 30
2152702	Fluridone	9.26	Spike	P	0 - 30
2152702	Hydrocodone	17.7	Spike	P	0 - 30
2152702	Ibuprofen	1.36	Spike	P	0 - 30
2152702	Imazapyr	3.84	Spike	P	0 - 30
2152702	Imidacloprid	3.69	Spike	P	0 - 30
2152702	Linuron	1.43	Spike	P	0 - 30
2152702	Mandestrobin	1.33	Spike	P	0 - 30
2152702	MCPP	3.66	Spike	P	0 - 30
2152702	Naproxen	19.1	Spike	P	0 - 30
2152702	Primidone	1.44	Spike	P	0 - 30
2152702	Pyraclostrobin	2.37	Spike	P	0 - 30
2152702	Thiamethoxam	3.21	Spike	P	0 - 30
2152702	Tolfenpyrad	3.03	Spike	P	0 - 30
2152702	Triclopyr	11.5	Spike	P	0 - 30

Reference Method: SM 2120 B-2011

Batch ID: P377982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152708	Color (true)	2.69	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P378280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152627	Total Alkalinity	0.398	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011

Batch ID: P378430

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152627	TDS	6.62	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P378550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152630	Fluoride	0.470	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P378352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2152544	Organic Carbon	0.934	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2152702
Field Sample ID: G1WA0087

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	107	P	30 - 160
EPA 8321B	Acetaminophen-d4	94.0	P	30 - 160
EPA 8321B	Carbamazepine-d10	99.2	P	30 - 160
EPA 8321B	Diuron-d6	83.2	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Endothall-d6	153	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	68.0	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	68.0	P	30 - 160
EPA 8321B	Ibuprofen-d3	86.2	P	30 - 160
EPA 8321B	Primidone-d5	98.2	P	30 - 160
EPA 8321B	Sucralose-d6	87.1	P	30 - 160
EPA 8321B	Sucralose-d6	87.1	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B-2011

Run ID: A97206

Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A97207

Included Lab Sample IDs: 2152684, 2152691, 2152692, 2152693

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.2	98.1	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A97226

Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	102	P/P	95 - 105

Reference Method: EPA 8321B

Run ID: A97267

Included Lab Sample IDs: 2152702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	103	103	P/P	50 - 150
Acetaminophen	103	88.9	P/P	60 - 160
Acetamiprid	103	111	P/P	50 - 150
Afidopyropen	114	110	P/P	50 - 150
Bentazon	103	106	P/P	50 - 160
Benzovindiflupyr	108	110	P/P	50 - 150
Carbamazepine	83.5	112	P/P	60 - 150
Clothianidin	103	113	P/P	60 - 150
Dinotefuran	96.6	93.9	P/P	50 - 150
Diuron	93.8	92.3	P/P	60 - 150
Fenuron	104	102	P/P	60 - 150
Fluridone	105	109	P/P	60 - 160
Hydrocodone	96.6	107	P/P	60 - 150
Ibuprofen	101	102	P/P	50 - 160
Imazapyr	116	112	P/P	50 - 150
Imidacloprid	97.7	96.5	P/P	60 - 150
Linuron	92.6	102	P/P	60 - 150
Mandestrobin	109	108	P/P	50 - 150
MCP	91.0	95.8	P/P	50 - 150
Naproxen	116	89.4	P/P	50 - 160
Primidone	109	95.6	P/P	60 - 150
Pyraclostrobin	108	111	P/P	60 - 150
Thiamethoxam	111	104	P/P	50 - 150
Tolfenpyrad	108	111	P/P	60 - 150
Triclopyr	93.9	99.1	P/P	50 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B
Run ID: A97290
Included Lab Sample IDs: 2152702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	78.1	81.4	P/P	60 - 160

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A97291
Included Lab Sample IDs: 2152683, 2152688, 2152689, 2152690

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

Reference Method: EPA 8321B
Run ID: A97293
Included Lab Sample IDs: 2152702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	108	82.4	P/P	60 - 160
Endothall	132	152	P/P	60 - 160

Reference Method: EPA 8321B
Run ID: A97294
Included Lab Sample IDs: 2152702

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	124	119	P/P	60 - 160
Glufosinate	101	109	P/P	60 - 160
Glyphosate	119	139	P/P	60 - 160

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A97316
Included Lab Sample IDs: 2152703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	99.0	99.1	P/P	90 - 110
Calcium	97.8	97.7	P/P	90 - 110
Iron	98.0	98.3	P/P	90 - 110
Magnesium	97.7	98.0	P/P	90 - 110
Potassium	95.6	96.2	P/P	90 - 110
Sodium	97.1	97.9	P/P	90 - 110
Zinc	99.5	99.5	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A97320
Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.0	105	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A97327
Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A97327

Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.9	99.6	P/P	90 - 110
Sulfate	99.9	99.8	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A97338

Included Lab Sample IDs: 2152683, 2152688, 2152689, 2152690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	106	107	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A97355

Included Lab Sample IDs: 2152683, 2152688, 2152689, 2152690

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97365

Included Lab Sample IDs: 2152683, 2152688, 2152689, 2152690

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	107	P/P	90 - 110
Kjeldahl Nitrogen	107	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97374

Included Lab Sample IDs: 2152688, 2152689, 2152690

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97402

Included Lab Sample IDs: 2152703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	98.3	96.8	P/P	90 - 110
Antimony	103	105	P/P	90 - 110
Arsenic	101	100	P/P	90 - 110
Cadmium	103	103	P/P	90 - 110
Chromium	99.6	101	P/P	90 - 110
Copper	95.5	95.8	P/P	90 - 110
Lead	99.3	99.2	P/P	90 - 110
Selenium	100	101	P/P	90 - 110
Thallium	98.9	99.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A97403

Included Lab Sample IDs: 2152682, 2152685, 2152686, 2152687

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	99.1	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A97560

Included Lab Sample IDs: 2152703

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Boron	102	96.8	P/P	90 - 110
Nickel	98.4	98.9	P/P	90 - 110
Silver	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97630

Included Lab Sample IDs: 2152683

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	103	103	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						7.41	
EPA 200.7 Rev. 4.4	Barium	97.5	97.3	99.9	96.4			3.30
	Calcium	102	100	102				0.326
	Iron	101	100	102	102			0.411
	Magnesium	103	100	102	102			1.06
	Potassium	97.0	94.7	97.0	95.8			0.873
	Sodium	100	102	101				1.23
	Zinc	97.3	96.4	95.6	98.7			3.08
EPA 200.8 Rev. 5.4	Aluminum	99.6	97.2	97.5	97.4			0.201
	Antimony	107	107	107	108			0.337
	Arsenic	105	106	107	109			0.670
	Boron	104	102	104	104			0.435
	Cadmium	107	107	106	107			0.577
	Chromium	105	107	107	108			0.140
	Copper	100	99.9	101	103			0.658
	Lead	104	104	104	108			0.155
	Nickel	100	101	100	101			0.726
	Selenium	100	99.0	97.5	99.6			1.45
	Silver	108	107	105	104			1.17
	Thallium	104	106	107	111			0.659
EPA 300.0 Rev. 2.1	Chloride	102	99.4	99.0			0.953	
	Sulfate	102	98.6	99.1			0.770	
EPA 350.1 Rev. 2.0	Ammonia-N	100	101	101				0.239
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	99.5	103				2.29
EPA 353.2 Rev. 2.0	NO2NO3-N	100	98.0	98.5				0.329
EPA 365.1 Rev. 2.0	Total-P	102	103	105				1.32
	Total-P	107	106	107				0.764
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	94.7	94.9				0.195
EPA 8321B	2,4-D	134	132	120				9.54
	Acesulfame K	119	53.6	50.4				6.18
	Acetaminophen	92.3	91.7	89.6				2.36
	Acetamiprid	93.5	101	97.3				3.84
	Afidopyropen	96.7	79.7	77.4				2.90
	AMPA	133	177	176				0.749
	Bentazon	73.7	49.0	54.3				4.19
	Benzovindiflupyr	77.4	83.9	81.4				2.76
	Carbamazepine	89.5	94.5	83.4				11.8
	Clothianidin	93.8	102	95.7				6.01
	Dinotefuran	110						7.13
	Diuron	74.4	70.9	73.5				3.66
	Endothall	112	109	101				7.47
	Fenuron	111	66.4	64.4				2.07
	Fluridone	92.7	112	102				9.26
	Glufosinate	124	114	116				2.55
	Glyphosate	133	104	92.7				11.3
	Hydrocodone	108	104	87.2				17.7
	Ibuprofen	81.0	81.9	80.8				1.36
	Imazapyr	114	99.6	105				3.84
	Imidacloprid	96.0	146	140				3.69
	Linuron	73.2	70.1	69.2				1.43
	Mandestrobin	94.7	93.6	92.4				1.33
	MCPP	127	123	119				3.66
	Naproxen	73.1	93.7	77.4				19.1
	Primidone	88.1	100	99.0				1.44

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Pyraclostrobin	86.1	92.5	90.3		2.37
	Sucralose	83.9	83.3	81.0		2.73
	Thiamethoxam	103	144	139		3.21
	Tolfenpyrad	59.1	65.7	63.7		3.03
	Triclopyr	101	94.7	84.3		11.5
SM 2120 B-2011	Color (true)	100			2.69	
SM 2320 B-2011	Total Alkalinity	100			0.398	
SM 2540 C-2011	TDS				6.62	
SM 4500 F-C-2011	Fluoride	97.6	94.8	95.9		0.470
SM 5310 B-2011	Organic Carbon	97.7	99.1	100		0.934

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2152682, 2152685, 2152686, 2152687
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2152703
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2152703
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2152682, 2152685, 2152686, 2152687
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2152682, 2152685, 2152686, 2152687
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2152683, 2152688, 2152689, 2152690
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2152683, 2152688, 2152689, 2152690
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2152683, 2152688, 2152689, 2152690
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2152683, 2152688, 2152689, 2152690
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2152684, 2152691, 2152692, 2152693
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2152702
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2152702
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2152682, 2152685, 2152686, 2152687
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2152682, 2152685, 2152686, 2152687
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2152682, 2152685, 2152686, 2152687
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2152682, 2152685, 2152686, 2152687
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2152682, 2152685, 2152686, 2152687
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2152683, 2152688, 2152689, 2152690

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	01/29/2020			01/30/2020 17:11	Yen Ta	2152682, 2152685, 2152686, 2152687
EPA 200.7 Rev. 4.4	01/29/2020	02/03/2020 14:55	Elliott D. Healy	02/04/2020 19:25	Betina Topolski	2152703
EPA 200.8 Rev. 5.4	01/29/2020	02/03/2020 14:55	Elliott D. Healy	02/07/2020 21:08	Justin Cutchin	2152703
	01/29/2020	02/03/2020 14:55	Elliott D. Healy	02/14/2020 16:46	Justin Cutchin	2152703
EPA 300.0 Rev. 2.1	01/29/2020			02/05/2020 00:06	Elliott Rodriguez	2152682
	01/29/2020			02/05/2020 00:19	Elliott Rodriguez	2152685
	01/29/2020			02/05/2020 00:31	Elliott Rodriguez	2152686
	01/29/2020			02/05/2020 00:43	Elliott Rodriguez	2152687
EPA 350.1 Rev. 2.0	01/29/2020			02/05/2020 13:03	Ping Hua	2152683
	01/29/2020			02/05/2020 13:05	Ping Hua	2152688
	01/29/2020			02/05/2020 13:12	Ping Hua	2152689
	01/29/2020			02/05/2020 13:14	Ping Hua	2152690
EPA 351.2 Rev. 2.0	01/29/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:51	Jhamieka S. Greenwood	2152683
	01/29/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:53	Jhamieka S. Greenwood	2152688
	01/29/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:54	Jhamieka S. Greenwood	2152689
	01/29/2020	02/05/2020 14:50	Jhamieka S. Greenwood	02/06/2020 12:59	Jhamieka S. Greenwood	2152690
EPA 353.2 Rev. 2.0	01/29/2020			02/04/2020 10:36	Beverly Y. Sanders	2152683
	01/29/2020			02/04/2020 10:37	Beverly Y. Sanders	2152688
	01/29/2020			02/04/2020 10:38	Beverly Y. Sanders	2152689
	01/29/2020			02/04/2020 10:39	Beverly Y. Sanders	2152690
EPA 365.1 Rev. 2.0	01/29/2020	02/03/2020 15:03	Lipi Saha	02/05/2020 12:45	Benjamin T. Nordmann	2152688
	01/29/2020	02/03/2020 15:03	Lipi Saha	02/05/2020 12:46	Benjamin T. Nordmann	2152689
	01/29/2020	02/03/2020 15:03	Lipi Saha	02/05/2020 12:47	Benjamin T. Nordmann	2152690
	01/29/2020	02/17/2020 17:00	Yen Ta	02/18/2020 17:32	Benjamin T. Nordmann	2152683
EPA 365.1 Rev. 2.0 dissolved	01/29/2020			01/30/2020 16:26	Carlos Miranda	2152684
	01/29/2020			01/30/2020 16:47	Carlos Miranda	2152691
	01/29/2020			01/30/2020 16:48	Carlos Miranda	2152692
	01/29/2020			01/30/2020 16:49	Carlos Miranda	2152693
EPA 8321B	01/29/2020	01/30/2020 12:00	Rebecca Ware	01/31/2020 03:33	Rebecca Ware	2152702
	01/29/2020	01/30/2020 12:00	Rebecca Ware	02/03/2020 17:36	Rebecca Ware	2152702
	01/29/2020	01/30/2020 12:00	Rebecca Ware	02/03/2020 22:59	Rebecca Ware	2152702
	01/29/2020	01/31/2020 10:00	Hoor Shaik	02/02/2020 05:12	Juyoung Kim	2152702
SM 2120 B-2011	01/29/2020			01/30/2020 16:11	Madeline Funaro	2152682
	01/29/2020			01/30/2020 16:12	Madeline Funaro	2152685, 2152686
	01/29/2020			01/30/2020 16:13	Madeline Funaro	2152687
SM 2320 B-2011	01/29/2020			02/04/2020 05:54	Dale L. Simmons	2152682
	01/29/2020			02/04/2020 06:06	Dale L. Simmons	2152685
	01/29/2020			02/04/2020 06:17	Dale L. Simmons	2152686
	01/29/2020			02/04/2020 06:27	Dale L. Simmons	2152687
SM 2540 C-2011	01/29/2020			02/03/2020 17:30	Blanca Fach	2152682, 2152685, 2152686, 2152687

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 2540 D-2011	01/29/2020			02/03/2020 17:30	Blanca Fach	2152682, 2152685, 2152686, 2152687
SM 4500 F-C-2011	01/29/2020			02/06/2020 22:38	Dale L. Simmons	2152682
	01/29/2020			02/06/2020 22:43	Dale L. Simmons	2152685
	01/29/2020			02/06/2020 22:47	Dale L. Simmons	2152686
	01/29/2020			02/06/2020 22:51	Dale L. Simmons	2152687
SM 5310 B-2011	01/29/2020			02/03/2020 11:35	Madeline Funaro	2152683
	01/29/2020			02/03/2020 11:53	Madeline Funaro	2152688
	01/29/2020			02/04/2020 12:10	Madeline Funaro	2152689
	01/29/2020			02/04/2020 12:28	Madeline Funaro	2152690