

Chemical Analysis Report

NE-DIST-2020-07-30-02

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

Event Description: **LSJR South West 2020**

Request ID: **RQ-2020-08-03-26**

Customer: **NE-DIST**

Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 21-AUG-2020 13:57

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

Case Narrative

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

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

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

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

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

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

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

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

Precision is reported as relative percent difference unless otherwise noted.

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

QC Codes used in this report may include:

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

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

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

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

Sample Location: Mill CR @ SR 16

Collection Date/Time: 07/29/2020 09:35

Field ID: 20030474

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187262	EPA 180.1 Rev. 2.0	Turbidity	3.0		NTU	P385424	
	EPA 300.0 Rev. 2.1	Chloride	76		mg Cl/L	P385627	
		Sulfate	51		mg SO4/L	P385631	
		Color (true)	35		PCU	P385408	
	SM 2320 B-2011	Total Alkalinity	115		mg CaCO3/L	P385520	
	SM 2540 C-2011	TDS	362		mg/L	P385632	
	SM 2540 D-2011	TSS	4	I	mg/L	P385702	
	SM 4500 F-C-2011	Fluoride	0.25		mg F/L	P385524	
2187263	EPA 350.1 Rev. 2.0	Ammonia-N	0.042		mg N/L	P385483	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.84		mg N/L	P385673	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.31		mg N/L	P385530	
	EPA 365.1 Rev. 2.0	Total-P	0.21		mg P/L	P385553	
	SM 5310 B-2011	Organic Carbon	13		mg C/L	P385542	
2187264	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P385400	
2187278	EPA 200.7 Rev. 4.4	Barium	27.9		ug/L	P385397	
		Calcium	44.7		mg/L	P385397	
		Iron	200		ug/L	P385397	
		Magnesium	11.8		mg/L	P385397	
		Potassium	5.0		mg/L	P385397	
		Sodium	53.8		mg/L	P385397	
		Zinc	5.0	U	ug/L	P385397	
	EPA 200.8 Rev. 5.4	Aluminum	103		ug/L	P385397	
		Antimony	0.12	I	ug/L	P385397	
		Arsenic	1.23		ug/L	P385397	
		Boron**	75.1		ug/L	P385397	
		Cadmium	0.020	U	ug/L	P385397	
		Chromium	0.40	U	ug/L	P385397	
		Copper	1.76		ug/L	P385397	
		Lead	0.20	U	ug/L	P385397	
		Nickel	0.50	U	ug/L	P385397	
		Selenium	0.20	U	ug/L	P385397	
	SM 2340B	Silver	0.010	U	ug/L	P385397	
		Thallium	0.10	U	ug/L	P385397	
		Hardness	160		mg/L	P385397	

Sample Location: Peters Creek @ Rosemary Hill Rd

Collection Date/Time: 07/29/2020 10:15

Field ID: 20030571

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187265	EPA 180.1 Rev. 2.0	Turbidity	26	A	NTU	P385425	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P385627	
		Sulfate	5.0		mg SO4/L	P385631	
	SM 2120 B-2011	Color (true)	190	A	PCU	P385410	
	SM 2320 B-2011	Total Alkalinity	33		mg CaCO3/L	P385520	
	SM 2540 C-2011	TDS	104		mg/L	P385632	
	SM 2540 D-2011	TSS	7	I	mg/L	P385702	
	SM 4500 F-C-2011	Fluoride	0.035	I	mg F/L	P385524	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P385483	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55		mg N/L	P385673	
2187266	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P385531	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P385553	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P385542	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.012		mg P/L	P385400	

Sample Location: Bull CR NE Crossing CR 215

Collection Date/Time: 07/29/2020 10:55

Field ID: 20030487

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187268	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P385425	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P385627	
		Sulfate	3.6		mg SO4/L	P385631	
	SM 2120 B-2011	Color (true)	200		PCU	P385408	
	SM 2320 B-2011	Total Alkalinity	23		mg CaCO3/L	P385520	
	SM 2540 C-2011	TDS	90		mg/L	P385633	
	SM 2540 D-2011	TSS	2	U	mg/L	P385703	
	SM 4500 F-C-2011	Fluoride	0.10		mg F/L	P385524	
2187269	EPA 350.1 Rev. 2.0	Ammonia-N	0.010		mg N/L	P385483	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P385673	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.085		mg N/L	P385531	
	EPA 365.1 Rev. 2.0	Total-P	0.20		mg P/L	P385553	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P385542	
2187270	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.17		mg P/L	P385400	
2187277	EPA 8321B	2,4-D	0.013		ug/L	P385308	
		Acesulfame K**	0.10	U	ug/L	P385502	
		AMPA**	0.10	U	ug/L	P385502	
		Sucralose**	0.10		ug/L	P385502	
		Acetaminophen**	0.0080	U	ug/L	P385308	
		Acetamiprid**	0.0020	U	ug/L	P385308	
		Endothall**	0.25	U	ug/L	P385502	
		Glufosinate**	0.10	U	ug/L	P385502	
		Glyphosate**	0.10	U	ug/L	P385502	
		Afidopyropen**	0.0020	U	ug/L	P385308	
		Bentazon	8.0E-04	U	ug/L	P385308	
		Benzovindiflupyr**	0.0020	U	ug/L	P385308	
		Carbamazepine**	0.0029	I	ug/L	P385308	
		Clothianidin**	0.0020	U	ug/L	P385308	
		Dinotefuran**	0.0020	U	ug/L	P385308	
		Diuron	0.0020	U	ug/L	P385308	
		Fenuron	0.016	U	ug/L	P385308	
		Fluridone**	8.0E-04	U	ug/L	P385308	
		Imazapyr**	0.0055	I	ug/L	P385308	
		Hydrocodone**	0.0020	U	ug/L	P385308	
		Ibuprofen**	0.020	U	ug/L	P385308	
		Imidacloprid	0.0041	I	ug/L	P385308	
		Linuron	0.0040	U	ug/L	P385308	
		Mandestrobin**	0.0020	U	ug/L	P385308	
		MCP	0.0020	U	ug/L	P385308	
		Naproxen**	0.0080	U	ug/L	P385308	
		Primidone**	0.0040	U	ug/L	P385308	
		Pyraclostrobin**	0.0020	U	ug/L	P385308	
		Thiamethoxam**	0.0020	U	ug/L	P385308	

Field ID: 20030487

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2187277	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P385308	
		Triclopyr**	0.0040	U	ug/L	P385308	
2187279	EPA 200.7 Rev. 4.4	Barium	9.1		ug/L	P385397	
		Calcium	9.07		mg/L	P385397	
		Iron	480		ug/L	P385397	
		Magnesium	2.87		mg/L	P385397	
		Potassium	0.46	I	mg/L	P385397	
		Sodium	7.2		mg/L	P385397	
		Zinc	5.0	U	ug/L	P385397	
	EPA 200.8 Rev. 5.4	Aluminum	299		ug/L	P385397	
		Antimony	0.050	U	ug/L	P385397	
		Arsenic	0.49		ug/L	P385397	
		Boron**	20.6		ug/L	P385397	
		Cadmium	0.020	U	ug/L	P385397	
		Chromium	0.53	I	ug/L	P385397	
		Copper	0.52	I	ug/L	P385397	
		Lead	0.37	I	ug/L	P385397	
		Nickel	0.50	U	ug/L	P385397	
		Selenium	0.20	U	ug/L	P385397	
		Silver	0.010	U	ug/L	P385397	
		Thallium	0.10	U	ug/L	P385397	
	SM 2340B	Hardness	34.5		mg/L	P385397	

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: MS accuracy for 2,4-D and bentazon 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: P385424

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385425

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

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: P385397

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: P385627

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385631

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Quality Assurance Report Method Blank Results

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385483

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385673

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385530

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385531

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385553

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385400

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

Reference Method: EPA 8321B
Batch ID: P385308

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 8321B
Batch ID: P385308

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

Reference Method: EPA 8321B
Batch ID: P385502

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: P385408

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P385410

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P385520

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

Reference Method: SM 2540 C-2011
Batch ID: P385632

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P385633

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P385702

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P385703

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385524

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385542

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: P385397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	98.0		P	85 - 115
Calcium	101		P	85 - 115
Iron	103		P	85 - 115
Magnesium	103		P	85 - 115
Potassium	101		P	85 - 115
Sodium	101		P	85 - 115
Zinc	98.9		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	91.5		P	85 - 115
Antimony	93.9		P	85 - 115
Arsenic	95.0		P	85 - 115
Boron	99.9		P	85 - 115
Cadmium	93.0		P	85 - 115
Chromium	95.2		P	85 - 115
Copper	102		P	85 - 115
Lead	96.2		P	85 - 115
Nickel	101		P	85 - 115
Selenium	89.7		P	85 - 115
Silver	106		P	85 - 115
Thallium	95.6		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385627

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385631

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385483

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	99.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385673

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P385530

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

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P385531

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: P385553

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: P385400

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

Reference Method: EPA 8321B
 Batch ID: P385308

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	93.9		P	30 - 160
Acetaminophen	87.5		P	30 - 160
Acetamiprid	80.1		P	30 - 160
Afidopyropen	68.4		P	30 - 160
Bentazon	68.9		P	30 - 160
Benzovindiflupyr	59.6		P	30 - 160
Carbamazepine	73.9		P	30 - 160
Clothianidin	91.5		P	30 - 160
Dinotefuran	93.3		P	30 - 160
Diuron	67.5		P	30 - 160
Fenuron	92.9		P	30 - 160
Fluridone	97.5		P	30 - 160
Hydrocodone	83.9		P	30 - 160
Ibuprofen	79.0		P	30 - 160
Imazapyr	58.2		P	30 - 160
Imidacloprid	113		P	30 - 160
Linuron	69.3		P	30 - 160
Mandestrobin	78.5		P	30 - 160
MCPP	112		P	30 - 160
Naproxen	62.6		P	30 - 160
Primidone	92.3		P	30 - 160
Pyraclostrobin	56.9		P	30 - 160
Thiamethoxam	91.1		P	30 - 160
Tolfenpyrad	30.9		P	30 - 160
Triclopyr	70.2		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P385502

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	104		P	40 - 150
AMPA	97.5		P	40 - 150
Endothall	93.4		P	40 - 150
Glufosinate	96.6		P	40 - 150
Glyphosate	96.4		P	40 - 140
Sucralose	96.0		P	40 - 150

Reference Method: SM 2120 B-2011
Batch ID: P385408

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

Reference Method: SM 2120 B-2011
Batch ID: P385410

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

Reference Method: SM 2320 B-2011
Batch ID: P385520

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P385524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385542

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186892	Barium	96.8	102	P/P	80 - 120
2186892	Calcium	102	102	P/P	80 - 120
2186892	Iron	106	106	P/P	80 - 120
2186892	Magnesium	104	103	P/P	80 - 120
2186892	Potassium	102	103	P/P	80 - 120
2186892	Sodium	99.9		P	80 - 120
2186892	Zinc	100	105	P/P	80 - 120
2187196	Barium	103		P	80 - 120
2187196	Calcium	99.0		P	80 - 120
2187196	Iron	105		P	80 - 120
2187196	Magnesium	103		P	80 - 120
2187196	Potassium	102		P	80 - 120
2187196	Sodium	99.7		P	80 - 120
2187196	Zinc	107		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186892	Aluminum	91.9	91.3	P/P	80 - 120
2186892	Antimony	96.4	95.0	P/P	80 - 120
2186892	Arsenic	95.6	94.1	P/P	80 - 120
2186892	Boron	101	102	P/P	80 - 120
2186892	Cadmium	92.7	91.5	P/P	80 - 120
2186892	Chromium	98.3	98.2	P/P	80 - 120
2186892	Copper	102	102	P/P	80 - 120
2186892	Lead	100	99.2	P/P	80 - 120
2186892	Nickel	100	99.6	P/P	80 - 120
2186892	Selenium	87.9	86.8	P/P	80 - 120
2186892	Silver	106	105	P/P	80 - 120
2186892	Thallium	99.9	100	P/P	80 - 120
2187196	Aluminum	92.8		P	80 - 120
2187196	Antimony	97.6		P	80 - 120
2187196	Arsenic	96.8		P	80 - 120
2187196	Boron	105		P	80 - 120
2187196	Cadmium	96.7		P	80 - 120
2187196	Chromium	100		P	80 - 120
2187196	Copper	103		P	80 - 120
2187196	Lead	100		P	80 - 120
2187196	Nickel	102		P	80 - 120
2187196	Selenium	86.6		P	80 - 120
2187196	Silver	105		P	80 - 120
2187196	Thallium	103		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385627

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187011	Chloride	104		P	90 - 110
2187377	Chloride	106		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187011	Sulfate	105		P	90 - 110
2187377	Sulfate	107		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187263	Ammonia-N	101	98.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187392	Kjeldahl Nitrogen	109	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187168	NO2NO3-N	96.5	98.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187378	NO2NO3-N	99.5	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187229	Total-P	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187185	O-Phosphate-P	96.8	97.9	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Acetaminophen	81.0	81.0	P/P	30 - 160
2186499	Acetamiprid	72.3	72.1	P/P	30 - 160
2186499	Afidopyropen	68.1	62.0	P/P	30 - 160
2186499	Benzovindiflupyr	54.4	51.4	P/P	30 - 160
2186499	Carbamazepine	60.4	59.5	P/P	30 - 160
2186499	Clothianidin	78.8	81.8	P/P	30 - 160
2186499	Dinotefuran	86.9	88.0	P/P	30 - 160
2186499	Diuron	50.1	50.6	P/P	30 - 160
2186499	Fenuron	74.3	72.3	P/P	30 - 160

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P385308

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2186499	Fluridone	92.2	91.9	P/P	30 - 160
2186499	Hydrocodone	71.4	67.6	P/P	30 - 160
2186499	Ibuprofen	60.6	64.1	P/P	30 - 160
2186499	Imazapyr	61.8	50.6	P/P	30 - 160
2186499	Imidacloprid	131	135	P/P	30 - 160
2186499	Linuron	55.8	58.1	P/P	30 - 160
2186499	Mandestrobin	71.8	68.2	P/P	30 - 160
2186499	MCPP	101	97.8	P/P	30 - 160
2186499	Naproxen	48.7	48.5	P/P	30 - 160
2186499	Primidone	79.4	93.2	P/P	30 - 160
2186499	Pyraclostrobin	52.9	54.0	P/P	30 - 160
2186499	Thiamethoxam	90.0	78.2	P/P	30 - 160
2186499	Tolfenpyrad	36.3	39.4	P/P	30 - 160
2186499	Triclopyr	60.6	71.5	P/P	30 - 160

Reference Method: EPA 8321B
Batch ID: P385502

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187277	Acesulfame K	88.6	75.7	P/P	40 - 150
2187277	AMPA	102	108	P/P	40 - 150
2187277	Endothall	95.0	98.5	P/P	40 - 150
2187277	Glufosinate	91.8	86.6	P/P	40 - 150
2187277	Glyphosate	91.9	87.8	P/P	40 - 140
2187277	Sucralose	52.6	51.6	P/P	40 - 150

Reference Method: SM 4500 F-C-2011
Batch ID: P385524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187370	Fluoride	98.4	98.4	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385542

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2187182	Organic Carbon	105	102	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385424

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187011	Turbidity	3.14	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187265	Turbidity	0.388	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P385397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186892	Barium	4.73	Spike	P	0 - 20
2186892	Calcium	0.266	Spike	P	0 - 20
2186892	Iron	0.0716	Spike	P	0 - 20
2186892	Magnesium	0.865	Spike	P	0 - 20
2186892	Potassium	0.343	Spike	P	0 - 20
2186892	Sodium	0.864	Spike	P	0 - 20
2186892	Zinc	5.15	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P385397

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186892	Aluminum	0.632	Spike	P	0 - 20
2186892	Antimony	1.48	Spike	P	0 - 20
2186892	Arsenic	1.50	Spike	P	0 - 20
2186892	Boron	0.883	Spike	P	0 - 20
2186892	Cadmium	1.35	Spike	P	0 - 20
2186892	Chromium	0.0570	Spike	P	0 - 20
2186892	Copper	0.0412	Spike	P	0 - 20
2186892	Lead	1.10	Spike	P	0 - 20
2186892	Nickel	0.601	Spike	P	0 - 20
2186892	Selenium	1.18	Spike	P	0 - 20
2186892	Silver	1.14	Spike	P	0 - 20
2186892	Thallium	0.550	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385627

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187011	Chloride	0.160	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187011	Sulfate	0.126	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P385483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187263	Ammonia-N	1.63	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P385673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187392	Kjeldahl Nitrogen	0.590	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187168	NO2NO3-N	1.54	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187378	NO2NO3-N	0.277	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187229	Total-P	0.583	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187185	O-Phosphate-P	1.08	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P385308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186499	2,4-D	1.18	Spike	P	0 - 30
2186499	Acetaminophen	0.0156	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P385308

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2186499	Acetamiprid	0.348	Spike	P	0 - 30
2186499	Afidopyropen	9.32	Spike	P	0 - 30
2186499	Bentazon	0.458	Spike	P	0 - 30
2186499	Benzovindiflupyr	5.54	Spike	P	0 - 30
2186499	Carbamazepine	1.52	Spike	P	0 - 30
2186499	Clothianidin	3.38	Spike	P	0 - 30
2186499	Dinotefuran	1.28	Spike	P	0 - 30
2186499	Diuron	0.833	Spike	P	0 - 30
2186499	Fenuron	2.75	Spike	P	0 - 30
2186499	Fluridone	0.266	Spike	P	0 - 30
2186499	Hydrocodone	5.39	Spike	P	0 - 30
2186499	Ibuprofen	5.60	Spike	P	0 - 30
2186499	Imazapyr	13.0	Spike	P	0 - 30
2186499	Imidacloprid	2.62	Spike	P	0 - 30
2186499	Linuron	4.10	Spike	P	0 - 30
2186499	Mandestrobin	5.15	Spike	P	0 - 30
2186499	MCPP	3.62	Spike	P	0 - 30
2186499	Naproxen	0.365	Spike	P	0 - 30
2186499	Primidone	15.9	Spike	P	0 - 30
2186499	Pyraclostrobin	2.18	Spike	P	0 - 30
2186499	Thiamethoxam	13.9	Spike	P	0 - 30
2186499	Tolfenpyrad	8.17	Spike	P	0 - 30
2186499	Triclopyr	16.5	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P385502

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187277	Acesulfame K	15.7	Spike	P	0 - 30
2187277	AMPA	5.76	Spike	P	0 - 30
2187277	Endothall	3.58	Spike	P	0 - 30
2187277	Glufosinate	5.78	Spike	P	0 - 30
2187277	Glyphosate	4.62	Spike	P	0 - 30
2187277	Sucralose	1.75	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P385408

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187391	Color (true)	6.39	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P385410

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187265	Color (true)	1.57	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P385520

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187370	Total Alkalinity	0.643	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
 Batch ID: P385632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187179	TDS	1.59	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
 Batch ID: P385633

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187370	TDS	0.623	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
 Batch ID: P385702

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187179	TSS	7.69	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P385524

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187370	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
 Batch ID: P385542

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2187182	Organic Carbon	2.05	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2187277
Field Sample ID: 20030487

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	86.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	88.9	P	30 - 160
EPA 8321B	Carbamazepine-d10	55.7	P	30 - 160
EPA 8321B	Diuron-d6	66.8	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Endothall-d6	106	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.1	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	92.1	P	30 - 160
EPA 8321B	Ibuprofen-d3	65.7	P	30 - 160
EPA 8321B	Primidone-d5	87.7	P	30 - 160
EPA 8321B	Sucralose-d6	55.0	P	30 - 160
EPA 8321B	Sucralose-d6	55.0	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A100188
Included Lab Sample IDs: 2187264, 2187267, 2187270

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	97.2	P/P	90 - 110

Reference Method: SM 2120 B-2011
Run ID: A100189
Included Lab Sample IDs: 2187262, 2187265, 2187268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A100196
Included Lab Sample IDs: 2187262, 2187265, 2187268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	101	P/P	95 - 105
Turbidity	101	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A100213
Included Lab Sample IDs: 2187263, 2187266, 2187269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.6	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A100216
Included Lab Sample IDs: 2187278, 2187279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	100	101	P/P	90 - 110
Calcium	102	101	P/P	90 - 110
Iron	104	104	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Potassium	102	101	P/P	90 - 110
Sodium	103	102	P/P	90 - 110
Zinc	100	102	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A100227
Included Lab Sample IDs: 2187262, 2187265, 2187268

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.9	99.3	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A100227
Included Lab Sample IDs: 2187262, 2187265, 2187268

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

Reference Method: SM 4500 F-C-2011

Run ID: A100227

Included Lab Sample IDs: 2187262, 2187265, 2187268

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100229

Included Lab Sample IDs: 2187263, 2187266, 2187269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100232

Included Lab Sample IDs: 2187263, 2187266, 2187269

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

Reference Method: EPA 8321B

Run ID: A100248

Included Lab Sample IDs: 2187277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	94.6	92.2	P/P	60 - 160
Glufosinate	97.2	94.7	P/P	60 - 160
Glyphosate	92.0	95.7	P/P	60 - 160

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100267

Included Lab Sample IDs: 2187262, 2187265, 2187268

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

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2187277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	82.9	82.1	P/P	50 - 150
Acetaminophen	116	110	P/P	60 - 160
Acetamiprid	108	113	P/P	50 - 150
Afidopyropen	103	104	P/P	50 - 150
Bentazon	97.0	111	P/P	50 - 160
Benzovindiflupyr	101	90.7	P/P	50 - 150
Carbamazepine	119	120	P/P	60 - 150
Clothianidin	112	116	P/P	60 - 150
Dinotefuran	99.8	94.8	P/P	50 - 150
Diuron	107	111	P/P	60 - 160
Fenuron	114	108	P/P	60 - 150

Quality Assurance Report Calibration Verification

Reference Method: EPA 8321B

Run ID: A100276

Included Lab Sample IDs: 2187277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluridone	128	127	P/P	60 - 160
Hydrocodone	105	107	P/P	60 - 150
Ibuprofen	89.5	83.1	P/P	50 - 160
Imazapyr	73.0	67.2	P/P	50 - 150
Imidacloprid	112	114	P/P	60 - 150
Linuron	101	104	P/P	60 - 150
Mandestrobin	123	115	P/P	50 - 150
MCPP	90.3	95.1	P/P	50 - 150
Naproxen	94.0	92.5	P/P	50 - 160
Primidone	111	102	P/P	60 - 150
Pyraclostrobin	101	96.1	P/P	60 - 150
Thiamethoxam	113	112	P/P	50 - 150
Tolfenpyrad	81.1	82.4	P/P	60 - 150
Triclopyr	86.8	77.2	P/P	50 - 150

Reference Method: EPA 8321B

Run ID: A100280

Included Lab Sample IDs: 2187277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	99.3	89.8	P/P	60 - 160
Endothall	93.5	99.2	P/P	60 - 160

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100287

Included Lab Sample IDs: 2187263, 2187266, 2187269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	101	99.7	P/P	90 - 110
Total-P	99.7	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100320

Included Lab Sample IDs: 2187263

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.5	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100324

Included Lab Sample IDs: 2187266, 2187269

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	98.4	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100326

Included Lab Sample IDs: 2187278, 2187279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	94.5	94.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100326

Included Lab Sample IDs: 2187278, 2187279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Antimony	95.3	95.6	P/P	90 - 110
Arsenic	94.3	93.9	P/P	90 - 110
Boron	103	103	P/P	90 - 110
Cadmium	93.3	93.4	P/P	90 - 110
Chromium	96.7	96.0	P/P	90 - 110
Lead	96.6	95.4	P/P	90 - 110
Selenium	90.5	90.7	P/P	90 - 110
Silver	104	104	P/P	90 - 110
Thallium	94.0	92.6	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A100356

Included Lab Sample IDs: 2187278, 2187279

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	99.0	97.5	P/P	90 - 110
Nickel	99.8	98.1	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A100390

Included Lab Sample IDs: 2187277

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	103	95.2	P/P	60 - 160

* 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						3.14	
	Turbidity						0.388	
EPA 200.7 Rev. 4.4	Barium	98.0	96.8	102	103			4.73
	Calcium	101	102	102	99.0			0.266
	Iron	103	106	106	105			0.0716
	Magnesium	103	104	103	103			0.865
	Potassium	101	102	103	102			0.343
	Sodium	101	99.9	99.7				0.864
	Zinc	98.9	100	105	107			5.15
EPA 200.8 Rev. 5.4	Aluminum	91.5	91.9	91.3	92.8			0.632
	Antimony	93.9	96.4	95.0	97.6			1.48
	Arsenic	95.0	96.8	95.6	94.1			1.50
	Boron	99.9	101	102	105			0.883
	Cadmium	93.0	92.7	91.5	96.7			1.35
	Chromium	95.2	98.3	98.2	100			0.0570
	Copper	102	102	102	103			0.0412
	Lead	96.2	100	99.2	100			1.10
	Nickel	101	100	99.6	102			0.601
	Selenium	89.7	87.9	86.8	86.6			1.18
	Silver	106	106	105	105			1.14
	Thallium	95.6	99.9	100	103			0.550
EPA 300.0 Rev. 2.1	Chloride	106	104	106			0.160	
	Sulfate	106	105	107			0.126	
EPA 350.1 Rev. 2.0	Ammonia-N	99.6	101	98.0				1.63
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	109	109	108				0.590
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.5	98.0				1.54
	NO2NO3-N	102	99.5	100				0.277
EPA 365.1 Rev. 2.0	Total-P	104	105	106				0.583
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.6	96.8	97.9				1.08
EPA 8321B	2,4-D	93.9						1.18
	Acesulfame K	104	88.6	75.7				15.7
	Acetaminophen	87.5	81.0	81.0				0.0156
	Acetamiprid	80.1	72.3	72.1				0.348
	Afidopyrophen	68.4	68.1	62.0				9.32
	AMPA	97.5	102	108				5.76
	Bentazon	68.9						0.458
	Benzovindiflupyr	59.6	51.4	54.4				5.54
	Carbamazepine	73.9	60.4	59.5				1.52
	Clothianidin	91.5	78.8	81.8				3.38
	Dinotefuran	93.3	86.9	88.0				1.28
	Diuron	67.5	50.1	50.6				0.833
	Endothall	93.4	95.0	98.5				3.58
	Fenuron	92.9	74.3	72.3				2.75
	Fluridone	97.5	92.2	91.9				0.266
	Glufosinate	96.6	91.8	86.6				5.78
	Glyphosate	96.4	91.9	87.8				4.62
	Hydrocodone	83.9	71.4	67.6				5.39
	Ibuprofen	79.0	64.1	60.6				5.60
	Imazapyr	58.2	50.6	61.8				13.0
	Imidacloprid	113	131	135				2.62
	Linuron	69.3	55.8	58.1				4.10
	Mandestrobin	78.5	71.8	68.2				5.15
	MCPP	112	97.8	101				3.62
	Naproxen	62.6	48.5	48.7				0.365

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Primidone	92.3	79.4	93.2		15.9
	Pyraclostrobin	56.9	54.0	52.9		2.18
	Sucralose	96.0	52.6	51.6		1.75
	Thiamethoxam	91.1	90.0	78.2		13.9
	Tolfenpyrad	30.9	39.4	36.3		8.17
	Triclopyr	70.2	71.5	60.6		16.5
SM 2120 B-2011	Color (true)	101			6.39	
	Color (true)	101			1.57	
SM 2320 B-2011	Total Alkalinity	101			0.643	
SM 2540 C-2011	TDS				1.59	
	TDS				0.623	
SM 2540 D-2011	TSS				7.69	
SM 4500 F-C-2011	Fluoride	96.9	98.4	98.4		0.0
SM 5310 B-2011	Organic Carbon	100	105	102		2.05

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2187262, 2187265, 2187268
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2187278, 2187279
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2187278, 2187279
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2187262, 2187265, 2187268
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2187262, 2187265, 2187268
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2187263, 2187266, 2187269
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2187263, 2187266, 2187269
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2187263, 2187266, 2187269
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2187263, 2187266, 2187269
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2187264, 2187267, 2187270
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2187277
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2187277
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2187262, 2187265, 2187268
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2187262, 2187265, 2187268
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO3	2187278, 2187279
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2187262, 2187265, 2187268
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2187262, 2187265, 2187268
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2187262, 2187265, 2187268
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2187263, 2187266, 2187269

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	07/30/2020			07/30/2020 15:42	Blanca Fach	2187262, 2187265, 2187268
EPA 200.7 Rev. 4.4	07/30/2020	07/30/2020 16:00	Elliott D. Healy	07/31/2020 17:41	Betina Topolski	2187278
	07/30/2020	07/30/2020 16:00	Elliott D. Healy	07/31/2020 17:49	Betina Topolski	2187279
EPA 200.8 Rev. 5.4	07/30/2020	07/30/2020 16:00	Elliott D. Healy	08/06/2020 23:13	Alexander Thompson	2187278
	07/30/2020	07/30/2020 16:00	Elliott D. Healy	08/06/2020 23:21	Alexander Thompson	2187279
	07/30/2020	07/30/2020 16:00	Elliott D. Healy	08/07/2020 19:54	Alexander Thompson	2187278
	07/30/2020	07/30/2020 16:00	Elliott D. Healy	08/07/2020 19:59	Alexander Thompson	2187279
EPA 300.0 Rev. 2.1	07/30/2020			08/01/2020 17:57	Julia Storbeck	2187262
	07/30/2020			08/01/2020 18:09	Julia Storbeck	2187265
	07/30/2020			08/01/2020 18:21	Julia Storbeck	2187268
EPA 350.1 Rev. 2.0	07/30/2020			08/02/2020 12:45	Ping Hua	2187263
	07/30/2020			08/02/2020 12:49	Ping Hua	2187266
	07/30/2020			08/02/2020 12:51	Ping Hua	2187269
EPA 351.2 Rev. 2.0	07/30/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 14:52	Jhamieka S. Greenwood	2187263
	07/30/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 16:11	Jhamieka S. Greenwood	2187266
	07/30/2020	08/05/2020 09:31	Sima Feizi	08/06/2020 16:12	Jhamieka S. Greenwood	2187269
EPA 353.2 Rev. 2.0	07/30/2020			08/03/2020 09:57	Beverly Y. Sanders	2187263
	07/30/2020			08/03/2020 10:10	Beverly Y. Sanders	2187266
	07/30/2020			08/03/2020 10:12	Beverly Y. Sanders	2187269
EPA 365.1 Rev. 2.0	07/30/2020	08/04/2020 10:15	Lipi Saha	08/05/2020 12:42	Benjamin T. Nordmann	2187263
	07/30/2020	08/04/2020 10:15	Lipi Saha	08/05/2020 12:45	Benjamin T. Nordmann	2187266
	07/30/2020	08/04/2020 10:15	Lipi Saha	08/05/2020 12:46	Benjamin T. Nordmann	2187269
EPA 365.1 Rev. 2.0 dissolved	07/30/2020			07/30/2020 15:22	Jhamieka S. Greenwood	2187264
	07/30/2020			07/30/2020 15:24	Jhamieka S. Greenwood	2187270
	07/30/2020			07/30/2020 15:25	Jhamieka S. Greenwood	2187267
EPA 8321B	07/30/2020	07/30/2020 14:00	Hoor Shaik	08/02/2020 02:48	Juyoung Kim	2187277
	07/30/2020	08/03/2020 11:30	Rebecca Ware	08/03/2020 14:16	Rebecca Ware	2187277
	07/30/2020	08/03/2020 11:30	Rebecca Ware	08/04/2020 12:43	Rebecca Ware	2187277
	07/30/2020	08/03/2020 11:30	Rebecca Ware	08/10/2020 22:09	Rebecca Ware	2187277
SM 2120 B-2011	07/30/2020			07/30/2020 16:12	Madeline Gruver	2187262
	07/30/2020			07/30/2020 16:39	Madeline Gruver	2187268
	07/30/2020			07/30/2020 16:58	Madeline Gruver	2187265
SM 2320 B-2011	07/30/2020			07/31/2020 19:31	Dale L. Simmons	2187262
	07/30/2020			07/31/2020 19:47	Dale L. Simmons	2187265
	07/30/2020			07/31/2020 19:59	Dale L. Simmons	2187268
SM 2340B	07/30/2020			07/31/2020 17:41	Betina Topolski	2187278
	07/30/2020			07/31/2020 17:49	Betina Topolski	2187279
SM 2540 C-2011	07/30/2020			07/31/2020 17:30	Madeline Gruver	2187262, 2187265, 2187268
SM 2540 D-2011	07/30/2020			07/31/2020 17:30	Madeline Gruver	2187262, 2187265, 2187268
SM 4500 F-C-2011	07/30/2020			07/31/2020 19:31	Dale L. Simmons	2187262

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 4500 F-C-2011	07/30/2020			07/31/2020 19:47	Dale L. Simmons	2187265
	07/30/2020			07/31/2020 19:59	Dale L. Simmons	2187268
SM 5310 B-2011	07/30/2020			07/31/2020 23:58	David Boose	2187263
	07/30/2020			08/01/2020 00:10	David Boose	2187266
	07/30/2020			08/01/2020 00:49	David Boose	2187269