

Chemical Analysis Report

NE-DIST-2020-09-24-02

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-2020-09-21-19**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
Attn: Jeremy Parrish

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator

Date Certified: 14-OCT-2020 14:21



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: 09/23/2020 13:50

Field ID: 20030474

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197928	EPA 180.1 Rev. 2.0	Turbidity	8.1	A	NTU	P387815	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P388092	
		Sulfate	32		mg SO4/L	P388096	
		Color (true)	270		PCU	P387817	
	SM 2320 B-2011	Total Alkalinity	71	A	mg CaCO3/L	P387941	
	SM 2540 C-2011	TDS	246		mg/L	P388195	
	SM 2540 D-2011	TSS	6	I	mg/L	P388119	
	SM 4500 F-C-2011	Fluoride	0.16		mg F/L	P387942	
2197929	EPA 350.1 Rev. 2.0	Ammonia-N	0.19		mg N/L	P387889	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P387923	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.27		mg N/L	P387911	
	EPA 365.1 Rev. 2.0	Total-P	0.19		mg P/L	P387968	MS
	SM 5310 B-2011	Organic Carbon	25		mg C/L	P387982	
2197930	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P387811	
2197962	EPA 200.7 Rev. 4.4	Barium	24.7		ug/L	P387933	
		Calcium	34.0		mg/L	P387933	
		Iron	1.42E+03		ug/L	P387933	
		Magnesium	7.53		mg/L	P387933	
		Potassium	4.1		mg/L	P387933	
		Sodium	31.5		mg/L	P387933	
		Zinc	5.0	U	ug/L	P387933	
	EPA 200.8 Rev. 5.4	Aluminum	480		ug/L	P387933	
		Antimony	0.13	I	ug/L	P387933	
		Arsenic	1.26		ug/L	P387933	
		Beryllium	0.026	I	ug/L	P387933	
		Boron**	47.0		ug/L	P387933	
		Cadmium	0.020	U	ug/L	P387933	
		Chromium	0.92	I	ug/L	P387933	
		Copper	3.40		ug/L	P387933	
		Lead	0.52		ug/L	P387933	
		Nickel	0.59	I	ug/L	P387933	
		Selenium	0.20	U	ug/L	P387933	
		Silver	0.010	U	ug/L	P387933	
		Thallium	0.10	U	ug/L	P387933	
	SM 2340B	Hardness	116		mg/L	P387933	

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: Bull CR NE Crossing CR 215

Collection Date/Time: 09/23/2020 12:30

Field ID: 20030487

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197934	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P387815	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P388092	
		Sulfate	2.1		mg SO4/L	P388096	
	SM 2120 B-2011	Color (true)	480		PCU	P387817	
	SM 2320 B-2011	Total Alkalinity	6.4		mg CaCO3/L	P388086	
	SM 2540 C-2011	TDS	147		mg/L	P388195	
	SM 2540 D-2011	TSS	2	U	mg/L	P388119	
	SM 4500 F-C-2011	Fluoride	0.085	I	mg F/L	P387942	
2197935	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P387889	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P387923	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P387912	
	EPA 365.1 Rev. 2.0	Total-P	0.15		mg P/L	P387968	MS
	SM 5310 B-2011	Organic Carbon	40		mg C/L	P387982	
2197936	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.11		mg P/L	P387811	
2197961	EPA 8321B	2,4-D	0.0020	U	ug/L	P387915	
		Acesulfame K**	0.10	U	ug/L	P387746	
		AMPA**	0.10	U	ug/L	P387746	
		Sucralose**	0.15		ug/L	P387746	
		Acetaminophen**	0.0080	U	ug/L	P387915	
		Acetamiprid**	0.0020	U	ug/L	P387915	
		Endothall**	0.25	U	ug/L	P387746	
		Glufosinate**	0.10	U	ug/L	P387746	
		Glyphosate**	0.10	U	ug/L	P387746	
		Afidopyrophen**	0.0020	U	ug/L	P387915	
		Bentazon	8.0E-04	U	ug/L	P387915	
		Benzovindiflupyr**	0.0020	U	ug/L	P387915	
		Carbamazepine**	0.0013	I	ug/L	P387915	
		Clothianidin**	0.0020	U	ug/L	P387915	
		Dinotefuran**	0.0020	U	ug/L	P387915	
		Diuron	0.0020	U	ug/L	P387915	
		Fenuron	0.016	U	ug/L	P387915	
		Fluridone**	8.0E-04	U	ug/L	P387915	
		Imazapyr**	0.0060	I	ug/L	P387915	
		Hydrocodone**	0.0020	U	ug/L	P387915	
		Ibuprofen**	0.020	U	ug/L	P387915	
		Imidacloprid	0.0020	U	ug/L	P387915	
		Linuron	0.0040	U	ug/L	P387915	
		Mandestrobin**	0.0020	U	ug/L	P387915	
		MCPD	0.0020	U	ug/L	P387915	
		Naproxen**	0.0080	U	ug/L	P387915	
		Primidone**	0.0040	U	ug/L	P387915	
		Pyraclostrobin**	0.0020	U	ug/L	P387915	
		Thiamethoxam**	0.0020	U	ug/L	P387915	

Field ID: 20030487

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197961	EPA 8321B	Tolfenpyrad**	0.0020	U	ug/L	P387915	
		Triclopyr**	0.0040	U	ug/L	P387915	
2197963	EPA 200.7 Rev. 4.4	Barium	12.1		ug/L	P387933	
		Calcium	7.52		mg/L	P387933	
		Iron	1.86E+03		ug/L	P387933	
		Magnesium	2.20		mg/L	P387933	
		Potassium	0.32	I	mg/L	P387933	
		Sodium	7.9		mg/L	P387933	
		Zinc	5.0	U	ug/L	P387933	
	EPA 200.8 Rev. 5.4	Aluminum	750		ug/L	P387933	
		Antimony	0.050	U	ug/L	P387933	
		Arsenic	0.75		ug/L	P387933	
		Beryllium	0.054		ug/L	P387933	
		Boron**	18.9		ug/L	P387933	
		Cadmium	0.023	I	ug/L	P387933	
		Chromium	1.0	I	ug/L	P387933	
		Copper	0.65	I	ug/L	P387933	
		Lead	0.93		ug/L	P387933	
		Nickel	0.77	I	ug/L	P387933	
		Selenium	0.26	I	ug/L	P387933	
		Silver	0.010	U	ug/L	P387933	
		Thallium	0.10	U	ug/L	P387933	
	SM 2340B	Hardness	27.8		mg/L	P387933	

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 and precision for bentazon could not be assessed due to high concentration of parameter in the spiked sample.

EPA 200.8 Rev. 5.4: The lead result was confirmed in the undigested sample on 10/02/2020.

Sample Location: Peters Creek @ Rosemary Hill Rd.

Collection Date/Time: 09/23/2020 12:00

Field ID: 20030571

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2197931	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P387815	
	EPA 300.0 Rev. 2.1	Chloride	9.0		mg Cl/L	P388092	
		Sulfate	2.2		mg SO4/L	P388096	
	SM 2120 B-2011	Color (true)	330		PCU	P387817	
	SM 2320 B-2011	Total Alkalinity	4.6		mg CaCO3/L	P388086	
	SM 2540 C-2011	TDS	96		mg/L	P388195	
	SM 2540 D-2011	TSS	2	U	mg/L	P388119	
2197932	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P387942	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P387889	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P388103	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.028		mg N/L	P387911	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P387968	MS
2197933	SM 5310 B-2011	Organic Carbon	29		mg C/L	P387982	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.009	I	mg P/L	P387811	

Ref. Method and Comment:

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387815

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P387933

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: P387933

Component	Result	Code	Units
Aluminum	5.0	U	ug/L
Antimony	0.050	U	ug/L
Arsenic	0.050	U	ug/L
Beryllium	0.010	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: P388092

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388096

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387889

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: P387923

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388103

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387911

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387912

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387968

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387811

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

Reference Method: EPA 8321B
Batch ID: P387746

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: P387915

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

Quality Assurance Report

Method Blank Results

Reference Method: EPA 8321B
Batch ID: P387915

Component	Result	Code	Units
Benzovindiflupyr	0.0020	U	ug/L
Carbamazepine	8.0E-04	U	ug/L
Clothianidin	0.0020	U	ug/L
Dinotefuran	0.0020	U	ug/L
Diuron	0.0020	U	ug/L
Fenuron	0.016	U	ug/L
Fluridone	8.0E-04	U	ug/L
Hydrocodone	0.0020	U	ug/L
Ibuprofen	0.020	U	ug/L
Imazapyr	0.0040	U	ug/L
Imidacloprid	0.0020	U	ug/L
Linuron	0.0040	U	ug/L
Mandestrobin	0.0020	U	ug/L
MCPP	0.0020	U	ug/L
Naproxen	0.0080	U	ug/L
Primidone	0.0040	U	ug/L
Pyraclostrobin	0.0020	U	ug/L
Thiamethoxam	0.0020	U	ug/L
Tolfenpyrad	0.0020	U	ug/L
Triclopyr	0.0040	U	ug/L

Reference Method: SM 2120 B-2011
Batch ID: P387817

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P387941

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

Reference Method: SM 2320 B-2011
Batch ID: P388086

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

Reference Method: SM 2540 C-2011
Batch ID: P388195

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388119

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P387942

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P387982

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: P387933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Barium	101		P	85 - 115
Calcium	103		P	85 - 115
Iron	103		P	85 - 115
Magnesium	100		P	85 - 115
Potassium	103		P	85 - 115
Sodium	99.5		P	85 - 115
Zinc	91.7		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387933

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Aluminum	97.4		P	85 - 115
Antimony	104		P	85 - 115
Arsenic	101		P	85 - 115
Beryllium	96.8		P	85 - 115
Boron	95.2		P	85 - 115
Cadmium	104		P	85 - 115
Chromium	100		P	85 - 115
Copper	100		P	85 - 115
Lead	99.7		P	85 - 115
Nickel	100		P	85 - 115
Selenium	103		P	85 - 115
Silver	103		P	85 - 115
Thallium	97.4		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388092

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388096

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387889

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.7		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387923

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 351.2 Rev. 2.0
Batch ID: P388103

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387911

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387912

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: P387968

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387811

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

Reference Method: EPA 8321B
Batch ID: P387746

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Acesulfame K	98.1		P	40 - 150
AMPA	82.5		P	40 - 150
Endothall	94.7		P	40 - 150
Glufosinate	89.8		P	40 - 150
Glyphosate	101		P	40 - 140
Sucralose	95.8		P	40 - 150

Reference Method: EPA 8321B
Batch ID: P387915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2,4-D	81.6		P	30 - 160
Acetaminophen	82.7		P	30 - 160
Acetamiprid	74.6		P	30 - 160
Afidopyropen	53.6		P	30 - 160
Bentazon	49.4		P	30 - 160
Benzovindiflupyr	69.2		P	30 - 160
Carbamazepine	47.4		P	30 - 160
Clothianidin	75.7		P	30 - 160
Dinotefuran	96.8		P	30 - 160
Diuron	45.3		P	30 - 160
Fenuron	91.0		P	30 - 160

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 8321B
Batch ID: P387915

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluridone	71.0		P	30 - 160
Hydrocodone	78.1		P	30 - 160
Ibuprofen	71.2		P	30 - 160
Imazapyr	105		P	30 - 160
Imidacloprid	96.2		P	30 - 160
Linuron	64.0		P	30 - 160
Mandestrobin	76.9		P	30 - 160
MCPP	68.5		P	30 - 160
Naproxen	75.5		P	30 - 160
Primidone	77.6		P	30 - 160
Pyraclostrobin	73.8		P	30 - 160
Thiamethoxam	79.6		P	30 - 160
Tolfenpyrad	47.2		P	30 - 160
Triclopyr	61.9		P	30 - 160

Reference Method: SM 2120 B-2011
Batch ID: P387817

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	96.5		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P387941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.6		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P388086

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

Reference Method: SM 4500 F-C-2011
Batch ID: P387942

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	101		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P387982

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P387933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197906	Barium	103		P	80 - 120
2197906	Calcium	105		P	80 - 120
2197906	Iron	111		P	80 - 120
2197906	Magnesium	107		P	80 - 120
2197906	Potassium	103		P	80 - 120
2197906	Sodium	107		P	80 - 120
2197906	Zinc	97.6		P	80 - 120
2198102	Barium	105	107	P/P	80 - 120
2198102	Calcium	107	110	P/P	80 - 120
2198102	Iron	109	111	P/P	80 - 120
2198102	Magnesium	106	108	P/P	80 - 120
2198102	Potassium	109	109	P/P	80 - 120
2198102	Sodium	113	113	P/P	80 - 120
2198102	Zinc	95.2	97.0	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387933

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197906	Aluminum	98.9		P	80 - 120
2197906	Antimony	107		P	80 - 120
2197906	Arsenic	104		P	80 - 120
2197906	Beryllium	94.3		P	80 - 120
2197906	Boron	98.9		P	80 - 120
2197906	Cadmium	105		P	80 - 120
2197906	Chromium	104		P	80 - 120
2197906	Copper	98.5		P	80 - 120
2197906	Lead	103		P	80 - 120
2197906	Nickel	100		P	80 - 120
2197906	Selenium	103		P	80 - 120
2197906	Silver	100		P	80 - 120
2197906	Thallium	102		P	80 - 120
2198102	Aluminum	101	102	P/P	80 - 120
2198102	Antimony	104	104	P/P	80 - 120
2198102	Arsenic	104	102	P/P	80 - 120
2198102	Beryllium	96.7	95.3	P/P	80 - 120
2198102	Boron	98.3	98.3	P/P	80 - 120
2198102	Cadmium	104	102	P/P	80 - 120
2198102	Chromium	102	102	P/P	80 - 120
2198102	Copper	104	103	P/P	80 - 120
2198102	Lead	102	102	P/P	80 - 120
2198102	Nickel	102	102	P/P	80 - 120
2198102	Selenium	105	104	P/P	80 - 120
2198102	Silver	103	102	P/P	80 - 120
2198102	Thallium	101	102	P/P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197720	Chloride	103		P	90 - 110
2197931	Chloride	103		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388096

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197720	Sulfate	98.9		P	90 - 110
2197931	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387889

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197899	Ammonia-N	94.1	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387923

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197785	Kjeldahl Nitrogen	88.0	97.4	F/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388103

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198678	Kjeldahl Nitrogen	102	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387911

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197552	NO2NO3-N	99.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387912

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197935	NO2NO3-N	92.8	92.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387968

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197883	Total-P	112	113	F/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387811

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197930	O-Phosphate-P	97.4	97.1	P/P	90 - 110

Reference Method: EPA 8321B
Batch ID: P387746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197190	Acesulfame K	114	119	P/P	40 - 150
2197190	AMPA	114	117	P/P	40 - 150
2197190	Endothall	107	93.8	P/P	40 - 150

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 8321B
Batch ID: P387746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197190	Glufosinate	83.8	94.5	P/P	40 - 150
2197190	Glyphosate	82.6	80.4	P/P	40 - 140
2197190	Sucralose	99.1	102	P/P	40 - 150

Reference Method: EPA 8321B
Batch ID: P387915

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2198224	2,4-D	52.0	62.9	P/P	30 - 160
2198224	Acetaminophen	56.9	64.1	P/P	30 - 160
2198224	Acetamiprid	62.6	71.6	P/P	30 - 160
2198224	Afidopyropen	48.9	53.4	P/P	30 - 160
2198224	Benzovindiflupyr	55.6	65.2	P/P	30 - 160
2198224	Carbamazepine	38.7	42.5	P/P	30 - 160
2198224	Clothianidin	51.8	53.1	P/P	30 - 160
2198224	Dinotefuran	81.6	88.3	P/P	30 - 160
2198224	Diuron	38.0	42.1	P/P	30 - 160
2198224	Fenuron	71.3	79.0	P/P	30 - 160
2198224	Fluridone	63.0	72.3	P/P	30 - 160
2198224	Hydrocodone	62.8	72.2	P/P	30 - 160
2198224	Ibuprofen	54.5	65.5	P/P	30 - 160
2198224	Imazapyr	81.2	86.3	P/P	30 - 160
2198224	Imidacloprid	98.3	110	P/P	30 - 160
2198224	Linuron	62.0	63.4	P/P	30 - 160
2198224	Mandestrobin	66.7	78.8	P/P	30 - 160
2198224	MCP	52.1	58.6	P/P	30 - 160
2198224	Naproxen	43.5	44.7	P/P	30 - 160
2198224	Primidone	69.0	70.1	P/P	30 - 160
2198224	Pyraclostrobin	62.8	72.0	P/P	30 - 160
2198224	Thiamethoxam	64.8	71.0	P/P	30 - 160
2198224	Tolfenpyrad	44.3	43.7	P/P	30 - 160
2198224	Triclopyr	47.6	57.5	P/P	30 - 160

Reference Method: SM 4500 F-C-2011
Batch ID: P387942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197928	Fluoride	99.6	100	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P387982

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2197863	Organic Carbon	100	99.5	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P387815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197928	Turbidity	0.124	Sample	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P387933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198102	Barium	2.21	Spike	P	0 - 20
2198102	Calcium	1.54	Spike	P	0 - 20
2198102	Iron	1.41	Spike	P	0 - 20
2198102	Magnesium	0.982	Spike	P	0 - 20
2198102	Potassium	0.130	Spike	P	0 - 20
2198102	Sodium	0.285	Spike	P	0 - 20
2198102	Zinc	1.87	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P387933

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198102	Aluminum	1.11	Spike	P	0 - 20
2198102	Antimony	0.654	Spike	P	0 - 20
2198102	Arsenic	1.19	Spike	P	0 - 20
2198102	Beryllium	1.54	Spike	P	0 - 20
2198102	Boron	0.0357	Spike	P	0 - 20
2198102	Cadmium	1.54	Spike	P	0 - 20
2198102	Chromium	0.394	Spike	P	0 - 20
2198102	Copper	0.391	Spike	P	0 - 20
2198102	Lead	0.734	Spike	P	0 - 20
2198102	Nickel	0.00777	Spike	P	0 - 20
2198102	Selenium	1.32	Spike	P	0 - 20
2198102	Silver	0.968	Spike	P	0 - 20
2198102	Thallium	0.350	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197720	Chloride	0.719	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388096

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197720	Sulfate	0.320	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P387889

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197899	Ammonia-N	1.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P387923

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197785	Kjeldahl Nitrogen	5.55	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388103

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198678	Kjeldahl Nitrogen	1.93	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387911

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197552	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P387912

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197935	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P387968

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197883	Total-P	0.634	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P387811

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197930	O-Phosphate-P	0.145	Spike	P	0 - 20

Reference Method: EPA 8321B
Batch ID: P387746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197190	Acesulfame K	4.24	Spike	P	0 - 30
2197190	AMPA	1.86	Spike	P	0 - 30

Quality Assurance Report Precision

Reference Method: EPA 8321B
Batch ID: P387746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197190	Endothall	13.0	Spike	P	0 - 30
2197190	Glufosinate	12.0	Spike	P	0 - 30
2197190	Glyphosate	2.62	Spike	P	0 - 30
2197190	Sucralose	2.90	Spike	P	0 - 30

Reference Method: EPA 8321B
Batch ID: P387915

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198224	2,4-D	12.9	Spike	P	0 - 30
2198224	Acetaminophen	11.9	Spike	P	0 - 30
2198224	Acetamiprid	13.4	Spike	P	0 - 30
2198224	Afidopyropen	8.83	Spike	P	0 - 30
2198224	Benzovindiflupyr	15.9	Spike	P	0 - 30
2198224	Carbamazepine	7.27	Spike	P	0 - 30
2198224	Clothianidin	2.32	Spike	P	0 - 30
2198224	Dinotefuran	7.55	Spike	P	0 - 30
2198224	Diuron	9.38	Spike	P	0 - 30
2198224	Fenuron	10.3	Spike	P	0 - 30
2198224	Fluridone	8.22	Spike	P	0 - 30
2198224	Hydrocodone	14.0	Spike	P	0 - 30
2198224	Ibuprofen	18.4	Spike	P	0 - 30
2198224	Imazapyr	2.91	Spike	P	0 - 30
2198224	Imidacloprid	8.01	Spike	P	0 - 30
2198224	Linuron	2.24	Spike	P	0 - 30
2198224	Mandestrobin	16.6	Spike	P	0 - 30
2198224	MCP	11.7	Spike	P	0 - 30
2198224	Naproxen	2.73	Spike	P	0 - 30
2198224	Primidone	1.27	Spike	P	0 - 30
2198224	Pyraclostrobin	13.7	Spike	P	0 - 30
2198224	Thiamethoxam	6.68	Spike	P	0 - 30
2198224	Tolfenpyrad	1.36	Spike	P	0 - 30
2198224	Triclopyr	18.8	Spike	P	0 - 30

Reference Method: SM 2120 B-2011
Batch ID: P387817

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197898	Color (true)	0.223	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P387941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197928	Total Alkalinity	0.118	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
Batch ID: P388086

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2198744	Total Alkalinity	1.35	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P388195

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197898	TDS	2.46	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P387942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197928	Fluoride	0.467	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P387982

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2197863	Organic Carbon	0.401	Spike	P	0 - 20

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

Quality Assurance Report Surrogates

Lab Sample ID: 2197961
Field Sample ID: 20030487

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
EPA 8321B	2,4-D-d3	57.2	P	30 - 160
EPA 8321B	Acetaminophen-d4	60.2	P	30 - 160
EPA 8321B	Carbamazepine-d10	60.8	P	30 - 160
EPA 8321B	Diuron-d6	51.7	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Endothall-d6	111	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	69.6	P	30 - 160
EPA 8321B	Glyphosate 13C 15N	69.6	P	30 - 160
EPA 8321B	Ibuprofen-d3	88.3	P	30 - 160
EPA 8321B	Primidone-d5	55.2	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160
EPA 8321B	Sucralose-d6	102	P	30 - 160

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101184

Included Lab Sample IDs: 2197930, 2197933, 2197936

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A101185

Included Lab Sample IDs: 2197928, 2197931, 2197934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	100	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A101186

Included Lab Sample IDs: 2197928, 2197931, 2197934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.5	99.1	P/P	90 - 115

Reference Method: EPA 8321B

Run ID: A101191

Included Lab Sample IDs: 2197961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Acesulfame K	90.8	93.8	P/P	60 - 160
Endothall	112	109	P/P	60 - 160

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101210

Included Lab Sample IDs: 2197929, 2197932, 2197935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	95.9	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101223

Included Lab Sample IDs: 2197929, 2197932, 2197935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	97.0	P/P	90 - 110
NO2NO3-N	98.0	97.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101224

Included Lab Sample IDs: 2197961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
AMPA	71.8	74.8	P/P	60 - 160
Glufosinate	94.0	99.4	P/P	60 - 160
Glyphosate	97.5	98.9	P/P	60 - 160

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A101239

Included Lab Sample IDs: 2197928

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101239

Included Lab Sample IDs: 2197928, 2197931, 2197934

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101254

Included Lab Sample IDs: 2197929, 2197935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.8	92.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101262

Included Lab Sample IDs: 2197929, 2197932, 2197935

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

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A101267

Included Lab Sample IDs: 2197962, 2197963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Barium	102	103	P/P	90 - 110
Barium	103	107	P/P	90 - 110
Calcium	104	105	P/P	90 - 110
Calcium	105	104	P/P	90 - 110
Iron	107	107	P/P	90 - 110
Iron	107	107	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Magnesium	104	104	P/P	90 - 110
Potassium	104	105	P/P	90 - 110
Potassium	105	105	P/P	90 - 110
Sodium	108	109	P/P	90 - 110
Sodium	109	109	P/P	90 - 110
Zinc	94.8	98.1	P/P	90 - 110
Zinc	95.9	94.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101281

Included Lab Sample IDs: 2197928, 2197931, 2197934

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101281

Included Lab Sample IDs: 2197928, 2197931, 2197934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	104	105	P/P	90 - 110
Sulfate	105	105	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101296

Included Lab Sample IDs: 2197962, 2197963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	99.7	98.2	P/P	90 - 110
Cadmium	100	101	P/P	90 - 110
Chromium	97.6	101	P/P	90 - 110
Copper	99.4	95.1	P/P	90 - 110
Lead	101	101	P/P	90 - 110
Nickel	98.5	94.4	P/P	90 - 110
Selenium	103	102	P/P	90 - 110
Silver	102	102	P/P	90 - 110
Thallium	97.3	96.3	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A101307

Included Lab Sample IDs: 2197931, 2197934

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	95.8	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101309

Included Lab Sample IDs: 2197929, 2197935

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	102	103	P/P	90 - 110
Total-P	103	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101317

Included Lab Sample IDs: 2197932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.5	93.8	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A101328

Included Lab Sample IDs: 2197962, 2197963

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Aluminum	100	97.0	P/P	90 - 110
Antimony	106	106	P/P	90 - 110
Beryllium	93.9	92.3	P/P	90 - 110
Boron	97.0	96.1	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101338

Included Lab Sample IDs: 2197932

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.1	96.0	P/P	90 - 110

Reference Method: EPA 8321B

Run ID: A101350

Included Lab Sample IDs: 2197961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sucralose	101	98.7	P/P	60 - 160

Reference Method: EPA 8321B

Run ID: A101379

Included Lab Sample IDs: 2197961

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
2,4-D	114	104	P/P	50 - 150
Acetaminophen	105	100	P/P	60 - 160
Acetamiprid	110	119	P/P	50 - 150
Afidopyropen	90.1	94.6	P/P	50 - 150
Bentazon	101	95.3	P/P	50 - 160
Benzovindiflupyr	114	111	P/P	50 - 150
Carbamazepine	99.6	104	P/P	60 - 150
Clothianidin	95.4	96.3	P/P	60 - 150
Dinotefuran	96.3	99.0	P/P	50 - 150
Diuron	103	116	P/P	60 - 160
Fenuron	102	109	P/P	60 - 150
Fluridone	96.2	100	P/P	60 - 160
Hydrocodone	98.8	108	P/P	60 - 150
Ibuprofen	120	116	P/P	50 - 160
Imazapyr	113	115	P/P	50 - 160
Imidacloprid	89.5	107	P/P	60 - 150
Linuron	96.7	97.8	P/P	60 - 150
Mandestrobin	116	104	P/P	50 - 150
MCPP	109	105	P/P	50 - 150
Naproxen	65.6	65.0	P/P	50 - 160
Primidone	95.7	100	P/P	60 - 150
Pyraclostrobin	100	101	P/P	60 - 150
Thiamethoxam	97.2	104	P/P	50 - 150
Tolfenpyrad	101	104	P/P	60 - 150
Triclopyr	102	124	P/P	50 - 150

* 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						0.124	
EPA 200.7 Rev. 4.4	Barium	101	103	105	107			2.21
	Calcium	103	105	107	110			1.54
	Iron	103	111	109	111			1.41
	Magnesium	100	107	106	108			0.982
	Potassium	103	103	109	109			0.130
	Sodium	99.5	107	113	113			0.285
	Zinc	91.7	97.6	95.2	97.0			1.87
EPA 200.8 Rev. 5.4	Aluminum	97.4	101	102	98.9			1.11
	Antimony	104	104	104	107			0.654
	Arsenic	101	104	102	104			1.19
	Beryllium	96.8	96.7	95.3	94.3			1.54
	Boron	95.2	98.3	98.3	98.9			0.0357
	Cadmium	104	104	102	105			1.54
	Chromium	100	102	102	104			0.394
	Copper	100	104	103	98.5			0.391
	Lead	99.7	102	102	103			0.734
	Nickel	100	102	102	100			0.0077
	Selenium	103	105	104	103			1.32
	Silver	103	103	102	100			0.968
	Thallium	97.4	101	102	102			0.350
EPA 300.0 Rev. 2.1	Chloride	105	103	103			0.719	
	Sulfate	103	98.9	100			0.320	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	94.1	96.0				1.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	88.0	97.4				5.55
	Kjeldahl Nitrogen	105	102	106				1.93
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	98.0	99.5	99.5				0.0
	NO ₂ NO ₃ -N	98.5	92.8	92.8				0.0
EPA 365.1 Rev. 2.0	Total-P	108	112	113				0.634
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.4	97.4	97.1				0.145
EPA 8321B	2,4-D	81.6	52.0	62.9				12.9
	Acesulfame K	98.1	114	119				4.24
	Acetaminophen	82.7	56.9	64.1				11.9
	Acetamiprid	74.6	62.6	71.6				13.4
	Afidopyropen	53.6	48.9	53.4				8.83
	AMPA	82.5	114	117				1.86
	Bentazon	49.4						
	Benzovindiflupyr	69.2	55.6	65.2				15.9
	Carbamazepine	47.4	38.7	42.5				7.27
	Clothianidin	75.7	51.8	53.1				2.32
	Dinotefuran	96.8	81.6	88.3				7.55
	Diuron	45.3	38.0	42.1				9.38
	Endothall	94.7	107	93.8				13.0
	Fenuron	91.0	71.3	79.0				10.3
	Fluridone	71.0	63.0	72.3				8.22
	Glufosinate	89.8	83.8	94.5				12.0
	Glyphosate	101	82.6	80.4				2.62
	Hydrocodone	78.1	62.8	72.2				14.0
	Ibuprofen	71.2	54.5	65.5				18.4
	Imazapyr	105	81.2	86.3				2.91
	Imidacloprid	96.2	98.3	110				8.01
	Linuron	64.0	62.0	63.4				2.24
	Mandestrobin	76.9	66.7	78.8				16.6
	MCP	68.5	52.1	58.6				11.7

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 8321B	Naproxen	75.5	43.5	44.7		2.73
	Primidone	77.6	69.0	70.1		1.27
	Pyraclostrobin	73.8	62.8	72.0		13.7
	Sucralose	95.8	99.1	102		2.90
	Thiamethoxam	79.6	64.8	71.0		6.68
	Tolfenpyrad	47.2	44.3	43.7		1.36
	Triclopyr	61.9	47.6	57.5		18.8
SM 2120 B-2011	Color (true)	96.5			0.223	
SM 2320 B-2011	Total Alkalinity	98.6			0.118	
	Total Alkalinity	98.8			1.35	
SM 2540 C-2011	TDS				2.46	
SM 4500 F-C-2011	Fluoride	101	99.6	100		0.467
SM 5310 B-2011	Organic Carbon	102	100	99.5		0.401

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2197928, 2197931, 2197934
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2197962, 2197963
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2197962, 2197963
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2197928, 2197931, 2197934
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2197928, 2197931, 2197934
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2197929, 2197932, 2197935
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2197929, 2197932, 2197935
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2197929, 2197932, 2197935
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2197929, 2197932, 2197935
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2197930, 2197933, 2197936
EPA 8321B	Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS	2197961
EPA 8321B	Water soluble organic compounds by HPLC/MS/MS	2197961
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2197928, 2197931, 2197934
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2197928, 2197931, 2197934
SM 2340B	Hardness by calculation, in aqueous matrices, reported as mg/L CaCO ₃	2197962, 2197963
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2197928, 2197931, 2197934
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2197928, 2197931, 2197934
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2197928, 2197931, 2197934
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2197929, 2197932, 2197935

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	09/24/2020			09/24/2020 14:51	Yen Ta	2197928, 2197931, 2197934
EPA 200.7 Rev. 4.4	09/24/2020	09/28/2020 17:30	Elliott D. Healy	09/29/2020 18:46	Betina Topolski	2197962
	09/24/2020	09/28/2020 17:30	Elliott D. Healy	09/29/2020 19:22	Betina Topolski	2197963
EPA 200.8 Rev. 5.4	09/24/2020	09/28/2020 17:30	Elliott D. Healy	09/30/2020 23:13	Alexander Thompson	2197962
	09/24/2020	09/28/2020 17:30	Elliott D. Healy	09/30/2020 23:20	Alexander Thompson	2197963
	09/24/2020	09/28/2020 17:30	Elliott D. Healy	10/01/2020 15:45	Alexander Thompson	2197962
	09/24/2020	09/28/2020 17:30	Elliott D. Healy	10/01/2020 15:50	Alexander Thompson	2197963
EPA 300.0 Rev. 2.1	09/24/2020			09/30/2020 19:36	Lipi Saha	2197931
	09/24/2020			09/30/2020 22:13	Lipi Saha	2197928
	09/24/2020			09/30/2020 22:26	Lipi Saha	2197934
EPA 350.1 Rev. 2.0	09/24/2020			09/26/2020 15:02	Ping Hua	2197929
	09/24/2020			09/26/2020 15:03	Ping Hua	2197932
	09/24/2020			09/26/2020 15:05	Ping Hua	2197935
EPA 351.2 Rev. 2.0	09/24/2020	09/28/2020 01:45	Elliott Rodriguez	09/29/2020 12:00	Elliott Rodriguez	2197929
	09/24/2020	09/28/2020 01:45	Elliott Rodriguez	09/29/2020 12:03	Elliott Rodriguez	2197935
	09/24/2020	10/01/2020 13:30	David Boose	10/02/2020 12:00	Elliott Rodriguez	2197932
EPA 353.2 Rev. 2.0	09/24/2020			09/28/2020 09:22	Beverly Y. Sanders	2197929
	09/24/2020			09/28/2020 09:23	Beverly Y. Sanders	2197932
	09/24/2020			09/28/2020 09:30	Beverly Y. Sanders	2197935
EPA 365.1 Rev. 2.0	09/24/2020	09/29/2020 12:36	Yen Ta	09/30/2020 16:43	Benjamin T. Nordmann	2197929
	09/24/2020	09/29/2020 12:36	Yen Ta	09/30/2020 16:47	Benjamin T. Nordmann	2197935
	09/24/2020	09/29/2020 12:36	Yen Ta	10/01/2020 14:30	Lipi Saha	2197932
EPA 365.1 Rev. 2.0 dissolved	09/24/2020			09/24/2020 14:48	Samantha Davila	2197930
	09/24/2020			09/24/2020 14:51	Samantha Davila	2197933
	09/24/2020			09/24/2020 14:52	Samantha Davila	2197936
EPA 8321B	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/24/2020 18:19	Rebecca Ware	2197961
	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/25/2020 15:19	Rebecca Ware	2197961
	09/24/2020	09/24/2020 13:40	Rebecca Ware	09/30/2020 14:48	Rebecca Ware	2197961
	09/24/2020	09/30/2020 11:00	Hoor Shaik	10/02/2020 00:24	Juyoung Kim	2197961
SM 2120 B-2011	09/24/2020			09/24/2020 15:53	Benjamin T. Nordmann	2197928
	09/24/2020			09/24/2020 15:54	Benjamin T. Nordmann	2197931
	09/24/2020			09/24/2020 15:55	Benjamin T. Nordmann	2197934
SM 2320 B-2011	09/24/2020			09/25/2020 17:18	Dale L. Simmons	2197928
	09/24/2020			09/30/2020 17:44	Dale L. Simmons	2197931
	09/24/2020			09/30/2020 17:54	Dale L. Simmons	2197934
SM 2340B	09/24/2020			09/29/2020 18:46	Betina Topolski	2197962
	09/24/2020			09/29/2020 19:22	Betina Topolski	2197963
SM 2540 C-2011	09/24/2020			09/25/2020 18:22	Madeline Gruver	2197928, 2197931, 2197934
SM 2540 D-2011	09/24/2020			09/25/2020 18:22	Madeline Gruver	2197928, 2197931, 2197934
SM 4500 F-C-2011	09/24/2020			09/25/2020 17:08	Dale L. Simmons	2197928

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	09/24/2020			09/25/2020 18:27	Dale L. Simmons	2197931
	09/24/2020			09/25/2020 18:39	Dale L. Simmons	2197934
SM 5310 B-2011	09/24/2020			09/29/2020 05:45	David Boose	2197929
	09/24/2020			09/29/2020 05:59	David Boose	2197932
	09/24/2020			09/29/2020 06:14	David Boose	2197935